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PREFACE

The last Academic Program Review for the UC Berkeley School of Public Health occurred in 2004. Since that time, we have experienced a dramatic increase in the pace of change in public health. Globally, we are faced with new public health challenges caused by climate change and our reliance on fossil fuels. We are burdened by a growing and rapidly aging global population, complex and costly health care systems, and a collective failure to share health advances equitably. Our increasingly diverse communities are challenged by epidemics of obesity, preventable chronic disease and injury, emerging infections, violence, and unsafe environments. The increasing complexity of our major public health problems necessitates complex solutions, solutions that are multi-level and multi-sectoral, and solutions that are tailored to the needs of widely varying communities.

At the same time, our ability to understand how health is changing, what influences it, and how we can best effect it is improving at an ever-increasing rate. Twenty-four years ago, when some of our current students were born, the first SMS message had not yet been sent. Comparatively, in 2014, the mobile industry shipped 1.3 billion smartphones, connecting over 50 percent of people on the planet. The world has also produced more data in the last three years than in all of prior history. Electronic medical records are already a $20 billion industry, and the convergence of accelerating data generation and massive leaps in analytic capabilities hold the promise of transforming big data into big health impact. Similar changes have happened in biotechnology. Our 24-year-old students were 10 when the world’s largest-ever biomedical collaboration produced the first human genome. Today, we can sequence one for little more than the cost of a smartphone, and we can begin to speak of understanding the genomes of populations.

As we reflect on these changes, we are committed to preparing our students and faculty to anticipate and respond to challenges in a world very different from just 10 years ago. And indeed, the School has undergone significant internal transformation to prepare us for this challenge. The bullets below highlight some of the most significant changes within the School since 2004.

- Introduced in 2003-4, the School’s public health undergraduate program now represents nearly half of our student body and was recently ranked #1 nationally. In spring 2015, we turned away 40% of applicants to the major due to the cap on enrollment.
- In 2011-12, the School launched the On-Campus/Online MPH (OOMPH) degree program, the first online degree program on the UC Berkeley campus. This program now enrolls approximately 200 students, generates significant revenue for the School, and offers many avenues for growth.
In 2005, the School created an **Office of Diversity Services**. We have since increased the proportion of underrepresented minority students in the School from 5% to 24% and created formal avenues for students, staff, and faculty to address issues of racism, power, and privilege.

In 2008, the School created the **Center for Health Leadership** to enhance the School’s curricular, co-curricular, and experiential offerings to inspire and prepare graduate students to be effective health leaders and professionals.

In 2013, the School welcomed **new Dean** Dr. Stefano Bertozzi. In 2014-5, we established a new leadership team of four Assistant Deans in the areas of Finance, Operations, External Relations, and Student Services.

In 2015, the School restructured to create a 7th division, the **Interdisciplinary Division**, which houses the undergraduate program, OOMPH, the Interdisciplinary MPH, our UC Berkeley-UCSF Joint Medical Program (JMP), the DrPH program, our concurrent degree programs, and the Center for Public Health Practice (CPHP).

In 2015, we underwent a strategic planning process which yielded the **2015-2020 Strategic Plan** (see Appendix 1). We also launched an annual State of the School analysis to create a shared understanding of the School’s performance and established a **Faculty Recruitment Strategy** (see Appendix 2).

The School has experienced significant declines in relative campus support since 2004, yet it has maintained academic excellence.

The document that follows opens with an introductory section, which offers an orientation to the School, our 2015-2020 Strategic Plan, our recent accreditation process, and the previous Academic Program Review. This section provides useful context for the analysis presented thereafter.

The remainder of the document provides a data-driven analysis of the School in the areas of Education; Research; Community Engagement and Service; Diversity, Inclusion, Equity, and Community; and Governance and Management. Each section opens with a table that captures the most pressing strengths, challenges, and aspirations of the School in that area. We have attempted to present a well-reasoned analysis of the growth opportunities and challenges that we now face.
INTRODUCTION

Orientation to the UC Berkeley School of Public Health

Our History
The first school of public health west of the Mississippi, the University of California, Berkeley School of Public Health was founded in 1943, but its origins date more than two decades earlier to the creation of the Department of Hygiene in 1919. Having almost 100 years as one of the nation’s preeminent academic institutions in the field of public health, on a campus with a public mission, provides a unique position to lead change. We are highly regarded for the quality of our faculty and students and have a reputation for excellence in education, research, and community engagement. More than 12,000 Berkeley graduates have put their education and skills into practice in public health worldwide. Our graduates are transformational health leaders across all health sectors, with a legacy of impact and innovation locally, nationally, and globally.

The Berkeley Difference
The UC Berkeley School of Public Health is the only top ten school not housed on a medical campus. Our location on the UC Berkeley campus allows access to leading edge collaborators in key disciplines, including engineering, computer science, social sciences, public policy, journalism, international development, business, law, and beyond. As part of the UC system, we have access to unequaled capacity and networks. In particular, our close partnership with UCSF joins us with a world-class medical campus.

Our Geography and Local Presence
Our location adjacent to Silicon Valley and national centers of innovation puts us at the epicenter of advances in biotechnology, digital health, and big data. The Bay Area is also at the forefront of innovations in integrated health delivery, healthy communities, and health policies. Our geographical location in the largest, second-fastest growing, and most diverse state in the United States, on the Pacific Rim, and sharing a border with Mexico (with whom we share many demographic and epidemiological characteristics) provides a strong platform from which to strengthen our work locally and globally and from which to expand to include the economic powerhouses across the Pacific.

Our Values
We emphasize four major values that guide interactions among faculty, staff, students, and the greater global community in which we interact:

1. HEALTH AS A RIGHT: We strive to eliminate inequities that impact the health and dignity of all people, especially those most vulnerable.
2. **STRENGTH THROUGH DIVERSITY**: We embrace our differences, seeing in them a path to stronger solutions for the communities we care about.

3. **THINK FORWARD**: We foster innovation and train our students to challenge conventional thinking.

4. **IMPACT FIRST**: We focus our research, education, and service efforts in areas with the potential to have transformative impact on the health of populations, locally and globally.

**Our Structure and Size**
At the time of the last Academic Program Review, the School of Public Health was organized into six divisions (Biostatistics, Epidemiology, Environmental Health Sciences, Health Policy & Management, Infectious Diseases & Vaccinology, and Community Health & Human Development), each offering a range of graduate degree programs. In addition to the eponymous graduate programs (master's and doctoral) of the first five divisions, CHHD houses master’s programs in Public Health Nutrition, Maternal & Child Health, and Health & Social Behavior. Sub-specialty areas are also available for graduate students in Aging, Global Health, Public Health Nutrition, Multicultural Health, and Maternal & Child Health.

In the past year, a seventh “Interdisciplinary” division was formed and now houses the undergraduate degree program, the Doctor of Public Health, the On-Campus/Online MPH (OOMPH), the Interdisciplinary MPH, concurrent MPH programs, and the Joint Medical Program, as well as the Center for Public Health Practice.

Figure 1 below illustrates the variety of degree offerings at the School by division.
We are very well-integrated into the ecology of our extraordinary campus:

1. We offer multiple joint degrees with other units (City and Regional Planning, Journalism, Public Policy, Business, and Social Welfare);
2. We have many courses cross-listed with various departments (e.g., Nutritional Sciences & Toxicology, Civil Engineering, Sociology, and Chemistry);
3. We have developed innovative academic initiatives with other schools (e.g., Engineering); and
4. We have faculty with joint appointments in many departments across campus (e.g., Statistics; Neuroscience; Molecular and Cell Biology; Environmental
We also have very important relationships with UCSF, other campuses in the UC system, and community partners. For example, we house a joint medical school program with UCSF (the JMP), joint MD/MPH programs with UCSF and Stanford, a preventive medicine residency with UCSF, an occupational and environmental medicine residency with UCSF, and a preventive medicine/public health residency with the California Department of Public Health.

We enroll approximately 580 graduate students and 435 undergraduates across all the programs at any given time, and we employ 48.75 ladder-rank faculty FTE and 40.01 non-ladder rank faculty FTE. This makes us the smallest of the top ten schools of public health, and we are very proud that we “punch far above our weight.” As will be elaborated, we are the most difficult of the top ten schools to get into, a statistic that reassures us that we remain competitive, yet we regret not being able to educate a higher proportion of our exceptional applicants. Applicants who are accepted by Berkeley and another school more often choose to come to Berkeley over every school except Harvard. When we recruit new faculty members, we invariably receive applications from exceptional individuals. When our students graduate, they are recruited by the most desirable employers. Most decide to stay in California, which is a boon to the State. Most importantly, we believe that we make a real difference in people’s health – notably in California, but far from home as well.

Summary of the 2015-2020 Strategy

In 2013, Stefano Bertozzi began service as the School’s tenth dean. Strategic planning began in the spring of 2014, and the School solicited extensive input from stakeholders, including students, faculty, and staff of the School; members of the broader UC Berkeley campus; the School’s alumni; employers of the School’s students; funders; donors; and community partners.

The 2015-2020 Strategic Plan (see Appendix 1) elaborates the vision that animates the School. In light of today’s major challenges and opportunities, five overarching goals emerged as critical focus areas for the School over the next five years. We believe that by focusing our efforts on the following five goals, we will achieve maximal population health impact in California, nationally, and globally:

1. Strengthen community engagement to inform research, enhance students’ educational experience, and serve local, national, and global communities.
2. Foster a small number of collective research efforts that have the greatest population health impact.
3. Implement innovative approaches to education, both inside and outside the classroom, to ensure that students have the skills necessary to be leaders in a rapidly changing world.
4. Eliminate inequalities and build on our commitment to diversity as a pathway to excellence at all levels of the School.
5. Leverage technology as a means of accelerating impact, drawing on the many resources across the UC Berkeley campus and in the greater Bay Area.

The specific strategies the School will employ to achieve these goals are elaborated in the remainder of the document.

2015-16 Accreditation Report

In parallel to this Academic Program Review, the School of Public Health has been engaged in a self-study project for the purposes of renewing our accreditation with the Council on Education for Public Health (CEPH), an exercise undergone once every 7 years. In fall 2015, a site visit was conducted by CEPH to review the self-study document that had been submitted in August 2015 and assess the quality of the School.

This site visit concluded with an initial summary of the Site Visit Team’s findings, and the School has until May 3, 2016, to submit additional documents that might influence the ruling. This information will then be submitted to the Council for review during the annual meeting, which will happen from June 16-18, 2016. A final decision from the Council will be provided to the dean within 30 days of that June meeting.

A copy of the preliminary response to our self-study by the accreditation committee can be found in Appendix 3. Out of 26 criteria, it was determined that the School met (or met with commentary) 21. There were five criteria which were determined to be partially met. Overall, the findings from the review were very complimentary regarding the key components of the School (our faculty, procedures, infrastructure, research, community engagement, service, etc.). However, the Site Visit Team was less than flattering regarding our educational programs as represented by their competencies. They urged us to streamline our competencies and noted inconsistencies within and across programs. They were also unhappy with the degree to which our competencies map to courses and to other educational activities (e.g., internship, capstone, and thesis). Finally, they were unhappy with our explanations about how we evaluate whether our students actually acquire these competencies as they progress through the program. We have begun to address these issues, as will be explained in the document.

The School’s last formal review was completed in 2004. The following recommendations, divided into several categories, were made to the department as a culminating step in the review process. We identify these at the beginning of our report so that the reader may understand what we have done and what remains to be done to achieve these recommendations. The references in {braces} refer the reader to the section of this document that responds to the question or concern.

Overall Program:
1. Develop, in written form, a strategy to enhance the School’s collaborations, particularly with Letters & Science’s departments and with other bioscience departments on campus. {1.0 Education & 2.0 Research}

Faculty:
2. Design a faculty recruitment plan that articulates the rationale and strategy for growth over the next decade. {2.0 Research}
3. Write a faculty workload policy that creates workload equity. {1.0 Education}
4. Broadly define the scope of new endowed chairs to allow for reassignment, and base the endowment on a full funding scheme to provide for salary increases as faculty members advance through their careers. {Appendix 4}
5. Actively recruit women faculty into leadership roles in the department. {4.0 Diversity}

Undergraduate Program:
6. Balance faculty involvement in the undergraduate program. {1.0 Education}
7. Monitor demand for the undergraduate major, and track the placement of majors after graduation. {1.0 Education & 3.0 Community}

Graduate Program:
8. Monitor the impact of the Professional Degree Fee increase on student admissions and demographics, and construct a plan to address concerns if they arise. {5.0 Governance}

In addition to these action items, the Office of Planning and Analysis (OPA) also raised questions for further consideration in this self-study:

1. How does the School coordinate faculty activity across and within its large variety of degree programs and subdisciplines? How does it maintain a sense of cohesion and shared identity while maintaining broad and diverse programs? {2.0 Research}
2. How is the unit working to create cohesion and coherence in a curriculum that draws from many disciplines? How are the faculty assessing student learning
outcomes and using these to modify and enhance the curriculum over time? {1.0 Education}
3. What is the School doing to support diversity (in regards to hiring, outreach, recruitment, and support), how are those efforts working, and what challenges and opportunities does the unit see going forward? {4.0 Diversity}
4. What level of faculty oversight does the undergraduate program have? How is advising handled, and how does the program ensure adequate access to permanent faculty? What might the School do to improve the experience for undergraduates? {1.0 Education & 3.0 Community}
5. According to survey results, master’s students tend to be satisfied with the support provided by faculty and staff, but are less satisfied with the adequacy of facilities. Doctoral students are unsatisfied with the amount of financial support received and the level of faculty assistance with finding professional employment. What is being done about these issues? {1.0 Education}
6. What shifts are happening in the curricular demand for emerging areas and subfield specialties (e.g., the growth in course offerings and enrollments in the areas of Environmental Health Sciences and Health and Social Behavior)? {2.0 Research}

We have considered and responded to these issues in the remainder of the document, within the sections indicated in the {braces} above. A summary table of our responses to the previous academic program review findings and the OPA suggested topics can be found in Appendix 4.

Looking Forward

As the School aims to build upon its excellence in a broad array of innovative and highly ranked programs, we confront major challenges. Most importantly, massive budget cuts from the State have adversely affected the academic infrastructure of the University of California as a whole, the Berkeley campus, and our School in particular. The support that we receive from central campus has been declining in absolute terms as our costs escalate. Thus, we are constantly evaluating the sustainability of our current mode of operation.

In response to this challenging financial context, we have become more entrepreneurial in order to sustain our essential academic enterprise. This drive toward self-sufficiency has produced positive results in many arenas, and we have been able to create innovative collaborations and initiatives.

At the same time, however, we are being forced to ask hard questions about what programs to reduce, consolidate, or discontinue altogether if our efforts to generate
alternative sources of revenue and improve our operating efficiency cannot keep pace
with the budget cuts. Additional challenges include competition with schools of public
health much larger than our own (we are the smallest in the top ten), a faculty with a
bimodal age distribution (roughly 33% are over age 65), and the need to develop and
maintain diversity in faculty, students, and programmatic breadth.

Despite the financial challenges, we are committed to making strategic investments in
the future of our School, in the education of future public health leaders, and in the field
of public health. As this frank review will show, we believe that an honest assessment
combined with rigorous discussion is the best way forward. Although our ambitions are
tempered by the challenges we face, we remain engaged in and excited for the
possibilities for our School and the impact we can have on the public health threats of
today and tomorrow. Beyond financial resources, we have the tremendous resource of a
community dedicated to a healthy future for the School, for California, and for
communities around the globe.
## 1.0 EDUCATION

### Education Summary

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<td>- We have very popular and rapidly growing undergraduate and online programs.</td>
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<td>- Admissions data show that admission to our programs is highly competitive and that our programs are highly desirable.</td>
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<td>- Our programs are very highly ranked in national surveys.</td>
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<td>- Our faculty overall receives high course evaluations, although there have been persistent issues with breadth courses.</td>
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<td>- We provide a disproportionately large number of courses for the University.</td>
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<td>- The On-Campus/Online MPH (OOMPH) is spurring many conversations in the School about pedagogy, integrating technology into the classroom, and faculty effectiveness.</td>
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<td>- The Joint Medical Program (JMP) is a strong and innovative model for case-based learning.</td>
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<td>- According to survey data, master's and doctoral students are in general very satisfied with the quality of the education they receive.</td>
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<td>- The School has received many training grants that are long-standing and consistently renewed.</td>
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<td>- The Center for Health Leadership (CHL) builds on and expands coursework by providing opportunities for leadership development.</td>
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<td>- The size of our ladder-rank faculty is shrinking: 43% are over age 60, we project 15 retirements over the next 5 years, and the campus is asking us to reduce ladder-rank faculty by 20-25%.</td>
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<td>- We have one of the highest student/faculty ratios on campus.</td>
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<td>- We are still working to address the distribution of the undergraduate teaching workload.</td>
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<td>- Survey data show that undergraduates are unsatisfied with</td>
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many areas of their educational experience.

- Having an undergraduate major that is capped presents many difficulties for the School, particularly for its efforts to improve undergraduate diversity.
- Undergraduates have insufficient opportunities for research and practical experience.

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<td>• Under the auspices of the Interdisciplinary Division, the School is working on many curricular innovation initiatives: streamlining schoolwide competencies, conducting a comprehensive curricular review, and developing new assessment procedures.</td>
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<td>• A culminating public health experience (a capstone course or a senior thesis) will be required for all undergraduates starting in spring 2017.</td>
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<td>• The development of a new Center for Teaching Excellence will enable us to achieve higher quality instruction by training faculty, introducing pedagogical innovation, and ensuring a more holistic, better integrated curriculum.</td>
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<td>• The Fung Fellowship, a collaboration with Engineering, will give our undergraduates the opportunity to become entrepreneurs at the intersection of public health/wellness, technology, and design.</td>
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<td>• We are expanding our online offerings in Global Health, Epidemiology, and Health Policy &amp; Management.</td>
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<td>• We are establishing bilingual certificate programs in regulatory science and hospital management to build capacity in developing markets, starting in Mexico.</td>
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<td>• We are evaluating the possibility of consolidating or sunsetting educational programs in order to decrease expenditures and increase efficiency without compromising quality.</td>
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WHERE WE ARE NOW

The School’s educational mission is to provide a prominent education that challenges convention and develops diverse leaders who transform the health of our communities. Public health leaders need to be able to work across academia, communities, industry, and government to identify transdisciplinary solutions to local and global challenges. Building upon traditional ways public health leaders are educated, we strive to implement leading-edge, innovative approaches to education, both inside and outside the classroom; ensure that students have the skills necessary to be leaders in a rapidly changing world; educate at scale; advance competency-driven education; and create T-shaped leaders.

The concept of the T-shaped leader emerged from engineering disciplines where vertical depth in a given discipline was seen to lead to narrow vision when it was not complemented by a horizontal breadth of knowledge. This horizontality, as exemplified by leaders ranging from Thomas Edison to Steve Jobs, was prized as a core skill in employees who would be able to bring ideas and new relationships into their work from adjacent fields and interests. We aim to build cadres of leaders who combine deep expertise and knowledge with an ability to engage a broad array of stakeholders to creatively adapt the knowledge and skills they have gained to understand and solve complex public health challenges.

This is especially important given that the World Health Organization reports an estimated shortage of 7.2 million workers in the field of public health, with that number expected to grow to 12.5 million by 2035. It is estimated that California alone will account for nearly 250,000 of that scarcity. The educational efforts of the School are actively geared toward responding to this state, national, and global shortage of trained public health professionals.

Given the importance of our mission, it is unfortunate that the financial support we receive from the State through our central campus continues to decline. In a time when we should be expanding to meet the depth of need we face, the loss of State support is forcing us to generate our own funds just to break even and dramatically reduce expenses to balance the budget. Compounding the situation is the fact that the UC system will not allow us to increase tuition to replace the funds cut by the State. There are few easy expenses left to cut, and the School will have to start making more difficult decisions about academic and programmatic offerings if campus support declines any further.
**Student Data**

**Degrees Granted**
We begin with a snapshot of our School as a whole before exploring individual parts in more depth. In the spring 2015 cycle, we awarded 363 degrees, 188 of them graduate and 175 undergraduate.

The undergraduate program has grown dramatically over the past decade. The figure below shows that majors have increased rapidly since it was introduced in 2003-04. We have more than tripled our enrollment from a low of 143 in fall 2007 to an enrollment of 434 in spring 2015. The major is officially “capped,” and the unit controls admission to the major through GPA and other restrictions. In spring 2015, we turned away 40 students and accepted 65. We will discuss the impact of this cap later in this chapter. It is worth noting here, however, that the increase in Public Health majors accounts for a significant portion of the increase in majors in L&S-administered programs in the last decade. Additionally, we will use the Haas School of Business throughout this document as a foil to help highlight certain elements of our program. Their undergraduate major is twice our size, yet their number of majors have remained relatively stable over time. If our cap was removed, we could potentially grow to meet their size.

Figure 1: Undergraduate public health majors (2006-2015)

In 2014-15, the total number of 515 registered graduate students fell into the categories shown below.
Like the undergraduate program, the On-Campus/Online MPH degree program has grown very quickly and has become the source of a large percentage of our graduate students. The program began in the 2011-2012 school year. In spring 2015, OOMPH students earned 15% of all the advanced degrees awarded by the School. They represent 12% of the student body and 22% of our graduate students. As a result of its success, we are thinking broadly about the place of technology in our educational practice across all programs and examining our pedagogy accordingly. Furthermore, the online education program has the potential to move from being a financially self-sustaining program to one that generates revenue for the School, and we are currently seeking to expand our online offerings.

Finally, there were 63 registered graduate students in joint degree programs.
Figure 3: Registered graduate students in joint degree programs (2014-2015)

MJ=Master of Journalism, MD=Doctor of Medicine, MCP=Master of City Planning, MPP=Master of Public Policy, MSW=Master of Social Welfare, MBA=Master of Business Administration.

Admissions
The School receives an average of approximately 1,300 applications per year. We are a highly selective school, and we strive to accept only the best candidates. As one can see in this snapshot from 2015 ASPPH data (not including undergraduates or online students), we are the most selective of the top ten schools of public health in the country, whether one looks at the ratio of enrollees to applicants or the ratio of acceptances to applicants.

Figure 4: Selectivity of the top ten schools of public health

For the 2015-2016 academic year, we offered admission to 17% of applicants to academic degree programs (74 admissions from 422 applications) and to 35% of applicants to professional degree programs (335 admissions from 938 applications). Of those accepted, 70% of academic and 50% of professional program admits matriculated to Berkeley. In 2015, excluding OOMPH, the overall admissions rate was 30% (compared to a nationwide average of 48.5%), and the matriculation rate was 54% (compared to a nationwide average of 45%). The average GPA of accepted students has remained high over the years, most recently 3.65 across all programs in the School.

Figure 5: Admissions and matriculation rates (2008-2015), excluding OOMPH

In 2015, the OOMPH admissions rate was 48%, and the yield was 85%. We have gone from five applications for the summer 2012 session to 106 for the fall 2014 session. Furthermore, students in OOMPH hail from 15 countries, and the global stretch of the program grows every year. We accept a larger proportion of students for OOMPH, but that is because we pre-screen them and therefore receive a higher proportion of qualified applicants. The academic quality of the students admitted to OOMPH is comparable to our on-campus admitted students. The on-campus GPA scores are slightly higher (3.68 vs. 3.51), but internal grade analyses have shown that student performance and mastery of learning outcomes is indistinguishable in courses for which the in-person and online instructors are the same and roughly comparable in courses with different instructors. The feedback we receive from students on the quality of their educational experience is equal or better to that received from our on-campus students, but it is important to keep in mind that the populations are very different and one would expect differences in their feedback even if they were in the same program.
Figure 6: Admissions and matriculations rates, OOMPH (2012-2014)

In Appendix 5, you will find these numbers explored further with a presentation of acceptance and matriculation rates by program.

Graduation Rates
We are committed to mentoring all of our students and giving them the support they need to complete their programs and graduate. The table below shows the graduation rates for our most recent cohort of students. It is organized by degree conferred, not by discipline.

<table>
<thead>
<tr>
<th>Degree</th>
<th>MTTG</th>
<th>Number starting</th>
<th>Number withdrawn</th>
<th>Number graduating</th>
<th>Number continuing</th>
<th>Graduation rate (# graduated/# starting)</th>
</tr>
</thead>
<tbody>
<tr>
<td>MPH (2013)</td>
<td>2</td>
<td>165</td>
<td>0</td>
<td>146</td>
<td>19</td>
<td>88%</td>
</tr>
<tr>
<td>DrPH (2011)</td>
<td>4</td>
<td>12</td>
<td>1</td>
<td>10</td>
<td>1</td>
<td>83%</td>
</tr>
<tr>
<td>PhD (2009)</td>
<td>6</td>
<td>32</td>
<td>2</td>
<td>27</td>
<td>2</td>
<td>84%</td>
</tr>
</tbody>
</table>
Maximum time to graduation (MTTG): the number of years the program allows students to complete a given degree. This is defined by the program. Number starting: the number of students entering a given degree/concentration n years before 2014-2015, where $n$ is the maximum time to graduation. Number withdrawn: the number of students from this cohort who, through official notice or failure to enroll, resigned from the program before completing the degree. Number graduating: the number of students from the entering cohort who successfully completed the requirements for graduation within or before the maximum time to graduation. Number continuing: the number of students from this cohort who have passed the maximum time to graduation but are actively continuing to pursue the degree through some type of exception or waiver.

### Quality and Ranking of our Programs

One of our top priorities is improving the quality of the programs we offer even as the School continues to face financial headwinds. Our undergraduate program was recently ranked #1 nationally by *USA Today*. We know of no other ranking of undergraduate public health programs. However, we also know that the quality of the undergraduate program is not yet at the level to which we aspire, as we will discuss below in a more detailed look at that program.

Of the four PhD granting disciplines evaluated in the most recent 2010 National Research Council report (which is based on 2005-6 data), our School tied for first with Harvard in Epidemiology and was ranked second in Health Services and Policy Analysis (which has since been renamed Health Policy), fourth in Environmental Health Sciences, and twelfth in Biostatistics.

In 2015, the *U.S. News and World Report* on best graduate schools of public health ranked Berkeley number nine (3.9 out of 5 points overall). This ranking was based on surveys completed by deans, other administrators, and/or faculty at peer institutions. The eight schools ranked above Berkeley, in order from the highest ranked, were Johns Hopkins, Harvard, University of North Carolina-Chapel Hill, University of Michigan, Columbia, University of Washington, Emory, and University of Minnesota. Worth noting in the figure below is that all of the schools that outrank us are substantially larger (by up to fifteen-fold) in terms of faculty FTE. The ASPPH Data Center provides

<table>
<thead>
<tr>
<th>Program</th>
<th>Number Starting</th>
<th>Number Withdrawn</th>
<th>Number Graduating</th>
<th>Number Continuing</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>MS (2013)</td>
<td>2</td>
<td>0</td>
<td>5</td>
<td>0</td>
<td>100%</td>
</tr>
<tr>
<td>MA (2013)</td>
<td>2</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>75%</td>
</tr>
<tr>
<td>BA (2013)</td>
<td>2</td>
<td>2</td>
<td>157</td>
<td>140</td>
<td>89%</td>
</tr>
</tbody>
</table>
the following information on faculty FTEs over time. (N.B. the vertical axis is a log scale.)

Figure 7: Faculty FTEs over time for the top ten schools of public health

![Faculty FTEs over time for the top ten schools of public health](https://data.aspph.org/)

**Source:** ASPPH Data Center, [https://data.aspph.org/](https://data.aspph.org/), January 2016

Additional data from the *Schools of Public Health Application System (SOPHAS)* and the *Association of Schools and Programs of Public Health (ASPPH)* show the schools of public health at which students matriculate, including Berkeley and its competitors. These data help tell a richer story about the strength of our programs. In fall 2014, 85 applicants who were accepted at Berkeley chose to go to another school of public health. Thirty-five percent of them went to Harvard; 19% to Columbia; 15% to Yale; and another 23% to UCLA, Emory, Michigan and George Washington combined. In contrast, 226 applicants turned down other schools of public health to attend Berkeley – more than 2.5 times the number who declined Berkeley’s offer.

The following graph shows how Berkeley compares to the other top ten schools of public health by looking at students who apply to both Berkeley and competitor schools. It shows four data points aggregated over the past four years: how many students were...
accepted only by the competitor school and matriculated there; how many students were accepted by both of us and matriculated at the competitor school; how many students were accepted by both of us and matriculated at Berkeley; and how many students were only accepted by us and matriculated at Berkeley.

Figure 8: Berkeley vs. other top ten schools of public health, 2011-2014

When one looks at the extremes of this graph, the number of students accepted by us and rejected by a competitor school and the number of students accepted by a competitor school and rejected by us, one can see again that we are the most selective institution. It is harder to be admitted to Berkeley than it is to any of the other schools. Looking closer at the data of students who have a choice of institution to attend (the two data bars in the middle), students are more likely to choose Berkeley when they have a choice of any other institution in the country except for Harvard. (We do not have the Johns Hopkins or University of Washington data from SOPHAS, so we do not know whether we outcompete them as well.)

We were surprised that the data on selectivity and the data on which schools were chosen by students accepted by both schools were not consistent with the *U.S. News and World Report* rankings, especially because we have seen higher correlations for
other professional schools. Students are clearly perceiving that the quality of the education at UC Berkeley is higher than the U.S. News rankings would suggest.

**Overview of the Faculty**

The senate FTE count for academic year 2015-16 is 53.75. Of those, 48.75 are ladder-rank faculty funded by the State.\(^1\)

Figure 9: Faculty FTE by division, excluding lecturers (AY 2015-16)

Note: CHHD houses programs in Public Health Nutrition, Maternal & Child Health, and Health & Social Behavior. Faculty from all divisions participate in the Interdisciplinary Division, which is not represented in this graph.

Our faculty contributes to many programs across the campus and the University. Twenty-two members of the faculty have joint appointments with the following units: City and Regional Planning; Statistics; Environmental Science, Policy, and

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\(^1\) Here, we must define the terms used to describe the faculty. Ladder-rank faculty are faculty holding tenured titles or non-tenured titles in a series in which tenure may be conferred, and they are hard-money positions with no expectation that faculty will raise funds for their nine-month salary. If they wish to be funded for the summer, they must raise those funds. Academic Senate faculty include ladder-rank faculty, professors in residence, and clinical (X) professors (the clinical version of an in-residence professor). Lecturers are academic experts without tenure who are hired to teach on a full- or part-time basis, but who are not paid to conduct research. Adjunct professors are individuals supported primarily by non-State funds who (1) are predominantly engaged in research and who participate in teaching or (2) are professional practitioners of appropriate distinction who contribute primarily to teaching and have a limited responsibility for research. Unlike most universities, there is no expectation that an adjunct professor be a part-time employee. Thus, adjunct faculty include faculty who might have full-time research professor, teaching professor, or professor of practice titles in other universities.
Management; Molecular and Cell Biology; the Goldman School of Public Policy; the Haas School of Business; the Helen Wills Neuroscience Institute; the Lawrence Berkeley National Laboratory; the Energy Resource Group; the UCLA School of Public Health; and the UCSF School of Medicine.

Decline in Faculty Numbers
The ladder-rank faculty distribution is heavily skewed to senior faculty: the majority are full professors (37), followed by associate professors (13) and assistant professors (3). At present, 23 ladder-rank faculty (43%) are 60 and over, and 17 (32%) are 65 and above. For comparison, the School of Optometry has approximately 22% of faculty over the age of 65, the Business School has 7%, and campus has 14%. We project 15 retirements in the next five years, four of whom have already signaled their intention to retire at the end of this academic year.

Figure 10: Ladder-rank faculty by age and type

The graph below shows that the total faculty FTE has been steadily declining from a high of 90.0 in 2009. This trend is anticipated to continue and even accelerate for the next five years given the age distribution of the faculty. The campus has signaled that
we should anticipate a reduction of ladder-rank faculty by 20-25% in light of the campus’ desire to shift ladder-rank FTEs out of the professional schools.

Figure 11: Total faculty FTE by year

We have been able to maintain an approximately constant total faculty size over the past seven years by hiring additional non-ladder-rank full-time professors and part-time lecturers. However, the large anticipated cuts to our operating budget from campus, coupled with a cap on our professional degree fees and reductions to campus-funded Temporary Academic Support, imply that we will not be able to maintain faculty size unless we are able to substantially increase the income from our self-supporting (online) degree programs or from philanthropy. Another alternative would be to significantly reduce financial aid to our students. Finally, we could adapt to a smaller faculty by reducing the number and/or size of our educational programs.

An additional pressure point for our faculty is the new accreditation requirement that all public health undergraduates have a culminating project. This will significantly increase demand on faculty because approximately 200 students a year will need to be supervised either for an honors thesis or a capstone course. This supervision falls disproportionately on ladder-rank faculty because soft-money faculty do not have any
teaching time covered outside of classroom instruction unless a research project can include a student worker/mentee.

**Student/Faculty Ratio**

Our student/faculty ratio is already significantly higher than that of other top ten schools of public health, as illustrated below, and it has been rising since 2012. This trajectory is not compatible with maintaining or improving the quality of the educational experience while simultaneously maintaining the School’s research and service productivity. Unless we are able to change the trajectory, we will need to consider sunsetting educational programs, as we will discuss further in the final section of this chapter.

**Figure 12: Students/faculty FTE ratio for the top ten schools of public health over time**

![Chart showing students/faculty FTE ratio for the top ten schools of public health over time.](http://data.aspph.org/)


The chart below shows the degree recipient/faculty FTE ratio across Berkeley’s different departments, schools, and colleges. The School of Public Health is somewhere between
fourth and fourteenth depending on how one weights a graduate student relative to an undergraduate student.

Figure 13: Degree recipients per faculty FTE

Source: UC Berkeley data on 2015 Faculty FTE. The range reflects a relative weighting of a graduate student to an undergraduate of 1:1 to 4:1. The Y axis thus represents “undergraduate degree recipient equivalents” with the lower-bound reflecting an equal weighting of graduate and undergraduate students.

Teaching Data

Workload
The 2004 Academic Program Review recommended that we write a faculty workload policy that creates workload equity. This was completed in 2007, when the School wrote a policy stating that the basic faculty teaching obligation is three courses per academic year (regularly scheduled, semester-length, primary courses, i.e. exclusive of independent study). With the approval of the division head and dean of the School, release time is granted for the following reasons: sabbatical leave or other leaves of
absence; career development awards; new junior faculty appointments (for the first two years); faculty administrative duties (the dean, associate and assistant deans, and division heads may be released from one to three courses); and childrearing responsibilities. Over the past year and continuing to the present, the Faculty Council has been reexamining faculty contributions to teaching and service with the dual goals of having a more holistic view of faculty contributions to the School and having a more refined metric of expected contribution to the School (than the current three-course rule). This work is ongoing, but already we are more systematically collecting data on teaching load and evaluations by student credit hour, co-teaching, student mentoring, committee service, participation in faculty meetings, leadership of training programs, writing and obtaining training grants, and graduate student financial support.

As an example, the graph below provides a snapshot of the total credit hours taught by faculty plotted against the weighted average of their course evaluations. Even though a faculty workload policy is in place to help us establish workload equity, there is still a wide distribution in the amount of teaching the faculty provides. We are still working to address this issue.

Figure 14: Weighted avg. course evaluation vs. total credit hours, ladder-rank faculty (2014-15)

[Graph image]

Note: This graph excludes OOMPH and JMP.

Here is an overview of Senate faculty involvement in undergraduate courses. 54% of undergraduate courses have a Senate instructor. 29% of Senate faculty members are teaching an undergraduate course. 9.8% of Senate faculty are teaching one of the five core undergraduate courses for the public health major. Had the faculty grown as expected with the influx of undergraduate majors, these percentages would certainly be
higher. The School, however, never received any incremental faculty FTEs to support growth in the undergraduate program.

Figure 15: Senate involvement in undergraduate courses (2014-15)

Course Evaluations
Most professors receive very high marks in course evaluations. Typically 85-90% of faculty receive a 6 or higher on a scale of 1-7. This shows how much the faculty value pedagogy and instruction. The graphs below show the average course evaluation weighted by student credit hours and by division.

Figure 16: Average course evaluation weighted by student credit hours, ladder-rank faculty

Note: This graph excludes OOMPH and JMP.
However, a number of the School’s required MPH breadth courses (2-4 units) have received less favorable reviews from students as evidenced in course evaluations and exit surveys. Addressing this has been an ongoing priority for the Educational Policy and Curriculum Committee (EPCC) as well as for the instructors of the courses, our Strategic Planning Taskforce, and students. In the last two years, we reviewed course syllabi, evaluations, and exit surveys for courses taught in 2011-2015 and consulted with the instructors to reflect on lessons learned and brainstorm new innovative approaches. Members of the EPCC also researched what our peer institutions are doing with breadth requirements and are considering the following recommendations: using a case-based format to better integrate across the existing courses, moving to semester-long courses instead of our current 7-week modular format, and revamping all of the courses so they become part of a more connected and coherent thematic series (as Columbia did in their curriculum reform). We have observed some success with making the courses more engaging, relevant, and pedagogically diverse, but more work can and will be done to improve their quality.

Campus Service
Public Health courses serve a broad spectrum of students across the University. Sixty-one percent of the enrollment in our courses is comprised of non-Public Health majors and graduate students. The only unit with a higher percentage is the Goldman School of Public Policy. The graph below shows the balance of courses students take from other schools and colleges as compared to the courses that the unit offers to students from other schools and colleges. These data are striking, especially given how high our student/faculty ratios are and how quickly our faculty is shrinking.
The Undergraduate Experience Survey

Although *USA Today* ranks us as the top undergraduate public health major in the country, our internal student survey data clearly indicate significant room for improvement. The University of California Undergraduate Experience Survey (UCUES) results for 2012 and 2014 are provided below and provide some insight into the student experience. The survey response rate for Public Health was 51% and 43%, respectively, as compared to 39% and 36% for the campus. The data compare our School’s undergraduates with their divisional peers in the College of Letters & Science and undergraduates on the campus as a whole. Graphs of the survey results can be found in Appendix 6.

Public Health survey respondents were more satisfied with their “overall social experience” than their peers. However, they were less satisfied than their peers in the
following categories: “their UC grade point average,” “value of their education given what was paid,” “overall academic experience,” “feeling of belonging on campus,” and “likelihood of re-enrolling at UCB.” Yet even in those categories, there have been improvements since 2012 in the perceived “value of education” (13%), “overall academic experience” (4%), and “likelihood of re-enrolling” (5%). To address these issues, the Center for Public Health Practice is now beginning to provide access to the public health career exposure and professional development courses and events that had previously only been available to graduate students. In addition, the Bay Area Health Career Opportunity Program (BAHCOP) was implemented in 2012 through a federal grant in partnership with the Stanford School of Medicine and San Francisco State University. The Program provides undergraduate students from disadvantaged backgrounds with seminars, conferences, networking events, and advising to enhance their motivation to pursue public health and medical careers and gain entry into graduate programs. Numerous Berkeley undergraduate public health students who participated in BAHCOP have gotten jobs, internships, and gained entry into graduate school, which helps enhance their experience and belonging. The School of Public Health provided funding and secured external philanthropic support to sustain the program when funding was cut in 2014. In the “Where We Are Going” section of this chapter, we will explain how we are improving our program by adding a culminating public health experience (which gives students the option of taking a capstone course or writing a thesis) and the Fung Fellowship (which provides hands-on experience with public health innovation). Issues of belonging on campus are being addressed in our work on school climate, which will be discussed in the chapter on Diversity.

Public Health respondents were also less satisfied than peers with “access to small classes,” “access to faculty outside of class,” “opportunities for research,” “the quality of the major’s courses,” and their “ability to get their desired major.” They were similar to their peers in their level of satisfaction with the “quality of the major’s upper division courses.” While still low, there has been an increase in following categories: “access to small classes” (9%), the “quality of the major’s lower division courses” (15%), and the “ability to get into desired major” (11%). To address these issues, the honors program has been refined and expanded with the addition of an undergraduate honors seminar.
and the recruitment of additional faculty to serve as mentors on individual projects. The seminar allows up to 30 students to complete high quality honors projects, enhance their research and writing skills, and benefit from high quality faculty advising. Smaller courses have been added in areas of high demand, such as health policy and global health. The core course in biostatistics has been expanded to include instruction in the critical use of statistical software packages, which has given students more research tools.

The UCUES survey also asked students to self-assess their skill development in a number of key skill areas, including “analytical & critical thinking skills,” “writing skills,” “quantitative skills,” “understanding a specific field,” and “leadership skills.” Public Health respondents were slightly less confident in their skills at entry in the areas of analytical and critical thinking skills and writing skills, although they made progress similar to peers in these areas. In 2014, Public Health majors were much less confident in their “quantitative skills” than their peers but rose close to parity with them. Public Health majors made more progress than peers in the area of “understanding a specific field” and “leadership skills.” This is one of the major strengths of our program, and we strive to train students who will be leaders in applying their understanding of public health to craft powerful public health interventions.

These results should be analyzed within the context of the major’s dramatic growth, which has not been accompanied by a corresponding increase in resources. It is also important to consider that the major does not have dedicated faculty FTE, has until recently had only one academic advisor and no other program staff, and does not have an established base of donors or external funding.

The School’s faculty have taken on significantly increased workloads to accommodate the 440 undergraduate majors and offer a quality public health educational experience, as enrollments have grown and all courses have long waiting lists. Even at our current level, we still turn away over 80 applicants per year. Almost all of the applicants who are denied admission meet the prerequisite requirements and are well qualified for the major. By accepting more undergraduates, we would be able to educate more students currently underrepresented in the health professions and from low-income backgrounds.

Sixty percent of the enrollments in public health courses comes from non-public health majors, and their demand for our courses is also rising. While faculty enjoy teaching these students and believe that everyone benefits if students from all backgrounds have knowledge of public health, accommodating these students in addition to the majors results in public health majors getting their core content in large courses, which may
contribute to lower satisfaction. It also places more burden on faculty and makes it more difficult for them to be accessible to students.

A strong core of senate and non-senate faculty who are dedicated to the major and to the students have assumed the additional academic and administrative burden. However, undergraduates still lack sufficient opportunities for research and practical experience even though several choose to write honors theses and secure relevant internships. We have come to a crossroads. On one hand, there is faculty pressure to carefully assess our ability to sustain the major at current levels and to consider scaling back the size of and support for the major. On the other, we are implementing major initiatives that will accelerate improvements to the quality of the major and the student experience. If we continue to offer the major, we want to do so in a way that can maximize our ability to accept underrepresented and first-generation students, but that requires being able to grow the major to meet demand.

**On-Campus MPH Programs**

The Graduate Division administers the Master’s Program Review Survey (MPRS) to collect information on student experiences in graduate programs at Berkeley. Students are asked to rate the quality of their satisfaction with issues such as program climate, instruction, and advising. The survey is administered to all graduate students in programs that will be reviewed in the upcoming academic year. Additionally, doctoral students in their third year and master’s students in their second year receive this survey. In the data below, we compare the aggregate scores of our master’s students in the 2009-2012 range with those in the 2013-2015 range, with those of master’s students across campus, and with those of master’s students in the professional schools. Graphs of the survey results can be found in Appendix 7.

Our MPH respondents gave the School excellent scores (almost perfect in some cases) in a range of categories: “quality of graduate level teaching by faculty,” “training in research methods,” “helpfulness of staff members,” “overall satisfaction,” “program’s ability to keep pace with recent developments in the field,” and “the intellectual caliber of the faculty.” Our scores were above campus averages here and for the following categories which have also been increasing in quality over time: “amount of financial support,” “faculty helping find employment,” “quality of academic advising,” “professional relationship with faculty advisor,” and “opportunity to interact across disciplines.” However, our MPH respondents – and other graduate students as we will see below – were less satisfied than peers with the “adequacy of facilities.” The School has not had a physical home on campus since 2008, and it maintains faculty, student, and staff space in seven different buildings on-campus and eight different locations in
the Berkeley area. The Facilities section of the last chapter will describe the new building that we will be moving into next year in order to ameliorate this problem.

On survey items related to instructional quality, MPH respondents gave the School scores that exceeded campus and professional school averages in the following categories: “useful guidance from faculty in deciding course list,” “excellent quality of course instruction,” “core courses that met expectations for academic preparation,” “challenging course content,” “having the opportunity to take outside courses,” “enrolling in core courses without difficulty,” and “useful electives.” However, we will need to work on crafting a first-year review that is more effective in helping students assess their progress.

On items related to program environment, MPH respondents agreed more strongly than their peers that “faculty in my program value diversity,” “students in my program value diversity,” and “faculty in my program are open to ideas from other colleagues in other programs on campus.” MPH students appear to want more social opportunities than we currently offer, as we were ranked lower than average for “students and faculty meet informally for scholarly discussions,” “students and faculty frequently attend formal colloquia and seminars,” and “students and faculty work together to coordinate social events.” We plan to work with the student government to assess what can be done to address this issue. We are pleased to note that our scores for “tensions among faculty that affect students” have been decreasing and are lower than the campus and professional school averages.

In terms of their general assessment of the program, the majority of MPH respondents “would select the same field of study,” “would select the same university,” and “would recommend their program to someone considering their graduate program.” We are on par with campus averages when considering “quality of student life experience” and “quality of overall experience with the graduate program.” We do have some work to do in order to increase “the quality of the experience with the organization of the graduate program.” Our initiative to create a more competency-driven education, described in the “Where We Are Going” section of this chapter, will squarely address this problem and, hopefully, improve it dramatically.

**Master’s Programs: Spotlight on OOMPH**

The School’s On-Campus/Online MPH (OOMPH) program is the first online degree program on the Berkeley campus. It is a self-supporting degree program that receives no campus subsidy. It has grown steadily since opening and currently serves approximately 200 students annually. The School’s ambition is to dramatically grow OOMPH (and similar programs that are self-supporting) to generate revenue for the
School that can offset State budget cuts. We also want to use our online platforms to increase access to high-quality public health education in California and globally, especially given the worldwide shortage of workers in public health.

We envisage a future in which the boundaries between online and in-person education blur and where the same tools are used in both. For example, we are in the early stages of exploring the use of educational technology tools, such as flipped classrooms, for all of our students. Furthermore, we want to develop more courses related to technology-focused public health interventions, which can lead to collaborations with key partners on and off campus, both within California and around the world.

OOMPH offers the same quality and rigor as the School’s on-campus MPH programs. Students earn their degrees over 7 semesters (2.5 years), taking 14 courses and earning 42 semester units. The program includes two mandatory 8-day on-campus experiences. Starting in summer 2015, students in the OOMPH program are required to complete a field practicum comprising a minimum of 130 hours of field placement activity. Faculty members participating in the program are encouraged to attend Teaching with Technology Workshops, which offer the opportunity to revisit and refine course-level goals, outcomes, and assessment. The workshops explore ways in which each course contributes to the overall student learning expectation and provides assessment tools and information for enhancing student learning and teaching. Tuition for the OOMPH program is comparable to that for the on-campus program; however, we have not to date been able to offer any financial aid to OOMPH students. Despite that, the diversity of the OOMPH is comparable to that of the on-campus program. This is likely due to the fact that OOMPH students are able to continue to work during the program.

**MA/MS Programs: Spotlight on JMP**

We offer an MS in Epidemiology, an MS in Environmental Health Sciences, and an MA in Biostatistics. As these programs have small enrollments that make it difficult to draw nuanced conclusions from survey data, we will briefly highlight here our Joint Medical Program. The UC Berkeley-UCSF Joint Medical Program (JMP) is an innovative, five-year program run by the UC Berkeley School of Public Health and the UCSF School of Medicine. While most schools of public health are embedded within a medical school, this medical program is the only one of its kind that is embedded in a school of public health. Students receive their pre-clerkship medical training and MS in Health and Medical Sciences at Berkeley and a MD from UCSF. The JMP is the country’s only medical education program that uses a fully problem-based and student-centered active

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2 “Flipped classrooms” is a term given to an instructional strategy and type of blended learning that reverses the traditional educational arrangement by delivering instructional content, often online, before class time, which can then be used for a variety of projects.
learning approach to foundational medical science. It provides patient-centered, community-based clinical skills training, and it is one of only a few programs that provide graduate research training concurrently with foundational science and clinical skills training. The program aims to shape physicians who are rigorously trained in basic and clinical sciences while encouraged to think outside the biomedical box to understand and address the behavioral, cultural, social, and policy context of the health of individuals and populations. The program accepts 16 students a year.

The JMP is an example of our attempt to implement leading-edge and hands-on approaches to education. We are currently using it as a model in order to think about reforming our public health curricula, an effort which we will describe later in this chapter. In the next few years, we will begin to prototype and test more courses that use case-based, challenge-focused curricula to promote critical thinking and problem-solving skills based on problems that need to be solved.

While the JMP is a very innovative program whose content and methods of instruction deeply resonate with its students, survey data suggest that it may have been negatively impacted by financial and structural challenges. (See Appendix 8.) A major caveat to the survey data is that the sample size is exceedingly small (n=12 or 23% of the total of 53 students surveyed). Thus, the results may not represent the sentiments of the majority of the JMP students. [See footnote for more detail.3]

3 The MS degree that the JMP students receive upon their graduation from UC Berkeley is conferred by a Health and Medical Sciences MS Graduate Group, which is directly under the auspices of the Graduate Division. As such, the JMP master’s program is periodically reviewed by the Graduate Division independently of the School. The last review occurred in 2010 and gathered data in multiple ways, including course evaluations, teaching evaluations, residency placements, publication and grant application records for students, a formal focus group with student representatives from multiple classes, and above all, a student survey with a much higher response rate (approximately 90%). The findings of the 2010 review, included in Appendix 10, recommended that the JMP receive additional support for teaching, be allotted additional space, and be turned to as a model for the campus. Despite the small and potentially non-representative sample of the most recent survey, the JMP continues to receive strong scores in the following areas: “professional relationship with faculty advisor,” “quality of graduate level teaching by faculty,” “helpfulness of staff,” “overall satisfaction,” and “the intellectual caliber of the faculty.” “The opportunity to interact across disciplines,” “quality of academic advising and guidance,” and “program’s ability to keep pace with recent developments in the field” have declined, but those scores remain on par or higher than campus. JMP students are dissatisfied with the level of financial support they receive. This is understandable given the relatively low level of support we provide compared to medical schools and the additional year of tuition incurred by our students. The sampled 2013-2015 students appear to have a decrease in their satisfaction with their training in research methods compared to the 2009-2012 students. Given that the internal JMP training has not substantially changed during this period and the JMP faculty responsible for this training routinely receive high teaching evaluations, we speculate that the students might be unhappy with the courses they take outside of the JMP, but we will certainly investigate this further. The data show that the overall level of the JMP’s instructional quality is strong. Students seem to be satisfied with the “useful guidance from faculty,” “quality of course
Though data are sparse, there are overall declines in the JMP students’ general assessment of the program. This assessment cannot be divorced from the fact that the JMP is more expensive than other medical schools because of the fifth year. Many students may be asking themselves whether it was worth the extra money and time given their high debt burden (≥$180,000). Furthermore, it is not surprising that they are concerned by organizational disruptions to the program, as there has been turnover in the Director position without a clear resolution to a national search in which they participated, staff reductions, and decreased faculty support. They are well aware that the program on the Berkeley campus is underfunded per student as compared to other MD programs in the UC system.

To address the student concerns, the acting program director has restructured what had been a single committee that handled both curricular and student well-being issues, the Curriculum and Well-Being Committee (CWBC), into two separate committees – a Curriculum Committee and a Well-Being Committee – so that each might better focus on issues specific to its charge.\(^4\)

Not captured by the most recent survey data are two illustrative facts about JMP students. They are now more involved in governance of the program than in the past, and record numbers of our students are returning to teach in the program in their 5\(^{th}\) year, suggesting a high level of commitment to the program’s continued success. On the financial front, the program has implemented a radically new development strategy which yielded the highest level of support among alumni in the 2014 “Big Give” [development day] and a vastly higher level of support this academic year, with the program having already raised $180,000 out of a goal of $200,000. We have also cultivated our relationship with the Alameda Contra Costa County Medical Association to fund two summer fellowships per year to support student research.
The Doctoral Exit Survey

This section will provide a brief overview of Doctoral Exit Survey (DES) results for our doctoral programs: the DrPH and the PhDs in Infectious Diseases & Immunity, Epidemiology, Environmental Health Sciences, Biostatistics, and Health Policy. Three periods will be represented – students from 2000-2005, from 2005-2010, and from 2010-2015 – in order to show development over time. All of the students are compared to doctoral students across campus as a whole. DrPH students are then compared with doctoral students in other professional schools. The PhD students are compared to other doctoral students in the Biological Sciences. While the DrPH is a program of the School, the PhD programs are not, but rather programs of campus-wide graduate groups chaired and supported by the School, and they are the subject of separate program reviews. Graphs of the doctoral survey data can be found in Appendix 9, and the review reports for all of the graduate groups (including JMP) are attached as Appendix 10.

DrPH
The DrPH survey results suggest that the program is broadly comparable to other doctoral programs at Berkeley. We have slipped in “quality of graduate level teaching” since the previous survey. However, the group is fairly small, and that same category had the largest increase last time. Nevertheless, it is an area that we need to reinforce. This year, we changed the faculty for the doctoral seminar series in response to student concerns. The fact that they are less likely to receive financial help from their dissertation chairs is understandable as most other doctoral programs at Berkeley are academic rather than professional. Still, we should try harder there as well. Finally, students do not have as many opportunities to present their work as other students do. These students are in a unique position: they are professional doctoral students in a school where most of the doctoral students are academic and have disciplinary homes. The other professional schools only offer professional doctorates and thus do not have the problem of providing equal support to professional and academic doctoral students. We need to do a better job of helping our DrPH students find dual homes: one with their DrPH cohort and the other with their closest disciplinary peers so that they have additional fora for presenting their work.

Infectious Diseases & Immunity
The survey responses from the IDI students paint a picture of students very happy with the quality of the teaching and their relationship with their supervisor and, in contrast to the DrPH, with the opportunities to present their work. However, there is clearly room for improvement in departmental advising and in the support that they receive from their dissertation chair, principally with respect to availability to provide advice on academic matters and for informal consultation.
Epidemiology, Biostatistics, and Environmental Health Sciences
In almost all cases, PhD survey respondents’ scores in these three programs matched or surpassed campus averages. There is little to be critical of in these data, and they paint a picture of very satisfied students. Berkeley doctoral students are generally not very happy with the help they get to find a job after graduation, and these students are no different.

Health Policy
The PhD program in Health Policy also scores well in comparison to the rest of the campus. Their only problem is that it has been difficult to match the almost perfect scores from the 2001-2005 generations. As with IDI, there is room for improvement in departmental advising. One caveat: it is difficult to compare different programs with respect to delivery of papers at national meetings. Health Policy does especially well, but it has many health economists who typically present a paper prior to publishing, while the more biomedical specialities typically present at conferences but do not present a paper before publishing.

Training Grants
The School has a strong tradition of receiving training grants to support and train the next generation of scholars.

The School currently holds federal training grants in the following selected areas:

1. Alcohol Research
2. HIV/AIDS Training
3. Public Health Nutrition
4. Occupational and Environmental Health
5. Maternal and Child Health
6. Health Services Research
7. Breast Cancer Disparities

The training grants provide a valuable resource to students through direct financial aid paid through fee remission and salary and fellowship.

Overall student support has been stable. Unfortunately, NIH/Fogarty has decided to significantly scale back its HIV/AIDS Training Programs, and we will receive many fewer students from Africa supported by this program in future years.
With shrinking support from campus, we will redouble our efforts to secure more training grants. We need to provide more positive incentives to faculty who take the initiative to apply for these grants.

**Center for Health Leadership**

Founded in 2008, the Center for Health Leadership (CHL) is designed to enhance the School’s curricular, co-curricular, and experiential offerings to inspire and prepare graduate students to be effective health leaders and professionals. Through CHL, students can attend leadership-related classes and workshops, join an 18-month leadership fellows program, join the CHL Association or Student Board, and attend CHL’s annual leadership conference. All these activities are based on the core guiding principle of action-based learning, a commitment to the value of diversity, and the beliefs that everyone can be a leader and that we can lead from wherever we are. The CHL also develops practical leadership programs, resources, and conferences for alumni and health professionals.

This Center is a strong component of our educating T-shaped leaders who have both traditional, deep vertical training and experiences within a discipline and broader contextual and system-based educational opportunities, trainings, and experiences. The work of the Center is explicitly geared toward preparing students to be transformational global health leaders in all sectors, including research, academic, government, and nonprofit and for-profit organizations.
WHERE WE ARE GOING

Curricular Innovation

The new Interdisciplinary Division was launched in fall of 2015. In addition to serving as a home for many programs (undergraduate program, the Interdisciplinary MPH, the Joint Medical Program, OOMPH, dual degree programs, and the DrPH), it is also our hub for fostering curricular innovation within the School. Its charge is to help create greater opportunities for professional skill-building across all academic programs.

Curricular Review
This division is leading a comprehensive curricular review, which will include better integration of diversity and equity as well as cultural and structural competencies into the curriculum. The latter two have recently been added to our required competencies. Improving the quality and integration of our MPH breadth courses is the highest priority in this effort because they tend to be less well reviewed and they are the courses taken by the largest number of graduate students.

Competencies
Since we received the initial CEPH accreditation report in October, we have been moving quickly to address the deficiencies of our School’s stated competencies. Revising and updating our competencies is the first step in moving toward education that is explicitly competency-driven. We want to ensure that we can communicate effectively with students about the program they are considering or entering, and we cannot do that if we do not have well-defined, well-articulated program goals – and what better way to do that then to define the competencies that students will acquire. Furthermore, revising our competencies will help us communicate with each other and facilitate the articulation of different courses across the curricula in the School so that students neither miss some core competencies nor have unnecessary duplication of others.

Through a series of meetings with faculty representing every program in the School, we have adopted a new list of general MPH competencies that we expect all students graduating with an MPH from our School will master. This set of competencies guides our breadth course content and serves as the full set of competencies for our Interdisciplinary MPH and OOMPH students. For students who enroll in a specialty MPH, each program (Epidemiology, Epidemiology/Biostatistics, Biostatistics, Environmental Health Sciences, Health & Social Behavior, Health Policy & Management, Infectious Diseases & Vaccinology, Maternal & Child Health, and Nutrition) has an additional set of program-specific competencies that build on the
general competencies. The undergraduate program competencies are still being finalized but will be similar to the general MPH competencies, with lower levels of mastery expected. Our academic programs (MA, MS, and PhD) and our DrPH program have similarly updated their competencies. The current version of all of our competencies can be found in Appendix 11.

Assessment
The CEPH site visit raised concerns about our assessment procedures, particularly that the undergraduate’s competency in the public health program is currently only assessed by coursework and that assessments for the academic culminating experience and the PhD qualifying exam and dissertation are not linked to the competencies those degrees have identified.

These concerns will be addressed within the next 3 months, to coincide with our response to the CEPH site visit. The next step in moving toward competency-driven education is to map each competency to the experience by which students acquire the competency (coursework, field internship, research project, etc.) and to demonstrate how each competency is assessed. This “Assessment Map,” which we are actively developing with input from each program, will be part of our response to the CEPH Site Visit Team. Each program (including Undergraduate and PhD programs) will have its own Assessment Map.

The process of developing the Assessment Maps is an integral part of our curriculum review. We have already reviewed our existing courses, examining enrollment numbers, the percent of public health vs. non-public health students served, and course and instructor evaluations, to identify both courses that would benefit from pedagogical improvement and courses that might serve as strong models of teaching excellence and of models for bringing students from different disciplines together. As we create the Assessment Maps using the new competencies, we will look at each course’s syllabus to ensure objectives are aligned with the competencies, and to identify and fill any gaps in existing content.

Culminating Public Health Experience
The CEPH Site Visit Team stated concern about the lack of a capstone course for the undergraduate degree program, which is now a requirement for national accreditation of all undergraduate public health programs in the United States. Beginning in 2017, however, all fourth-year majors in the Program will be required to complete a 3 unit or more capstone requirement. The capstone requirement for the class of 2017 can be completed in one of two ways. First, students may elect to complete a public health honors thesis, working directly with an academic mentor. Students electing to do the honors thesis will also be required to enroll and complete both fall and spring
PH195A/B seminar with other thesis students, which is already in place now as a pilot. The seminar is designed to guide students through the thesis process and addresses key topics in conducting literature reviews, formulating research questions, conducting research and statistical analysis, and the presentation of results.

Alternatively, students may elect to complete the Capstone Course, which we have developed to address the important key topics that intersect across the five basic areas of public health: epidemiology, biostatistics, environmental health sciences, health policy and management, and social and behavioral sciences. The course will meet twice a week for 90-minute sessions. Session 1 will be a lecture component, covering topics such as accessing and interpreting information, and Session 2 will be a smaller discussion component. As part of the discussion session, students will work in teams to address problems in public health through state-of-the-art case-based learning. Students will study several cases throughout the semester (e.g., the need to develop and evaluate a county program for homeless youth) and identify possible strategies to address the problem posed by the case. A case-based approach will include researching the question by accessing the public health literature and inviting public health professionals to the discussion session. For those questions that relate to different cases, the outside speakers will be invited to present to the entire class during lecture. The course will also include other topics such as preparing a project budget and evaluation plan, preparing and conducting a focus group, working with human subjects, grant writing, and interviewing. In general, the capstone will center on community partnerships and mixed-media engagement. Before offering the course formally in spring 2017 (to potentially 200+ students), we will be offering a pilot test of the course in spring 2016 for 30 students. At a later time, field internships will be added as a possible way to fulfill the culminating experience requirement. With our current infrastructure, it would not be feasible for us to offer this to students now as an option.

Center for Teaching Excellence (CTE)

The School is negotiating with one of our leading donors to support the creation of a Center for Teaching Excellence. Building off the important work that the School’s Committee on Teaching Excellence (CoTE) has been doing since 2012 and the lessons learned from the CTE at the Haas School of Business, the new Center would provide training, resources, and coaching for both junior and senior faculty. With support, the School’s CTE will undertake a set of four activities aimed at increasing student engagement and skills-building:

1. Foster innovation in course curriculum design and instructional methods
2. Enhance our community-engaged learning projects (in partnership with local & global partners)
3. Develop a unified knowledge management system to ensure competency-driven education
4. Maintain a supportive climate and practices for promoting diversity and cultural competency.

Given the increasing complexity of today’s public health challenges, the traditional approach of transferring knowledge from “experts” to novices – through lectures and abstract classroom instruction – is no longer sufficient. In order to train tomorrow’s leaders, professional schools such as ours must deploy teaching practices that are hands-on, contextualized, and competency-based. Research shows that such pedagogical approaches spark the kinds of higher-level thinking, creativity, and collaborative learning skills needed to address the rapidly-changing public health threats we face.

Rather than reinventing the wheel, our faculty and administration plan to replicate the successful program elements piloted by the Haas CTE, customized to the needs of the School. These include: new faculty orientation, individualized coaching for instructors, excellence exchange (peer mentoring from accomplished instructors and co-teaching), an ongoing teacher training series, and a course design lab.

**Fung Fellowship in Wellness and Technology Innovation**

We are excited about a new collaboration between the Fung Foundation, our School, and the College of Engineering. The Fung Foundation has committed $3.5M over 3 years to establish a fellowship for undergraduate students who have demonstrated commitment to innovating at the intersection of public health, technology, and wellness. Beginning in 2016, a cohort of 50 students will be chosen for the two-year fellowship, and they will participate in a cross-disciplinary, experience-based curriculum that integrates the best of the engineering, public health, and leadership disciplines and applies them to real-world problems. They will partner on a signature project of their own design that accelerates wellness innovation and truly yields a positive influence on wellness outcomes. Faculty from the School of Public Health and the College of Engineering collaborated in the summer of 2015 to outline the curriculum and activities for the fellowship and will co-teach all aspects of the fellowship. The Fung Fellowship curriculum will comprise a novel learning experience presenting health, technology, and leadership content, woven together through lectures, hands-on application labs, immersive experiences, and participatory research.

**Online Educational Endeavors**

Additional programs within the School have expressed an interest in developing their own online degrees. Health Policy & Management has decided to develop an online
version of their successful MPH program and will be admitting students this fall. The Epidemiology/Biostatistics MPH and the Public Health Nutrition MPH are also exploring the possibility of starting online programs.

In June 2015, a Memorandum of Understanding was signed between UCSF Global Health Sciences and the UC Berkeley School of Public Health. We agreed to collaborate to jointly develop online global health programs and have raised $585,000 to that end. The initial focus areas will be:

- Development of a global-health-focused health policy and management course for the On-Campus/Online Masters in Public Health as a first step towards developing a global health-focused version of the OOMPH;
- Development of two 12-unit bilingual certificate programs, one in Hospital Management and one in Regulatory Science, as part of the UC-Mexico Initiative;\(^5\)
- Development/adaptation of the current UCSF Masters of Global Health Sciences program to an online format.

**Evaluating the Future of Our Programs**

In an ideal world, the School would be expanding to address the increasing demand for public health professionals due to new and emerging public health threats and demographic trends (including the aging of the population and the public health workforce, population expansion, and the increasing ethnic diversity in California). We would be able to grow the faculty, which would allow us to teach more students, have more strength in critical areas, offer a wider selection of classes, and establish more connections with partners. We would also be able to remove the cap on our undergraduate enrollment and accept all of the students who want to learn from us – including more underrepresented minority students.

Instead of these prospects, however, we are bracing for the potential impact of budget cuts that are likely to come in central campus support for the School given the budget deficit that the University is facing. We have been asked to prepare for a potential reduction of 20-25% in the number of ladder-rank faculty positions funded by the campus with a concomitant reduction of up to 50% in campus support for lecturers and graduate student instructors (if the currently proposed model is fully implemented). If this were to occur, it would need to be offset by about $4.5M in annual funding or an increase of about $120M in our endowment.

In response, we will need to consider consolidating or sunsetting educational programs in order to decrease expenditures and increase efficiency while preserving quality. It

\(^5\) The UC-Mexico Initiative is a 10-campus initiative which promotes cross-border partnership in research and scholarly activity that solves problems and advances knowledge on issues of mutual importance.
would not make sense for us to reduce quality in an attempt to maintain all of our programs because it is much easier to grow in size again than it is to rebuild a reputation. We are starting this process by assembling, for the first time, data on program-specific revenue and costs.

The most vulnerable program to closure is the undergraduate program because it neither returns tuition revenue to the School nor generates professional degree fees. (Other highly ranked schools of public health, such as Harvard’s, do not have an undergraduate program.) The DrPH program is similarly vulnerable because we return more in student support than we obtain in tuition and professional fees – and the students are less likely than PhD students to be supported by faculty research grants. We could consider transforming the DrPH into a more professionally-oriented program that assumes that students remain in their workplaces and do most of their work online with periodic campus visits. This is similar to the approach that UNC has taken.

In addition, we will explore the possibility of consolidating some of our programs and reducing the number of different courses, faculty directors, and student services personnel needed to support the programs. For example, we will explore the possibility of converting our Health & Social Behavior, Public Health Nutrition, and Maternal & Child Health programs into a single program with the possibility of sub-specializing in each of the three areas. Other scenarios might entail merging the management of the Interdisciplinary and On-Campus/Online MPH programs or routing our concurrent MPH students through the Interdisciplinary MPH program. We remain committed to our educational mission, and we are seriously thinking through the above scenarios in order to preserve our core enterprise with as much integrity as possible.

Finally, as the entire campus confronts our new budget reality, we are engaged in far-reaching discussions about how different professional schools on campus might work more closely together or even consolidate into a larger college with the goal of realizing scale efficiencies. There may be some minor efficiency improvements that could come from consolidating some of the administrative functions that remain in the schools (i.e. not in Campus Shared Services, such as the Academic Personnel Office). The more important efficiencies might come from curricular consolidation. For example, if the Schools of Public Health, Social Welfare, Education, and Public Policy each offer an introductory course in qualitative methods, it might be possible to offer fewer courses if we collaborated more closely. However, the ability to do that without compromising quality implies that our current courses are inefficiently small. If the “overlapping” courses are already as large as they can be without compromising quality, then there is little to be gained from consolidation – unless it enables a move to hiring “teaching professors” who typically teach twice as much as ladder-rank faculty.
# 2.0 RESEARCH

<table>
<thead>
<tr>
<th>Research Summary</th>
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<tbody>
<tr>
<td><strong>Strengths</strong></td>
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<tr>
<td>● Our research funding is up from $57 million in 2014 to $64 million in 2015.</td>
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<td>● A new director of research development will develop more robust support for infrastructure for faculty.</td>
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<tr>
<td>● We have diverse and complementary strengths across our 7 divisions.</td>
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<tr>
<td>● Over 20 inter-disciplinary research centers provide an invaluable resource to the research training and mentoring of students.</td>
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<tr>
<td>● We had hundreds of publications by faculty in top tier, widely read scientific journals in 2015.</td>
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<tr>
<td>● There is substantial media interest in dozens of faculty research areas.</td>
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<td>● Noteworthy faculty–student research collaborations provide skills training and experiential learning for students.</td>
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<tr>
<td><strong>Challenges</strong></td>
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<tr>
<td>● 15 retirements are expected over the next 5 years.</td>
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<td>● There is an expected 20-25% reduction by central campus in faculty lines.</td>
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<td>● There is a challenging faculty funding model with expectations of shifting from “hard” money to “soft” money.</td>
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<td>● There have been significant administrative challenges working with Campus Shared Services.</td>
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<tr>
<td>● Administrative bottlenecks hinder collaboration with partner institutions (such as UCSF).</td>
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<tr>
<td><strong>Where We are Going</strong></td>
</tr>
<tr>
<td>● Our newly established faculty recruitment plan responds to challenges; faculty expansion will occur by strengthening the case to central campus for more state-funded FTEs, expanding revenue-generating online programs, and investigating other faculty funding models.</td>
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<tr>
<td>● The strategy team will advance schoolwide research priorities</td>
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as defined in 2015-2020 Strategic Plan:
   ● Targeted learning in Big Data
   ● Health technology innovation
   ● 'Omics\(^6\)
   ● Food systems, nutrition, physical activity, and diabetes
   ● Maternal and child health
   ● Adolescent health
   ● Global Health

● Administrative reforms will help address issues with Campus Shared Services and inter-campus collaboration with UCSF.

**WHERE WE ARE NOW**

**Research Funding**

The amount of research funding the School has collectively received has increased to a total of **$64 million in 2015**. This figure excludes the many collaborative grants in which our faculty participate but which are administered by other schools or multi-unit ORUs on campus. It also excludes funding from private foundations, individuals, and companies that are received as gifts. As seen in Figure 1 below, the $64m in funding administered in 2015 represents a 12% increase over 2014.

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\(^6\) 'Omics aims at the collective characterization and quantification of pools of biological molecules that translate into the structure, function, and dynamics of an organism or organisms. It refers to data-rich subfields within biology such as genomics, proteomics, and metabolomics.
Figure 1: Research expenditure (2013-2015)

As seen in Figure 2 below, the School’s largest source of research funding is the federal government, in particular the National Institutes of Health (NIH), which accounts for $22m. Another $29m (30%) of funding comes from California state contracts and grants, and $9m (14%) from foundations. While the $22m in NIH funding administered in 2014 represents a decline from a high of $27m in 2012 and reflects reductions in funding available from NIH, this drop was more than compensated for with funding increases from other sources. The increase in NIH-administered funding between 2014 and 2015 was reassuring in the face of concern over the end of 2009 American Recovery and Reinvestment Act (ARRA) stimulus funding.
Director of Research Development

The School is actively working to further diversify funding with a greater emphasis on donor development, and the funding environment remains positive overall. In addition, in January 2016, the School hired a director of research development, a new position whose job is to support our research efforts – identifying and channeling new sources of research funding and coordinating large, multi-faculty proposals within the School and across campus. The new director will work in close collaboration with the associate dean for research and the School’s development team. The director will help to build a far more robust research infrastructure for the School.

Divisional Strengths and Research Centers

Our faculty’s local, regional, national, and international research endeavors (and the extramural funds that support them) provide an invaluable resource to the research training and mentoring of students, especially for our nearly 600 master’s and doctoral students.
Six of our divisions house research faculty and investigate a wide array of health topics (the exception is the Interdisciplinary Division). The principal strengths of each division are illustrated above in Figure 3. For more details about these strengths, see Appendix 12. In addition, the School houses more than 30 interdisciplinary research centers, which provide rich opportunities for faculty collaboration and graduate student mentoring and training (Figure 4).
Figure 4: Research Centers at the School of Public Health
Publications and Awards

Publications
The School of Public Health’s research operation is extremely productive, with steadily growing numbers of published articles and citations of the School’s work (illustrated in Figure 5 below).

Figure 5: Publications and Citations credited to School of Public Health Faculty (2012-2015)

To give a sense of the range and depth of research conducted by faculty at the School of Public Health, listed below is a sample of recent scholarly work that received significant media attention over the past year:

- Gertrude Buehring showed that a virus in cattle is associated with human breast cancer.\(^7\)
- Eva Harris’ research on the dengue virus suggests that the viral protein that causes dengue shock has the potential to be a vaccine.\(^8\)

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• James Robinson conducted research on the costs of health procedures which showed that reference payments are associated with reduced surgical spending.\(^9\)
• Bill Jagust conducted research on memory loss which showed that poor sleep is linked to toxic buildup of Alzheimer’s protein and memory loss.\(^{10}\)
• Nancy Padian, Sandra McCoy, and Lauren Ralph, a PhD candidate, showed that use of a long-acting hormonal contraceptive is linked to moderately increased risk of HIV infection.\(^{11}\)
• Amani Nuru-Jeter showed that greater income inequality is linked to more deaths for black Americans.\(^{12}\)
• Allan Smith showed that arsenic in drinking water is linked to a 50 percent drop in breast cancer deaths.\(^{13}\)
• Kristine Madsen showed how school-based physical activity and nutrition interventions and modes of transportation affect obesity prevalence among school-aged children.\(^{14}\)

**Awards**

Another measure of the School of Public Health’s excellence is the number of external honors and awards received by our faculty. A few examples of faculty awards received in the past five years are below. In addition, many large federal grants have been received by numerous faculty (see Appendix 13). One page CVs of all the faculty are included in Appendix 14.

<table>
<thead>
<tr>
<th>Name</th>
<th>Award</th>
<th>Year</th>
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<tbody>
<tr>
<td>Barbara Abrams</td>
<td>Elected to Institute of Medicine</td>
<td>2011</td>
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<tr>
<td>Jennifer Ahern</td>
<td>National Institutes of Health New Innovator Award and High Risk-High Reward Research grant recipient</td>
<td>2013</td>
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<tr>
<td>Asa Bradman</td>
<td>Elected Chair of Biomonitoring California’s Scientific Guidance Panel</td>
<td>2015</td>
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<tr>
<td>Timothy Brown</td>
<td>Article of the Year, Academy Health Public Health Systems Research Interest Group</td>
<td>2014</td>
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<tr>
<td>Jason Corburn</td>
<td>United Nations Association, East Bay Global Citizen Award</td>
<td>2013</td>
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\(^{11}\) The Lancet Infectious Diseases, Jan. 2015.
\(^{12}\) International Journal of Health Services, Dec. 2014.
\(^{13}\) EBioMedicine, Oct. 2014.
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<thead>
<tr>
<th>Name</th>
<th>Award</th>
<th>Year</th>
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<tbody>
<tr>
<td>Julianna Deardorff</td>
<td>Zero Breast Cancer Community Breast Cancer Research Award</td>
<td>2013</td>
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<tr>
<td>Brenda Eskenazi</td>
<td>International Society of Environmental Epidemiology John Goldsmith Award for Outstanding Contributions to Environmental Epidemiology</td>
<td>2012</td>
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<tr>
<td>Seth Holmes</td>
<td>American Anthropological Association Margaret Mead Award Association of American Geographers James M. Blaut Award 2014 Association for Humanist Sociology (AHS) Book Award</td>
<td>2015</td>
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<tr>
<td>Teh-Wei Hu</td>
<td>World Health Organization World No Tobacco Day Award, in recognition of outstanding contribution to tobacco control in China</td>
<td>2014</td>
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<tr>
<td>William Jagust</td>
<td>American Academy of Neurology and American Brain Foundation Potamkin Prize for Research in Pick’s, Alzheimer’s and Related Diseases</td>
<td>2013</td>
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<tr>
<td>Nicholas Jewell</td>
<td>Harvard School of Public Health’s Marvin Zelen Leadership Award in Statistical Science</td>
<td>2012</td>
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<tr>
<td>Lee Ann Kaskutas</td>
<td>California Department of Alcohol and Drug Programs Director’s Award for Innovative and Effective Approaches to Research</td>
<td>2012</td>
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<tr>
<td>Meredith Minkler</td>
<td>Jonathan M. Tisch College of Citizenship and Public Service at Tufts University Research Prize for community-based participatory research</td>
<td>2013</td>
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<tr>
<td>Emily Ozer</td>
<td>UC Berkeley Chancellor’s Award for Public Service in the category of Faculty Research in the Public Interest</td>
<td>2014-2015</td>
</tr>
<tr>
<td>Daniel Portnoy</td>
<td>Elected to National Academy of Sciences</td>
<td>2013</td>
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<tr>
<td>Stephen Shortell</td>
<td>American Hospital Association TRUST Leadership Award for visionary leadership in health care Academy of Management Distinguished Research Scholar Award</td>
<td>2015</td>
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<tr>
<td>Kirk Smith</td>
<td>Environmental Mutagenesis and Genomics Society Alexander Hollaender Award for contributions to environmental toxicology</td>
<td>2013</td>
</tr>
<tr>
<td>Martyn Smith</td>
<td>Haagen-Smit Clean Air Award</td>
<td>2014</td>
</tr>
<tr>
<td>Lonnie Snowden</td>
<td>American Psychological Association Award for Distinguished Contributions to Research in Public Policy</td>
<td>2014</td>
</tr>
<tr>
<td>Sarah Stanley</td>
<td>Elected Searle Scholar</td>
<td>2014</td>
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Faculty-Student Collaboration

Didactic research skills training and experiential learning via research apprenticeships and theses are integral parts of the School’s curriculum at all levels; for example, in fall 2015, 284 of the approximately 515 (55%) registered graduate students were hired as graduate student researchers. The role of research in the curriculum is very strong for the School’s DrPH and five PhD programs. The vast majority of the School’s faculty work with doctoral students as part of their training, and curricula are oriented to ensure deep training in the areas in which faculty have expertise. Many faculty members also include master’s students on their research teams.

Faculty Reduction and Funding Challenges

As the School aims to maintain our research strengths and productivity described above, we confront major challenges. The size of our faculty is under pressure from several directions.

First, the School has a faculty with a bimodal age distribution (roughly 1/3 over age 65). We currently face an unprecedented wave of retirements – with 15 ladder rank faculty expected to retire within the coming 5 years. (Four will retire in this year alone.) Second, all of our faculty FTE requests in 2015 were denied. As a result, there were no new professorial FTEs for the 2015-16 recruiting cycle, and we did not receive a requested second off-cycle FTE for the 2014-15 EHS professorial search despite great candidates. We now also have reduced flexibility in using clinical faculty titles. Third, central campus seeks to reduce faculty positions in the professional schools by 20-25%. It is our belief that the faculty cannot shrink in size without sacrificing quality, programs, and research productivity. Combined, these challenges present a real threat. Compounding these issues is the fact that we have a faculty funding model that rarely utilizes soft money faculty and has minimal expectation that hard money faculty will contribute to raising their salary. In the current funding environment, we need greater flexibility in terms of funding source and mix of hard/soft money positions.

Administrative Challenges

Campus Shared Services (CSS)

Faculty continue to express concerns over the quality of grant management support from CSS. Many faculty stated that they would not be able to continue conducting research at the level expected at Berkeley, a premier, world-class research institution, if the support continues as is.

After a detailed review, the School identified three major themes as the biggest problems in post-award grant management: communication, timeliness/accuracy, and overload.
The School and CSS are committed to implementing solutions to the challenges faced by faculty in research administration.

Collaborations with UCSF
Administrative bottlenecks also hinder collaboration with UCSF. One area of particular interest is faculty appointments. Many of our faculty already collaborate, and many already have joint appointments. Yet today such appointments require a significant investment of time and resources, which limits the extent to which joint appointments are pursued. Similarly, sending money back and forth across the two campuses is a cumbersome process. This limits the extent to which researchers jointly bid for funding.

WHERE WE ARE GOING

Faculty Recruitment Strategy
The last review encouraged us to “design a faculty recruitment plan that articulates the rationale and strategy for growth over the next decade,” and to ensure that this plan accounts for emerging areas and subfield specialties. In response to this encouragement and the challenges noted above, we have completed a Faculty Recruitment Strategy (attached in Appendix 2). We pose the overall goal of the strategy in terms of maintaining both the size of the School and the quality of its programs, and using faculty recruitments over the ensuing 5 years to accomplish this. We are therefore proposing an aggressive recruitment plan with 15 new faculty recruitments over 5 years.

Based on the goals of the School, these faculty would be recruited across all divisions with an emphasis on (1) social determinants of health (2) biological and environmental determinants of health and (3) new technologies for health with the theme of data science cross-cutting all of these areas. We have prioritized our requests for the coming target recruitment year but will be flexible in our subsequent requests, which will be evaluated in the context of specific faculty retirements, interests of existing faculty, and the academic growth of specific disciplines.

Research Areas of Schoolwide Focus
The School’s vision for research focuses on solving the biggest public health challenges. These projects will require systemic approaches to research, involving better coordination across the School and the University, collaboration with individuals and communities, partnerships with industry, and communication with policy makers. As a school of public health situated within a world-class letters and sciences campus, we have unparalleled access to preeminent partners in key disciplines, including molecular and cell biology, engineering and computer science, business, law, public policy, and journalism. We also benefit from our close partnership with UCSF, a campus entirely
dedicated to medicine and health sciences. We look to strengthen existing partnerships and build new ones, across the Berkeley campus and across the Bay, in order to increase the impact of our collaborative research.

Our strategy hinges on making significant research bets with the potential to achieve major impact on population health and health equity in our local Northern California communities and in vulnerable populations globally. Therefore, during our 2015-2020 strategic planning process, we identified several areas of strategic research priority for the School. By design, each of these strategic research areas is larger than the specific projects or scientific research agendas of individual faculty. We believe that these collective priority areas will complement the ongoing innovative research conducted by faculty pursuing their individual research agendas.

The collective areas were selected based on the following attributes:

- Major impact on population health and health equity;
- Innovations that transform conventional public health approaches;
- Partnering to address priority needs in our local Northern California communities and in vulnerable populations globally;
- Building on Berkeley’s unique comparative advantages, both on campus and in the Bay Area;
- A critical mass of faculty five years from now who are thought leaders in the area.

The areas of research emphasized are first and foremost innovative areas of academic research that are poised for growth in the field of public health and in which we are positioned to excel. They reflect what we perceive as innovations in science that have occurred over the past 5-10 years and are now clearly with us for the long term. Several of them revolve around innovations in biology, mathematics, computing, and engineering, which are ripe for incorporation into public health research approaches that range from new ways of assessing disease-related exposures (using “omics” methods), through large datasets (“data science”), and new technologies for measuring, tracking, and intervening in both local and global community settings important to the health of the public. These areas of research are also synergistic with strengths and priorities of the Berkeley campus that include data science, engineering, and technology.

The cross-cutting foundations underpinning our research will continue to be a focus on vulnerable populations, with an emphasis on innovations (both technological and conceptual) with transformative potential, and on the importance of collaboration both across the campus and with leading external partners. Each of the six priority research areas identified in our 2015-2020 Strategic Plan are described in further detail below.

**Targeted Learning in Big Data**
The traditional model of generating evidence to manage and optimize health care interventions is under challenge. On the one hand, huge quantities of diverse data from disparate sources, accessible in real time, and coupled with tremendous increases in computing power are a hallmark of today’s world. This deluge of data can yield real insight, but current methods to analyze it are not sufficient to realize its transformative potential. Much of these data are analyzed within a robust statistical framework, such as randomized trials, which are the benchmark in evidenced-based health care. At the same time, many clinical questions of interest – in heterogeneous populations, personalized medicine, highly dynamic treatment settings, and with high likelihood of treatment failure – are not well-suited to classical prospective, randomized designs. Even more troubling, much information in randomized trials, such as potential for targeted therapies, is not properly utilized, wasting an opportunity for more refined care decisions.

Our Biostatistics faculty have begun to address these challenges, developing methods that marry the best traditional statistical approaches with the advances in Big Data, causal inference and machine learning. This team is pushing the state of the art in methods to analyze critical health questions. In contrast to standard machine learning, their approach is designed to address causal questions about which health interventions work best and how to target them to the right person, in the right place, and at the right time. Their Super Learning and Targeted Learning approaches integrate state-of-the-art machine learning with the ability to quantify uncertainty and make valid inferences. These approaches are ideally suited to utilization of efficient adaptive trial designs, where relevant, dynamic information is received from study subjects over time. They integrate a cycle of hypothesis generation, analysis, inference, and adaptation into data systems, automating and accelerating the process of learning from the data: which health interventions work, which don’t, and how should we translate findings into practice and impact. The School has established a Center for Targeted Learning in Big Data (CTLBD), which will bring together researchers in Big Data from statistics, health, and implementation sciences. The Center will develop a shared agenda for research, development, and application of new statistical approaches.

Health and Technology Innovation
The School’s strategic plan identifies health and technology as a key research priority. This encompasses advancing and evaluating the effectiveness of new technologies for measuring, tracking, and intervening in both local and global community settings important to the health of the public. The School plans to partner with the College of Engineering, whose strategic priority for the coming years is “Engineering Better Health;” the Center for Information Technology in the Service of Society (CITRIS); and leading technology companies in the Bay Area. We are not as far advanced in our
strategic thinking in this area, as our initial efforts have focused on developing an educational initiative (see the description of the Fung Fellowship above).

'Omics
We want to build on UC Berkeley’s comparative advantage in new tools and technologies that could lead to quantum improvements in public health strategies. We will develop an ‘omics initiative that draws together cutting-edge scientific advances that uncover important new understanding of health dimensions and threats across the life course and brings together expertise in epigenetics (examining interactions between genetics and environmental exposures), proteomics/metabolomics (in relation to both obesity and infectious disease), and exposomics (assessing environmental and infectious agent exposures in both the external environment and the internal one: the microbiome).

Food Systems, Nutrition, and Physical Activity
The United States is facing a health crisis, a diet crisis, and a food crisis as evidenced by remarkably poor dietary intake, rising rates of diet-related chronic diseases, and a food system that is not sustainable. Less than 20% of Americans consume the recommended amount of fruits and vegetables and less than 2% the recommended amount of whole grains. 36% of Americans are obese and another 30% are overweight, and Type II diabetes is on the rise. The financial burden of these chronic conditions is on the order of $245 billion annually. Furthermore, we face pronounced disparities in dietary intake, access to nutritious food, and diet-related chronic diseases. Individual-level approaches are failing in light of unequal access to affordable nutritious foods and a federal food policy that subsidizes commodity crops.

Researchers in public health nutrition are actively pursuing the related goals of reducing the prevalence of obesity in the United States and improving nutrition of the most vulnerable populations. Important areas of focus include schools (since most children in the U.S. spend half their waking hours and consume up to half of their daily calories in school); the nutrition of preschool-aged children; the effects of food insecurity in low-income, ethnically diverse populations; and evaluation in community settings.

Looking forward, the School seeks to markedly expand research on food production, nutrition, and physical activity. We will do this by investing in and expanding our Public Health Nutrition program and by playing an integral role in the Berkeley Food Institute (a joint research unit with the College of Natural Resources, the Goldman School of Public Policy, and the College of Journalism), and the Atkins Center for Weight and Health. The School is also playing a leadership role in the Health Working Group of the UC-Mexico Initiative. The top research priority of this initiative is research on obesity and diabetes – crippling issues on both sides of the border. Finally, the School seeks to create an innovative, community-engaged teaching kitchen in our new
building, which has just broken ground, to provide another platform for research in this space.

**Maternal and Child Health**
The School of Public Health envisions a world where all children within their family, community, and society, regardless of race, social class, gender, or disabilities have the opportunity to be born healthy, grow healthy, and reach their fullest potential. In March 2015, the School of Public Health received a bequest of $14 million to create the **Wallace Maternal and Child Health Center**. This center complements the school’s **Bixby Center for Population, Health and Sustainability**. These twin centers foster partnerships at every level of research, from discovery science to implementation and dissemination of evidence.

The Bixby Center focuses on developing countries and the new Wallace Center will engage in innovative, evidence-based research aimed at creating healthier generations of women, mothers, children, and families in the United States. It plans to apply a technology focus to its research in the area of maternal and child health and seeks to partner with communities, the private sector, and the University across disciplines to develop, test, and implement technologies and tools aimed at advancing the health of children and families. Center members will use these tools to investigate, educate, and innovate to improve and support the lives of children and families, and advance maternal and child health policy and practice within the United States.

**Adolescent Health**
Despite public health gains in other age groups, the health of adolescents nationally and globally has stagnated or worsened, perhaps because adolescents have been excluded from the maternal, newborn, and child health continuum of care. This is particularly shortsighted because adolescent health sets the stage for health behavior and chronic disease across the lifespan – and represents a key developmental window which ultimately promotes long-term success or augments disadvantage. In the last two decades there have been major advances in our knowledge of how settings shape the development of young adolescents into successful young adults, including how environmental experiences are embodied in the brain and at the cellular level. We now know that the health and success of adolescents is determined by the balance between the settings in which they develop (e.g. families, schools, and neighborhoods) and the strengths and vulnerabilities adolescents bring to those settings.

The School has launched a new research center, **Innovations for Youth (I4Y)**, which develops and evaluates novel and effective community-based approaches to improve adolescent health in real-world settings. The center brings together faculty with expertise in public health, anthropology, demography, epidemiology, education,
medicine, psychology, and sociology. Further, the center will work synergistically with the Center on the Developing Adolescent in the Institute of Human Development to leverage rapid advances in developmental neuroscience into a transdisciplinary understanding of adolescent brain development. This synergy will establish UC Berkeley’s position at the forefront of innovative approaches to improve the health and wellbeing of adolescents locally.

Global Health
Recently, events such as the spread of Zika virus to Latin America and the 2014 Ebola outbreak have highlighted the importance of both scientific and public health research in managing the regional and global impacts of new and re-emerging diseases. However, many parts of low-income countries lack the capacity to manage these diseases, resulting in substantial local damage with risk to nearby countries and the rest of the world. The UC system includes two elite University campuses in the Bay Area – UC Berkeley and UCSF – that bring complementary skills and perspectives to these challenges and others. UCSF and Berkeley have both made important contributions over the years to global public health. The two campuses have played leading roles in advancing our understanding of issues in maternal and reproductive health, in establishing global standards of care for infectious disease (e.g., HIV/AIDS), and in driving important health policy changes in areas related to non-communicable diseases (e.g., tobacco control, nutrition, etc.).

The School of Public Health is working to create a joint institute with UCSF that fosters a shared research agenda in global health, as well as collaboration on educational offerings. We are already working in active partnership through the Institute for Global Health Delivery and Diplomacy, a transformative long-term research partnership with the Ministry of Health in Ethiopia, and we are in active conversations with UC Davis and UCSF about a joint research initiative around “planetary health.” We have recently received a planning grant of approximately $250K from the Koret Foundation to define a shared research agenda in global public health with UCSF, which will allow us to move even more quickly.

In addition, the School of Public Health has recently launched a partnership with the Berkeley Biological Sciences Division called the “Alliance for Global Health and Science,” which seeks to build the scientific and public health research capacity in developing nations to address communicable and noncommunicable threats to health within these countries. The Alliance will expand existing public health efforts and create new world-class research collaborations between Berkeley faculty and partners in developing countries, and will engage local scientists and public health practitioners at developing country institutions. The initial phase of the program will focus on East
Africa, and leverage Berkeley’s existing relationships with Makerere University in Uganda and the University of Zimbabwe.

**Administrative Reforms**

**Campus Shared Services (CSS)**
The School, in partnership with CSS, has made improvements to grant management over the past year. The School implemented a revised proposal request process and form as a means for improving pre-award proposal submissions. In addition to improvements made in the pre-award process, the School and CSS began piloting a post-award workflow management process. The goal of the revised and managed workflow is to improve communication and to ensure all raised issues are fully resolved through better administrator, investigator, and School coordination. Please see the Management Section for more detail.

**Collaboration with UCSF**
In terms of facilitating research collaboration with UCSF, the two Chancellors have agreed to invest in simplifying administrative links and facilitating ease of collaboration between UC Berkeley and UC San Francisco. We are currently recruiting for an assistant dean-level administrator who will be charged with professionalizing management of the relationship between the two universities. It is envisioned that this individual will: (1) keep track of collaborations and facilitate cross campus communication, (2) serve as an information and best-practice resource, and (3) support harmonization efforts and remove common roadblocks and inconsistencies that hinder cross campus collaboration. One immediate area of focus is to develop a UCSF/UCB policy whereby faculty could hold an appointment at the sister campus, which would enable them to participate as fully as possible (teaching courses, mentoring students, conducting research) without requiring the current level of administrative review and duplicative merit and promotion cycles.
### 3.0 COMMUNITY ENGAGEMENT AND SERVICE

<table>
<thead>
<tr>
<th>Community Engagement and Service Summary</th>
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<tbody>
<tr>
<td><strong>Strengths</strong></td>
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<tr>
<td>● We provide graduate students with high-quality, well-supervised community-based internship opportunities.</td>
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<td>● We have a number of centers that are deeply engaged in community work.</td>
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<tr>
<td>● Members of our faculty have a strong tradition of and are highly engaged in community-based participatory research.</td>
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<tr>
<td>● A large number of our courses include community projects that enable students to apply academic knowledge and skills to real-world problems and to benefit communities.</td>
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<tr>
<td>● Many of our faculty members influence policy and serve on important state, national, and global commissions and advisory boards.</td>
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<tr>
<td>● We offer extensive career and professional development services for students.</td>
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<tr>
<td>● Health employers we survey are impressed with the quality of our graduates.</td>
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<tr>
<td>● We have very strong relationships with the area’s health employers.</td>
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<tr>
<td><strong>Challenges</strong></td>
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<tr>
<td>● Providing our level of personalized community engagement experience for graduate students is expensive.</td>
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<tr>
<td>● It is challenging and expensive to enable students to work for organizations that serve marginalized communities, domestically and globally, and who are not able to offer stipends.</td>
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<tr>
<td>● We have insufficient community engagement, internship, career services, and graduate education planning support for our undergraduates.</td>
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<tr>
<td>● We need to coordinate various community engagement activities better across the School.</td>
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<tr>
<td>● We have little current capacity in the important area of using new technologies to bring health interventions to scale.</td>
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</table>
**Where We are Going**

- We will strengthen our policy and advocacy efforts while enhancing advocacy training for students and community practitioners.
- We are strengthening our development operation and seeking endowment funding to support our community engagement activities, including the establishment of a schoolwide office to coordinate and strengthen our extensive community-based efforts.
- We should improve our engagement with the state government and our influence on state health policy.
- We will recruit a new director of the California Program on Access to Care and use that State-funded program as the focal point for strengthening our partnerships with state government and advocates in Sacramento.

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**WHERE WE ARE NOW**

To achieve health equity, the School will invest in deepening existing and new community partnerships in the Bay Area and California as a first priority. We will also continue to expand our international community partnerships. These investments mean we will work in deep partnership with several key communities and local health organizations with a history of serving economically and politically marginalized and underserved populations.

**Center for Public Health Practice (CPHP)**

The Center for Public Health Practice (CPHP) has been the hub of our key community engagement work for the past 15 years. CPHP’s mission is to support students, faculty, alumni, and practitioners to achieve excellence in practice as they promote individual and community health. The center facilitates collaborations with academic, practice, and community partners to make the link between teaching, research, and the practice of public health and provides services appropriate to the needs of its key constituents. It promotes a commitment to diversity, human rights, and social justice within the field of public health.

CPHP provides the following services:
- Community-based internships for MPH students
- Professional development for graduate students, alumni, and health professionals
- Career Services for graduate students and, increasingly, undergraduates
- Leadership development (through the Center for Health Leadership)
Community engagement projects and technical assistance
Support to faculty and students seeking to develop or implement new community-based research, education, or service projects
Health workforce and pathway development

Internships
Community-based summer internships are an important and required part of the educational experience for MPH and DrPH students. Students apply knowledge and skills learned in their first year to solve real-world public health problems. They also develop new competencies and gain valuable exposure, experience, and mentorship. Many secure second-year and post-graduation jobs through their internships. CPHP places over 100 graduate students per year in internships. Students are matched with internships that align with their interests from among CPHP’s diverse set of over 200 community partner organizations (See list in Appendix 15). The level of internship recruitment and personalized matching that CPHP provides is unique among schools of public health and is a differentiating strength of the School. CPHP also recruits more paid and better paying internship opportunities for graduate students than other schools of public health. In addition, for the past 10 years, CPHP has mobilized grant and philanthropic support to enable between 20-30% of our students to work for organizations that serve marginalized communities domestically and globally that are not able to offer stipends.

Career Services and Professional Development
CPHP also offers extensive career and professional development services for students to supplement their educational experience and the quality of their post-graduation opportunities. Our exit surveys indicate that career services is one of the strengths of our educational experience for graduate students. Unfortunately, however, we do not have sufficient opportunities for our 440 undergraduate public health majors to obtain valuable community engagement and internship experiences. They also do not have sufficient career services and graduate education planning support. As a result, unless they have managed to obtain relevant summer jobs on their own, through CPHP partners or through faculty informal connections, they may graduate without sufficient practical work experience to make them as competitive in the public health job market as they should be or even competitive for MPH programs, including our own, that require evidence of practical work experiences.

The level of faculty, staff, and stipend support that CPHP invests in students and community partners is important and rewarding, but it is also expensive. It is reliant on shrinking levels of campus support and on current use philanthropy. To ensure the long-term financial viability of these activities, the School will have to rely more on philanthropy and revenue generation rather than campus support going forward. The
School has embraced and is committed to making the transition to a more entrepreneurial funding environment in order to preserve and enhance CPHP.

**Center for Health Leadership (CHL)**
One of CPHP’s core services is the Center for Health Leadership (CHL). Founded in 2008, CHL, which is entirely funded by the Eustace & Kwan Foundation, offers educational programs, experiential learning, and community engagement in order to inspire and empower graduate students to become more effective public health leaders. Students that participate in CHL courses, the CHL Fellows Program, and the CHL Association complete team-based community engagement projects that provide them with hands-on experience and valuable public health skills and enable them to make a positive impact on local health organizations and the communities they serve.

**Research Centers and the Community**

In addition to CPHP, the School has a number of other centers that are deeply engaged in community work, including the Labor and Occupational Health Program, Center for Occupational and Environmental Health, SafeTREC, Health Initiative of the Americas, and Health Research for Action. These centers provide platforms for students and faculty members to conduct research, provide technical assistance, and involve community members in educational activities. Our centers also provide competency-based, capacity-building training to state and local government and community-based organizations. Details of the work of these centers are available on our website.

Despite these centers and the many individual faculty members doing valuable community work and forging deep community connections, there is insufficient coordination among our efforts. As a result, we are not leveraging our relationships and expertise to facilitate greater and more efficient community engagement by students and faculty. Greater schoolwide coordination of and communication about our community engagement would also enhance our ability to support technical assistance and service requests from partner organizations, develop revenue-generating projects, and increase the visibility of our service and impact.

**Community-Based Research**

The School historically has been a leader in community-level health research, including community-based participatory research (CBPR), an innovative approach to research that engages community members affected by the problems studied as partners in the research process. The use of new technologies to bring health interventions to scale is a critical new area for the community intervention field, and one in which we have little current capacity among our FTE faculty in our School or on campus. Collaborative
community health research was emphasized as a core priority in the SPH’s recent strategic planning process, but our ability to lead research and to provide teaching in these core areas has been threatened by recent and upcoming retirements. With these retirements, we cannot meet the increasing demand from other units on campus (e.g., engineering, informatics, public policy, education, social welfare, and business) for courses in the application of social science to behavior change on the population level and in the development and evaluation of community interventions.

Examples of Faculty Community-Based Participatory Research
Meredith Minkler (professor emerita) played a key role in defining and diffusing CBPR in the field of public health, through co-editing the seminal textbook and as a leader of many key projects domestically and internationally. Other key faculty continue to build on this legacy. For example, Rachel Morello-Frosch focuses on bringing rigor to CBPR and its relationship to environmental health policymaking; Emily Ozer is a leader in youth-led participatory action research (YPAR) examining the impact of YPAR on students and schools and building a rigorous evidence base for this approach; Linda Neuhauser is a leader in transdisciplinary, translational, and participatory approaches to improve international health interventions; Joan Bloom, Mahasin Mujahid, and Bill Satariano work with African American, Latino, and Afghan immigrant communities in Alameda County churches to reduce disparities in mortality through screening for breast and colorectal cancer; and Jason Corburn examines the links between environmental health and social justice in cities, notions of expertise in science-based policy making, and the role of local knowledge in addressing environmental and public health problems

Student Placement
As part of our mission, we provide a preeminent education that challenges convention and develops diverse leaders who transform the health of our communities. We are dedicated to bringing together employers, students, and alumni in order to create a diverse public health workforce in a variety of sectors. Through the programs listed above, as well as others such as the Kaiser Permanente Public Health Scholar program and PRIME-US, we encourage and equip our students to serve in communities with vulnerable populations.

Each year since 2006, our Office of Career Services has conducted an employment survey of the graduating master’s (MA, MS, and MPH) and doctoral (DrPH and PhD) students. The 2015 survey was conducted between May and November and is a snapshot of employment trends at the time of graduation. The survey was sent to 171 graduates with a 94% response rate, the highest response rate to date. The majority of respondents not seeking employment are continuing their education by pursuing a PhD (7), RD (4), or MD (3).
The chart below represents employment sectors for all graduate degrees. For the first time since implementing the survey, research is not the top employment sector. For the fourth year in a row, consulting is trending high. A new development this year is a higher number of graduates working for start-up companies. (For a list of employers, see the full report in Appendix 16).
The annual salary range for MPH students was $40,000 to $100,000+, the average salary was $67,358, and the median salary was $60,500.

The majority of respondents who were employed upon graduation reported starting their job search more than 6 months before graduation. They also reported that working with employers through internships, projects, or prior work are the top ways they found their jobs. Twenty-five percent of employed respondents indicated they would be working outside the SF Bay Area.

We do not yet have a system in place for tracking employment status or graduate school entry for graduates of our undergraduate program. This is an area we would like to develop in the future.

**WHERE WE ARE GOING**

Our strategies and objectives going forward will focus on greater integration and coordination among centers and initiatives, as well as strengthening our community engagement infrastructure. We will proactively coordinate our collaborations across the School and the Berkeley campus and seek external funding to invest in more robust processes and infrastructure to sustain and expand our community engagement.
initiatives, effectiveness, and impact. We will develop new models and revenue sources to fund the effective but expensive level of community engagement support we provide to students. Finally, we will build on the School’s longstanding history of community-based participatory research so that we continue to create authentic and respectful academic-community collaborations. We hope to accomplish this through four main areas: the Advocacy Initiative, community studios, an Office of Community Engagement, and workforce development.

**The Advocacy Initiative**

The School of Public Health is requesting a grant of $125,000 from Kaiser Permanente to scale up advocacy training opportunities for all public health students. We are also pursuing additional funds from the California Endowment, the current major funder of advocacy efforts at the school. The proposed Advocacy for Health Justice Initiative will create a program for students, recent alumni, and public health organizations to collaborate in campaigns to improve or protect health policies. The Initiative will provide practical hands-on advocacy training to augment other student learning modes. The overarching goal is for students and graduates to serve as effective agents of change for underserved communities in California and beyond. Senior staff and a graduate student coordinator will engage Berkeley faculty and alumni, government, and community-based organizations to expand the existing pilot efforts into a permanent full-scale clinic and teaching program that will reach all graduate students and have a long-term influence on local and state policy and regulatory change.

**Community Studios**

We will continue to develop partnerships with new and existing community partners. They will be a key component of our educational and community engagement strategies and a platform for deepening community engaged research by centers and faculty. Specifically, we are working to establish a signature partnership with the City of Richmond, CA, and work with the community and other public practice schools units across the Berkeley campus (Social Welfare, Education, City & Regional Planning, and Law) to identify and sustain a set of joint research and community impact projects. We are also expanding and formalizing our long-standing community engagement partnerships with UCSF Benioff Children’s Hospital Oakland and Alameda County Public Health Department. The focus will be on increasing educational and practice opportunities for students, training for partner staff, collaboration to address priority community needs, and research opportunities for faculty. Additionally, we are deepening our relationships with Oakland Unified School District and their health academies to offer greater opportunity for young people from low-income backgrounds to become public health professionals, and we are part of forming a regional coalition to meet priority health workforce needs in Alameda and Contra Costa Counties. We will
also continue to develop a partnership with Hartnell Community College in Salinas, CA, to support the establishment of a public health program for their students, increase local public health internship and job opportunities, and establish a strong connection for their students to transfer to and/or eventually matriculate to the UC Berkeley School of Public Health for their MPH degrees. We are seeking philanthropic support to fund the partnership.

**Office of Community Engagement**

To enact our strategy, we will organize the School’s extensive community-based efforts within the Center for Public Health Practice and create a new Office of Community Engagement that will serve as the hub of our community-based participatory research, teaching, and service relationships in Northern California communities and allow for improved support and centralized information on community engagement activities.

This will allow us to increase our ability to track and manage the numerous School centers and programs that engage community, locally and globally, increasing our capacity to radically collaborate with community partners to achieve the goals of priority health initiatives. We will develop schoolwide best practices for the ethics and conduct of academic-community collaborations that help prevent so-called “drive-by” research, in which marginalized communities are the “objects” but not beneficiaries or partners of public health research.

Establishment of the office is currently on hold. We need funding for a director and a coordinator. Unfortunately, due to campus and School budget constraints, we cannot afford to hire them and CPHP does not have capacity to move forward without these positions due to reductions in other CPHP staff. We are in the process of seeking philanthropic funds to support the staff and required infrastructure.

**Workforce Development**

CPHP will continue to be a leader in statewide, regional, and local health workforce development. CPHP will continue to provide competency-based training for the health workforce on priority topics identified by our alumni and community partners. For example, CPHP will continue to provide support to the California Department of Public Health (CDPH) to complete and implement its health workforce development and succession plan. The partnership will include a formal relationship and channels with CDPH to connect more graduate and undergraduate students to their jobs and internships. Additionally, the Schaeffer Fellows Program will be implemented in 2016 and will provide 10 or more paid internships per summer to undergraduate students in state, county, and national government. This not only benefits the students but also
government workforce development efforts, as the goal is to encourage and enable more students to work in government.

Further, there are opportunities to expand our impact on workforce development and revenue by increasing online and in-person executive education programming. However, with the recent loss of a major federal public health training center grant that we had for over 12 years, we do not have the staffing, resources, and infrastructure to fully pursue opportunities and be successful in a very competitive space.
## Diversity, Inclusion, Community, and Equity

### Diversity, Inclusion, Community, and Equity Summary

| Strengths | - The DREAM Office demonstrates commitment to diversity, respect, equity, action, and multiculturalism.  
- The proportion of URM students has increased from 5% to 24% between 2005 and 2015.  
- The proportion of URM faculty has increased from 12% to 17% between 2005 and 2015, and women have been promoted more equitably to leadership positions.  
- Many faculty members conduct research on health equity, multicultural issues, and vulnerable populations, and students can now obtain a Multicultural Health certificate.  
- The DICE (Diversity, Inclusion, Community and Equity) Committee addresses issues related to climate and organizes monthly “Town Halls.” |
| Challenges | - The diversity of the student body is far from that of California.  
- Larger URM applicant pools have not led to a greater number of offers to URM faculty.  
- Salary inequity persists among male and female faculty.  
- Climate survey results indicate issues related to exclusionary behavior/microaggressions inside and outside the classroom. |
| Where We are Going | - Grow URM student body by: (1) strengthening outreach to community colleges, CSU campuses, historically black colleges and universities (HBCUs) and Hispanic-serving institutions (HSIs), and Bay Area high schools with pre-health or STEM programs, (2) reviewing admissions criteria and processes, (3) enhancing funding packages and increasing multicultural health curricular, co-curricular, and research opportunities.  
- Increase recruitment, hiring, and retention of URM faculty.  
- Develop strategies to address faculty equity issues related to compensation, promotion, and merit. |
Create “Climate Team,” offer trainings on cultural humility, and conduct monthly Town Halls to address climate issues.

WHERE WE ARE NOW

The DREAM Office

The School is dedicated to promoting and respecting diversity and inclusion in our education, research, and service pursuits, both within the School and in partnership with others. Our embrace of diversity and inclusiveness improves our effectiveness in addressing the health needs of diverse populations in California and around the world.

To demonstrate this commitment, the School created an Office of Diversity Services in 2005. The original charge of the Office was to increase outreach to and recruitment of underrepresented minority students. In 2015, the Office of Diversity Services was rebranded as the DREAM (Diversity, Respect, Equity, Action, and Multiculturalism) Office, and its charge has been expanded to address issues related to climate, curriculum, student retention, and faculty recruitment.

The DREAM Office is staffed with a Director and an Outreach Coordinator and offers a range of programs and services, including:

- GRE preparation
- Application assistance
- One-on-one admissions advising and group information sessions
- Career workshops
- Advising on summer research opportunities
- Summer preparatory seminar: A weeklong program intended to strengthen quantitative skills and foster a network among underrepresented students preparing for public health graduate studies
- GRADS Advising: Graduate Advising and Diversity Services (GRADS) Student Ambassadors, a group of volunteers who work with prospective students during the application process, give advice, offer support, foster connectedness, and share their own experiences at the UC Berkeley School of Public Health.

We are currently recruiting a new director for the DREAM Office.

Proportion of URM Students

Since the DREAM office was created in 2005, the proportion of URM students has increased from 5% to 24% overall. Figure 1 illustrates proportion of URM
undergraduate and graduate students within the School of Public Health, compared to the university as a whole. As is evident, SPH is significantly better than the rest of campus relative to the proportion of URM undergraduates, and on par with campus relative to the proportion of URM graduate students. We are very proud of the work we have done to increase the racial and ethnic diversity among our student body.

Figure 1: Proportion of URM students at the School of Public Health and UC Berkeley

Despite this progress, the University as a whole is less diverse than the state and much less diverse than California’s public high schools. As illustrated in Figure 2 below, we are relatively overrepresented relative to the population in the state with regard to Asian (and even URM Asian) students. Across both graduate and undergraduate populations, we are significantly underrepresented with regard to Hispanic and Latino students.
Between 2005 and 20015, the School saw a very modest increase in the proportion of graduate URM applicants from 15-18% and a large increase in URM acceptance rates from 31% to 38%. This success can be largely attributed to the efforts of the DREAM Office. Please note that the application, acceptance, and matriculation rates vary widely by program. A graph illustrating this variance is available in Appendix 17.

However, during this same time period, the URM matriculation rate for graduate students remained stable at around 50%. The failure to improve URM yield may be attributable to budget constraints that do not allow us to aggressively offer as much funding as competing private schools. With regard to our undergraduate program, we have noted that we last year turned away 40% of applicants due to the cap on enrollment. Without this cap, we would be able to enroll a greater proportion of URM students. This would be very positive for the School, especially given the fact that we believe creating a diverse health workforce is imperative to addressing the pressing public health issues facing our state.

**Proportion of URM and Female Faculty**

The percentage of URM faculty, while low, has been steadily rising as well, moving from 9% in 1995 to 12% in 2005 to 17% in 2014, as illustrated in Figure 3 and as compared to only 8% campus-wide. The School has recruited 10 senate faculty from underrepresented backgrounds since 2004.
To increase the proportion of URM faculty at the School, we have followed the recommendations provided by the campus Office of Equity and Inclusion to increase the diversity of all applicant pools for standard/normative faculty searches. Yet, while we have been effective at increasing our applicant pools for recent faculty searches, this has not necessarily led to a greater number of offers to URM applicants. Indeed, in six total faculty searches over the past 2 years (five standard FTE searches and one search for JMP director), we have made one offer to a URM candidate. This offer went to Hector Rodriguez, who is currently an associate professor in the Health Policy & Management area and Chair of Health Policy PhD Graduate Group. All other offers were made to white male applicants. This suggests that simply following the Office of Equity and Inclusion guidelines, focused on increasing URM applicants in the applicant pools, does not necessarily lead to more URM faculty offers.

Still, we have capitalized on the opportunity to diversify our faculty via additional mechanisms. For example, the Evelyn and Walter Haas, Jr. Fund supports the new UC Berkeley Initiative for Equity, Diversity, and Inclusion. Using this mechanism, we were able to successfully recruit Assistant Professor of Epidemiology Mahasin Mujahid. We are also in the process of making an offer to another individual, whose work explores the past and present roles of science in both constructing racial meanings and explaining racial disparities. We are optimistic that this hire will be finalized in early spring of 2016.
With regard to gender diversity, the faculty are fairly evenly split between women (48%) and men (52%). The previous academic program review noted that many strides had been made in hiring women faculty but that women had been less visible in leadership roles within the School. This has been changing. Two of the four associate deans are women (Associate Dean of Student Affairs Joan Bloom and Associate Dean of Research Lia Fernald). Three of seven division heads are women: Brenda Eskenazi (Community Health & Human Development), Ellen Eisen (Environmental Health Sciences), and Kristine Madsen (Interdisciplinary). Additionally, two of our four assistant deans are women, and six of our seven division managers are women.

**Inequities in Compensation, Merits, and Promotions**

In 2012-2013, an ad hoc faculty Equity & Inclusion committee was formed in response to issues of salary equity within the School, specifically between male and female faculty. This committee conducted a Climate Survey about Salary Equity and also conducted a Salary Equity Study using the School’s salary data from 2008-2012. The Salary Climate Survey and Equity Study demonstrated that salary inequity between male and female faculty is a continuing and unresolved problem that seriously impacts the overall work climate and faculty morale in the School.

The most recent UC-wide Climate Survey data supports this assertion. These data have informed faculty-wide discussions about how to solve this problem. Most recently, a campus-wide Targeted Decoupling Initiative (TDI) was implemented that allows for Schools (and departments) to offer one-time salary increases to selected faculty members. All ladder rank faculty members were invited to participate in the process of devising a rubric that would inform how the dean would select faculty members to benefit from the TDI. The implementation in 2015 of the TDI program significantly reduced salary differentials between women and men.

**Diversity Related Research and Curricula**

The School has many scholars who are producing innovative research on multicultural issues and vulnerable populations. Mahasin Mujahid’s research examines how features of neighborhood environments impact cardiovascular health and health disparities. Seth Holmes is investigating social hierarchies, health, and the naturalization of difference and inequality in the context of transnational U.S.-Mexico immigration. Denise Herd focuses on how alcohol and drug use patterns affect different ethnic communities and also leads the Health Disparities Cluster at the Haas Institute for a Fair and Inclusive Society. Sylvia Guendelman studies access to health care for disadvantaged populations, including the working poor. Darlene Francis’s research program explores how experience and social factors are transduced into biology.
This strength of the faculty has helped significantly expand the curriculum to prepare all students to work effectively to address health disparities and other priority public health issues. Students can now obtain a Multicultural Health certificate by taking 9 units of courses such as: Research Advances in Health Disparities, Social Epidemiology, Cultural Competency and Humility, Understanding and Eliminating Health Disparities, Queer Health, and Diversity in Health Status and Behavior. As part of the OOMPH program, the School has also designed a virtual version of the on-campus Multicultural Health course (Culture, Public Health Practice, and Promoting Equity).

**Climate Issues**

In March 2014, we received results from the UC-wide Campus Climate Survey, which clearly indicated that we needed to address climate concerns in the School and across the Berkeley campus. One view of these survey results is presented in Figure 4 below.

Figure 4: Demographically Weighted Campus and Unit Climate Comfort Rates by Department

The exhibit above illustrates that despite the School’s commitment to social justice and diversity, we were not clearly better off in terms of climate comfort than other units on campus. These findings inspired us to administer our first SPH-wide climate survey in late spring 2015. It included 14 questions, and a mix of qualitative and quantitative data was collected. 350 individuals responded to questions designed to follow up on
concerns identified in the UC wide survey related to: (1) negative experiences of URM community members and (2) the experience of exclusionary and discriminatory behavior.

The results of this School-specific survey are presented in Figure 5 below.

Figure 5: Results of the School of Public Health Climate Survey (2015)

The results indicate that the School has significant work to do in creating a welcoming climate for community members who are low-income, people of color, non-native speakers, transgender, immigrants, and disabled. Even more troubling is the fact that there were 112 respondents to the survey who cited specific examples of exclusionary or discriminatory behavior in the past year. In addition, 80% of the African American members of our community reported dealing with racism, 57% of LGBTQ people reported dealing with homophobia, and 77% of disabled people reported dealing with ableism “occasionally,” “regularly,” or “constantly.” We have many problems within and outside the classroom to address.

To address these challenges, the School has recently revitalized the Multicultural Concerns committee, which has existed informally for many years. The new Diversity, Inclusion, Community, and Equity (DICE) committee is an Executive Committee with several subcommittees dedicated to addressing issues related to diversity, equity, and
inclusion across the School. The committee provides a forum for all members of the School to inform strategic planning as related to these crucial issues.

The DICE committee also sponsors monthly town halls on racism, equity, power, and privilege convened by the dean in response to issues with campus climate. These have provided the School with a new forum for staff, faculty, and students to share their concerns about exclusionary behavior and micro-aggressions. DICE also sponsors the new Public Health Caring Allies Listening Program (PH CAL) through which staff, faculty, and students with concerns receive compassionate listening, kindness, safety, and validation.

WHERE WE ARE GOING

URM Application, Admissions, and Matriculation Rates

The School seeks to increase the diversity of our graduate and undergraduate public health students to more closely reflect population diversity within the state of California, particularly with respect to Hispanic and Latino students.

The DREAM Office (in collaboration with the Office of Student Services & Admissions) will spearhead efforts to strengthen the pipeline and increase the pool of qualified applicants from underrepresented and disadvantaged backgrounds by: (1) reducing structural barriers to admission for undergraduate public health majors; (2) strengthening outreach to and linkages with external programs with high numbers of qualified, prospective students; (3) expanding relationships with community colleges, CSU campuses, historically black colleges and universities (HBCUs), and Hispanic serving institutions (HSIs); and (4) developing relationships with Bay Area high schools with pre-health or STEM programs. Further, we plan to conduct a holistic review of admissions criteria and processes to ensure that they support a comprehensive and equitable evaluation of all applicants. Finally, the School will strengthen outreach and mentorship to admitted students, enhance funding packages, and increase multicultural health curricular, co-curricular, and research opportunities in order to increase the matriculation rate of successful URM applicants. We are actively fundraising to support these efforts.

Recruitment, Hiring, and Retention of URM Faculty

The School will strengthen outreach and recruitment efforts for URM candidates and augment hiring practices to enhance URM representation on interview committees and during job talks (at student and faculty levels).
The School is committed to addressing faculty equity issues related to compensation, promotion, and merit. The strategies by which to do this are still being explored. In our efforts to address faculty equity issues, particular attention will be paid to URM faculty from a variety of backgrounds (e.g. race/ethnicity, disabilities, sexual orientations, gender, religion, SES). Future faculty recruitment plans will more explicitly address issues of diversity.

The School recognizes that it is not enough to “hire” diverse faculty. We will promote equity relevant to teaching, service, mentoring, and opportunities for leadership for all URM faculty.

**Curricular Innovation**

The School will augment its curriculum by creating curriculum standards that include issues of diversity, equity, and inclusion. We will also identify and offer professional development opportunities for faculty and GSIs to acquire skills to integrate diversity, equity, and inclusion topics into their curricula. The School plans to create a Center for Teaching Excellence, as mentioned in the Education chapter, and it will focus on curricular innovation and address issues of diversity, equity, and inclusion.

**Climate Team, Cultural Humility Trainings, and Town Halls**

The School seeks to cultivate a climate that allows all community members to feel welcomed, supported, included, and valued by the School and the University. We also seek to encourage and support individual and group dialogues on issues of equity, inclusion and diversity. To achieve this, the School will create a Climate Team composed of faculty, staff, students, and alumni to recommend policies, practices, and strategies to advance our aims. This team will conduct an annual climate survey to inform its recommendations.

Importantly, we will also increase the opportunities for all members of the community to participate in professional development opportunities that improve climate, equity, and inclusion. The graduating class of 2015 dedicated their class gift to trainings for students and faculty on cultural humility, a testament to both the importance of this topic and the heightened awareness of our community.

Finally, we will continue the recently established tradition of holding monthly Town Halls where the School community can gather and openly discuss how we can begin to address exclusionary behavior and become champions for equity for students, staff, and faculty of all demographics.

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### Governance Summary

| **Strengths** | There is a strong shared governance model, and there are mechanisms in place to ensure the input of all stakeholders: deans, ladder and non-ladder faculty, staff, students, alumni, and donors.  
| **Challenges** | There is no clear relationship between central campus financial support and SPH educational and research productivity and no consistent financial metrics across campus to drive planning.  
| | Absence of any campus-level academic planning makes school-level planning difficult.  
| | As a small professional school, we need campus intervention to ensure that our minority interests are protected.  
| **Where We are Going** | We look forward to participating in the design of clearer financial incentives. |

### GOVERNANCE: WHERE WE ARE

**Strong Shared Governance Model**

Shared governance is a value and practice shared by all stakeholders. The dean actively seeks input from the following stakeholder groups:

**Dean’s Administrative Council (DAC)**

The DAC is comprised of the deans, the seven division heads, and student representatives. This leadership group provides advice on the School’s policies, strategies, resource allocation, and activities.
Faculty Advisory Council (FAC)
The FAC is comprised of Senate faculty. We have created a newly streamlined subcommittee structure for FAC, which includes a clear division of labor between five standing subcommittees:

1. Educational Policy & Curriculum Committee: responsible for curricular planning, approval of new courses, review of substantial course changes, etc.

2. Student Affairs Committee: responsible for all issues related to the student experience, such as financial aid, enrollment, student life, etc.

3. Undergraduate Management Committee: responsible for the undergraduate program at the School, including courses, admissions, accreditation, etc.

4. Equity Committee: responsible for all issues related to faculty climate and equity, with particular emphasis on salary equity.

5. Committee on Academic Affairs: responsible for issues related to academic merits, promotions, appointments, etc.

Teaching & Research Advisory Council (TRAC)
The TRAC, comprised of non-Senate faculty, provides a forum comparable to the FAC for non-Senate faculty to raise issues and advise the dean. TRAC members also participate actively on all of the FAC subcommittees with the exception of the Committee on Academic Affairs.

Staff Advisory Council (SAC)
The SAC is a forum for staff to raise issues to the dean and for the dean to raise issues with the staff. Members are elected to serve on the SAC. The SAC is an important vehicle for communication, change management, and leadership. The SAC also operates several subcommittees focused on climate, development, and recreation.

Student Government
The Student Government is a group of elected public health graduate students who act as a liaison between the students and the administration and faculty. It functions as a communication vehicle between these entities to involve and inform students of ongoing activities and decision-making at the School. The Student Government includes representation from all academic and professional programs.
Public Health Alumni Association (PHAA)
The PHAA is led by a volunteer board of directors, which consists of elected alumni directors, the dean, and student representatives. The purpose of the association is to strengthen relationships between alumni and current students, support and promote public health professionals, and support fundraising efforts. PHAA hosts a variety of regular and ad-hoc meetings and events throughout the academic year.

Policy Advisory Council (PAC)
The PAC was established in 1993 for the purpose of advising the dean and supporting the School in its efforts to attain the highest level of quality in professional education, research, and service in all aspects of public health. Members of the PAC include alumni, donors, and leading public health intellectuals. The PAC provides valuable insight and intelligence to the dean about broad strategic issues and actively supports the School’s fundraising efforts.

Diversity, Inclusion, Community, & Equity (DICE) Committee
DICE is an open-membership committee of dedicated staff, students, faculty, and alumni. The committee’s mission is to represent the views of underrepresented or historically disadvantaged communities within the School and to improve the climate and culture of the School as it relates to diversity, equity, and racism. DICE is a key forum for members of the community to raise issues to the dean in a safe and supportive environment.

(The only stakeholders that are not yet represented in this governance model are the postdoctoral scholars.)

Participation in Campus Governance
The dean enjoys strong support from the Provost and Chancellor, and he is well integrated into campus-wide governance mechanisms to help ensure that the School is positioned to take advantage of opportunities for collaboration in research, education, resource mobilization, and administrative streamlining. The dean participates in the following groups:
Council of Deans
Council of Social Science & Humanities Deans
Council of Science & Engineering Deans
Council of Professional School Deans
Chancellor’s Advisory Committee on Biology
Berkeley Global Campus Steering Committee
UC System-wide Health Sciences Committee.
Misaligned Financial Signals from Campus

The opaque incentive structure built into the University’s financial model makes it difficult for the School to make informed, rational, and strategic decisions as they relate to academic, research, and financial priorities. At present, there is no clear relationship between educational productivity (e.g., number of undergraduate students, number of graduate students, number of credit hours taught, quality of instruction, and student satisfaction) and campus support (e.g., faculty FTEs, Temporary Academic Support [funds for hiring lecturers and graduate student instructors], administrative staff support, student advising support, and student study/work space). The one exception to this is a new model for calculating Temporary Academic Support that has just been released in preliminary form for FY2016-2017 that only considers undergraduate teaching and does not take into account teaching load on ladder-rank faculty.

Furthermore, there is no relationship between faculty research productivity (e.g., grant dollars, indirect cost dollars, graduate student support dollars, and quantity or impact of publications) and campus support. As of this year, no proportion of indirect costs will be returned to the decanal unit, and it is unclear whether research productivity will influence administrative support provided to the School or the space allocated to the School, whether the faculty FTE allocation with grow or shrink, etc. As a result, faculty are not incentivized to contribute to campus by bringing in research funds that help to support the overall enterprise and support graduate students and postdocs, and worse, they are implicitly incentivized to avoid dealing with the inefficiencies of central campus’ bureaucracy by channeling their grant funds through other organizations, hosting graduate students and postdocs that are funded through other organizations, and developing off-campus research groups that only pay 26% overhead. The lack of positive incentives also creates the perception that any new income generated by the School will enable a commensurate decrease in campus support. The lack of common metrics makes it difficult to value and prioritize different academic, research, and service activities because the School cannot predict how an activity will be rewarded, or not, by campus.

Lack of a Campus-Level Academic Plan

The mixed financial signals are compounded by the fact that there is no formal, widely distributed campus-level academic plan. Such a plan would help the School understand the implications of its undergraduate and other programs in the context of the larger University. It would also help us understand the future allocation of faculty FTEs and allow for a broad discussion of academic priorities in relationship to resource allocation across the University. We would be able to answer questions such as the following:

○ Would the campus like us to expand or shrink our undergraduate major, especially when faced with budget cuts?
Would the campus like us to teach more or fewer lower-division undergraduates or undergraduates in other majors?

Would the campus like us to teach more or fewer graduate students from other schools/colleges?

Are our students taking too many or too few classes from other schools/colleges?

Does the campus plan to expand or shrink the faculty of the SPH relative to other schools and departments on campus, and why? Is there anything that we could do that would increase campus support for expansion of our faculty (or reduce the probability that it will shrink)?

Are we better off keeping our research centers off campus or bringing them on campus?

If we mobilize funds for expanding our faculty from external sources, will we have even less claim to support for faculty FTEs from the campus?

Absent a model of central planning, an alternative approach would allow professional schools to be responsible for their own revenue and expenditures and get taxed by campus for shared services. In such a system, we would keep a significant proportion of our tuition and indirect cost revenue and either buy services from campus or provide them ourselves (or in partnership with other schools).

Either approach is workable: central planning with clear goals and incentives or a decentralized model in which revenues and expenses are largely devolved to the individual schools. However, in our current structure, changes in student tuition (through increased or decreased student enrollment in the School) have no impact on our budget. Increases in research funding increase our administrative costs but not our revenues. Without clarity on what behaviors by a school are correlated with increasing or decreasing allocation of central resources to that school, it is very difficult for a dean to plan appropriately.

While these issues have been relevant in previous years, they are far more acute now that the campus is facing the need to dramatically reduce its expenditures. All of the schools and colleges will need to increase revenue and reduce expenses, but to do that intelligently, we need to better understand which of our actions will have what impact on our revenue, on the charges/taxes, and on our space allocation from the central campus.

Minority Interests in Shared Governance Model

Professional schools comprise a small percentage of total faculty FTEs. On a campus with very strong shared governance, and thus substantial power wielded by Faculty Senate committees, this can be severely prejudicial unless the rights and interests of
those schools are protected. In the Education section, we provided a chart of faculty/student ratios, which showed that we have the 5th highest student/faculty ratio on the campus. Given that UCOP guidelines suggest that health profession students typically require five-fold the number of faculty per student as compared to undergraduate students, the School’s position on the graph is surprising.

On most other university campuses, the professional schools have a greater ability to exert influence because the imbalance in faculty numbers in the Faculty Senate is not as great (due to the presence of a medical school and its large faculty) and because decisionmaking about new faculty FTEs is not divorced from educational and research productivity (i.e., the decisionmaking role of the Senate is not as great relative to the administration). For example, none of the smaller professional schools have a seat on the Senate’s budget committee that makes the FTE allocation decisions. Not only do we not have a vote, we do not even have a voice. This is a major governance challenge for all of the smaller professional schools.

As an illustration, we compared the allocation of ladder-rank faculty across Berkeley to that at Harvard. This comparison should clearly be done for a larger number of leading universities. That said, it is hard to look at the graph below and conclude that Berkeley should shift 20-25% of its ladder-rank FTEs away from its professional schools if it seeks to maintain comprehensive excellence.
Figure 1: Comparison of ladder-rank faculty distribution across Berkeley and Harvard

Doesn't include School of Medicine with its 270 ladder-rank FTE
GOVERNANCE: WHERE WE ARE GOING

Participation in Design of New Financial Model

Many of the governance challenges can be fixed by implementing a system of clear financial incentives. The campus is embarking on a large-scale academic restructuring exercise and has invited the professional school deans to not only propose new structures and realignments among the schools but to also propose incentive structures that would enable us to improve our educational programs, increase revenue, and reduce costs. This presents a real opportunity to shift the direction of the campus - if and only if the vital role of professional schools is recognized.

Management Summary

| Strengths | ● There is active and collaborative faculty leadership in the 7 academic divisions and 4 associate dean positions.  
|          | ● Significant improvement in the School’s central administrative functions has been made, particularly in the areas of finance and fundraising. |
| Challenges | ● Stabilization after a period of unrest due to budget cuts and the move to Campus Shared Services is still in process. |
| Where We are Going | ● We will improve central School administrative services, service to faculty, and the student experience while finding additional ways to reduce administrative costs. |

MANAGEMENT: WHERE WE ARE

Academic Leadership

The School has strong faculty participation in leadership positions in the School. The seven academic division heads along with the four associate deans play an important leadership role in the education, research, and service missions of the School.

Each member of the leadership team has made significant contributions to the implementation of our strategic plan and will remain an important force going forward.
Administrative Leadership

Over the past year, the School has successfully recruited four new assistant deans into the areas of finance, operations, student services, and external relations. Each assistant dean brings a strong functional and academic background to the School.

The four assistant deans bring essential skills to the School:

- David DeClercq, Assistant Dean of Finance & CFO (a new position) has made exceptional progress in cleaning up our finances. See finance section below.
- Shederick McClendon, Assistant Dean of Students, is currently restructuring student services staff to improve service delivery and also to encourage greater harmonization and integration among programs.
- Priya Mehta, Assistant Dean of Strategic Planning, External Relations, and Development, has strengthened the development team by adding two major gifts officers. The team has made significant progress finalizing the School’s Strategic Plan (see Appendix 1), developing an implementation and monitoring plan for the strategy, and cultivating a much more extensive group of donors (see Development below).
- Theresa Richmond, Assistant Dean for Operations & COO, has led the School through layoffs and restructuring after budget cuts in FY2016. She, along with David DeClercq, has led our integration efforts with Campus Shared Services and also helped to stabilize HR and APO processes.

Due to their combined efforts and leadership in each area, the School has successfully reorganized its administrative operation into a much more rational, metrics-driven, and student- and faculty-friendly environment. However, many of those changes have not been fully realized or stabilized, as discussed below.

Continuing financial pressure may force further reorganization; however, the School will now face this challenge from a much stronger position, particularly with respect to understanding the financial implications of different options.

Each division and research center is staffed with seasoned professionals who provide high levels of service to their faculty directors.

Internal Operations

After a significant reorganization due to resignations, layoffs, and budget cuts, the internal administrative operations have not yet stabilized.
The academic personnel office continues to struggle to meet its workload resulting in delayed merits, promotions, and hiring. The shortfall in this area is the single greatest challenge the School faces in stabilizing its internal operation and service delivery. To support this function, the School has decided to invest additional resources to add capacity and accelerate its path towards stability.

Other areas, such as communications, facilities, and student services continue to struggle given that these areas were most impacted by the latest reorganization. Minor staffing adjustments and time are required for stability.

Figure 2: School of Public Health employee FTEs (2005-2015)

The impact of the 2008 budget crisis can be seen in the drop in 2010 employment. However, the year-on-year reductions in total School FTEs since 2011 in the face of rising research funding and rising graduate and undergraduate student enrollments is a more concerning trend. Workload and stress can only be increased so far before they
take their toll in reduced faculty and staff retention and on the quality of research and education.

**External Operations**

Campus Shared Services (CSS) has not yet delivered an acceptable level of service, particularly in the area of post-award support, and there is no clear path forward to correct this deficiency.

In September 2015, the School conducted a survey on CSS service delivery. The results showed improvement or stability in information technology and business services, mixed performance in human resources, and very poor performance in research administration.

In response to the study, the School, in partnership with mid-level CSS research administration leaders, developed and implemented various solutions to improve the overall financial management experience for both the administrator and principal investigator. Early results were positive; however, the mid-level partners have just been laid off. The reduction in staff has stalled all gains and in fact led to a resource drain away from the School, even though the School received assurances no such action would be taken. The processes to improve service delivery have been placed on hold as CSS evaluates how to reorganize its operation to serve the School.

Late in 2015, the School was supported by 15 research administrators. By early 2016, the number was reduced by a third to 10. The School appreciates the financial constraints faced by CSS, but we are puzzled by the lack of support for faculty who generate resources for the University. We have responded by increasing staffing within the School temporarily, but this is not sustainable. We will have to consider alternatives.

The human resources team offers sparse and rudimentary support. This support appears to be by design and not a reflection of those offering the service. The School will have to reinvest resources in human resources if service is not expanded and improved.

**MANAGEMENT: WHERE WE ARE GOING**

**Internal Operations**

With budget pressure expected to continue, the School will have to find ways to reduce the cost of administrative services while at the same time protecting service levels. The reorganization completed in 2015 helped to establish an administrative baseline. From this baseline, the School can make more informed and rational decisions on how future reductions will impact service delivery.
External Operations

The School will continue to work with CSS to improve service quality and responsiveness to the need of the School. The School plans to implement a more direct performance feedback process, both positive and negative, for those central staff who directly interact with the School. The School had been waiting for CSS to implement feedback systems; however, the School can no longer wait and will move ahead to ensure that great service is recognized and poor service is documented.

Facilities Summary

<table>
<thead>
<tr>
<th>Strengths</th>
<th>• The School, although currently spread over several locations, operates cutting-edge laboratory spaces, a high-power computer cluster for “big data” projects, and a dedicated library.</th>
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<tbody>
<tr>
<td>Challenges</td>
<td>• The School is distributed across several buildings and as a result has no single “home.”</td>
</tr>
<tr>
<td>Where We are Going</td>
<td>• The University broke ground on the School’s new home, the Berkeley Way West building, in late 2015.</td>
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</tbody>
</table>

FACILITIES: WHERE WE ARE NOW

In 2008, the University began work to replace the seismically unsafe Warren Hall. Warren Hall had been the home of the School since the building’s opening in 1955.

From 2008 to the present, the School has not had one physical home on campus. The School maintains faculty, student, and staff space in seven different buildings on campus and eight different locations in the Berkeley area, and it has research, service, and graduate student mentorship space in Salinas, Sacramento, and Washington, DC.

Part of the physical footprint includes several high-tech wet and dry laboratory spaces, a dedicated public health library, computer labs, computerized classrooms, and a High Performance Computing Cluster accessible by faculty and students for “big data” computing projects.
**FACILITIES: WHERE WE ARE GOING**

In late 2015, the University broke ground on the new home for the School at the corner of Hearst and Shattuck Streets in downtown Berkeley. The new building will encompass approximately 320,000 square feet and house the School of Public Health and also the School of Education and the Department of Psychology.

When the building opens in December 2017, the School plans to bring most of the faculty, students, and staff into the new building. Wet-lab-based faculty will remain on the main campus. Some other research and service projects may not move to the new building if we are unable to raise sufficient funds to occupy a larger proportion of the building by the end of this year. However, the new building will certainly become our home and will house all of our student services and the great majority of our faculty and student researchers. It will have beautiful public spaces and student lounges designed to increase informal interaction and collaboration within and across the Schools and the Department of Psychology.

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<tr>
<th>Finance Summary</th>
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<tr>
<td><strong>Strengths</strong></td>
</tr>
<tr>
<td>• The School has built a strong finance team to improve and stabilize all financial management processes.</td>
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<tr>
<td>• The School has adequate resources to fulfill its mission and goals, and to meets its instruction, research, and service obligations.</td>
</tr>
<tr>
<td><strong>Challenges</strong></td>
</tr>
<tr>
<td>• Continued decline in state funding, along with capped tuition rates, and increased competition in the online space threaten the long-term financial resources of the School.</td>
</tr>
<tr>
<td>• We face significant financial headwinds and substantial reductions in campus support for FY2016-17.</td>
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<tr>
<td><strong>Where We are Going</strong></td>
</tr>
<tr>
<td>• We will create revenue growth through innovative online and executive education.</td>
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<tr>
<td>• The School is improving analytics to measure the choices embedded in different academic decisions to better quantify the financial contributions made by academic programs.</td>
</tr>
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</table>
Internal Organization & Financial Management

The School has reorganized the finance team in order to provide better oversight and financial control. During AY15, the School increased the finance team staffing from two senior financial analysts to five staff members: a CFO, an organizational consultant, and one senior and two junior analysts. Each financial analyst supports a portfolio of clients across administration, academic, and research operations. The organizational consultant has worked to redesign and implement best-practice procurement processes, accounts receivable, and budgetary approval and control processes.

The reorganization and increased focus on financial management contributed to the School’s completion of its first-ever all-funds budget for FY15 and FY16. During AY16, the School took aggressive steps to plan and forecast financial results to the lowest level in the ledger to drive accountability of financial results back to the budget owner.

All of the reorganization, redesign, and financial management work has given the School and its leadership visibility into current and future fund balances and mechanisms to understand the potential tradeoffs of different decisions. Because of this work, the School can be relatively certain that it has adequate resources to fulfill its mission and goals, and to meets its instruction, research, and service obligations.

The team is now working to create financial analyses and projections for each of the School’s educational programs and central service functions. These analyses will be critically important to inform decisions about what savings might be associated with sunsetting or consolidating programs - and what revenues might be generated from expanding others.

Resource Summary

The following analysis provides more detail on the School’s financial condition.

Revenue has grown since 2014.

Tuition is collected by the campus. None of it is directly returned to the School, but it is an important source of campus revenue that funds faculty salaries and other support that the campus provides to the School. In the 2015-16 academic year, undergraduate tuition and fees, excluding health insurance, housing, and meal plans, totaled $13,431 for in-state students and $38,139 for out-of-state students. Graduate student tuition and fees were the same as undergraduate for in-state students and $28,533 for...
out-of-state students. The total tuition collected by the campus for our School’s students was approximately $12.5M this year.

MPH and DrPH students pay an additional supplemental tuition of $7,594, which is collected by the campus and is reflected as a line-item in the graph below. Professional tuition has grown more from higher tuition rates than increases in enrollment.

Figure 3: Revenue and transfers

The professional degree fee tuition increased by 5% for the 2015-16 school year, the maximum permitted by the UC system. The School plans to continue to raise tuition for the next several years to offset higher costs and to maintain financial aid.

Although professional tuition has increased, the sustained growth in URM student enrollment along with declining debt levels at graduation for the MPH and DrPH degrees suggests that professional degree fee increases are being offset by increased financial aid for URM students. (We were asked to monitor this in the last review.)

Self-supporting degree tuition reflects growth in the OOMPH program. The OOMPH program currently operates at a 12-16% net income margin. Sales and services revenue is in decline due to shrinking Wellness Letter print royalties. Gift revenue will exceed forecast due to an unplanned $10.9 million gift in FY16.
On the expenditure side, the projected increase is greater:

Compensation has increased since 2014:
- Academic salaries increased 4% in FY16 due to faculty recruitment and funded merits and promotions. (Not considering potential retirements, as those salary savings revert to the Campus.)
- Staff salaries remained largely unchanged in FY16. The School leveraged voluntary and non-voluntary workforce reductions in FY16 to reorganize the workforce. Layoffs were offset by new hiring to support students and mandatory 3% merit and equity adjustments.
- Fringe benefit costs increased 17% in FY16 and explain the overall increase in compensation expense.

Figure 4: Compensation expense

Non-compensation expenses are largely unchanged from FY15:
- Financial aid, including fee remission, continues to be the largest expense and will continue to grow as tuition and professional degree tuition increases.
- The increase in services reflects the campus shared services charge and also placeholder expenses for faculty start-up allowances.
- The $1.8 million increase from 2014 to 2015 is consistent with a multiyear trend where non-compensation expense oscillates from $7.5 million in one year to $9.0 million the next. Non-compensation has followed this pattern since FY12 and is
likely the result of fiscal close activity. The revised fiscal close processes implemented during FY15 appear to have ended this pattern as non-compensation has normalized to a more constant level.

Figure 5: Non-compensation expense

![Non-compensation expense chart]

The School saw a small deficit in non-contract and grant funds for FY16. The flattening of the revenue line reflects the impact of budget cuts relative to mandatory expense growth.
Most discretionary expenses are largely unchanged in FY16 (staff salary, S&E); however, non-discretionary expenses have mostly increased (fringe benefits, staff merit and equity increases, campus shared services tax, financial aid).

The overall fund balance declined from $16.7M in FY15 to $15.1M in FY16.

The decline in unrestricted funds is the result of the planned deficit due to the budget cut and also the repayment of OOMPH start-up expenses to the Berkeley Resource Center for Online Education. The operating transfer to repay debt explains the majority of this decline.

The projected growth in the restricted gift fund balance is mostly artificial, given that the FY16 plan did not fully utilize the “first-dollar” principle across the School. During the FY16 fiscal close, expenses will be moved from unrestricted funds to gift funds, where allowable.
The School's endowment continues to grow. In FY15 and FY16, the School has benefited from two large bequests: $14 million from the estate of Dr. Wallace and $10.9 million from the estate of Dr. Porter.

More than 50% of the endowment is used to support specific research activities, with the remaining share largely going to support financial aid. Very little of the endowment can be used by the dean for discretionary activity.
Contract and grant expenditures are stable in the current term. The School has approximately 200 active contracts and grants with an award value in excess of $230 million and an additional 185 proposals that are pending or under consideration with a potential award value in excess of $150 million.
Long-Term Resource Planning

Due to significant cuts in the State budget to the University of California, the funding received no longer has a direct relationship to instructional or other operating cost increases. The sustained period of contraction has significantly reduced the School’s general allocation in relationship to mandatory costs. In response, the School has reduced administrative support in order to protect the academic mission; however, if contraction continues or mandatory cost increases, such as fringe benefits, continue to go unfunded, the School may have to make difficult decisions that may shrink the academic offerings.

Given the demographics of the School’s faculty population, the School expects a $4.5 million reduction in funded academic salaries over the next 5 years, if retirements are not replaced by campus. The loss of 20-25% of our ladder-rank faculty will necessarily reduce our educational offerings unless offset by increases in other faculty lines. Unfortunately, campus support for non-ladder-rank teaching in the School is facing an even greater reduction over the same period, approximately 40%, under the current
funding model that links Temporary Academic Support only to undergraduate teaching and does not consider the unit’s ladder-rank faculty endowment.

The new model for Temporary Academic Support implies that the School must supplement undergraduate teaching costs by approximately $500k per year. Professional degree fee tuition from graduate students cannot be used to cross-subsidize undergraduates per UC policy.

All of these factors will challenge the School to meet curricular growth and innovation, especially in the undergraduate program. If retiring faculty are not replaced and Temporary Academic Support continues to contract, the School would need to raise an approximately $120 million unrestricted endowment to replace the core funding support lost from campus.

In late January 2016, the School learned that other campus support (apart from Temporary Academic Support and ladder-rank faculty salaries) will likely contract significantly for the next fiscal year. The School may face a 10-15% reduction in campus support from 2015 levels, based on a 2% assessment on restricted fund balances, a 2.5% reduction in total non-academic compensation expense, and the elimination of research-funded overhead return.

To meet the targeted 2.5% reduction in compensation from 2015 levels, the School would need to reduce salary expense by approximately $800k.

The extent of the cut is currently unknown, given that central campus has not yet communicated the final budget reduction target for the School or communicated what consideration may be given for the staff reductions that we already made in this fiscal year.

**Capped Professional Fee Growth**

In addition to Temporary Academic Support contraction, the School faces financial headwinds from the capped growth in professional degree fee tuition. It has been widely communicated, both officially and unofficially, that professional degree programs may not grow tuition at a rate higher than 5% per year and that even this level of growth may not persist beyond the near term.

Professional degree tuition helps to offset the cost of graduate and professional education; however, with mandatory costs rising at a rate higher than 5% of the professional fee, the School will face further constraints. Professional fee income last year was approximately $2.7 million, less than 10% of the School’s non-contract and
grant budget. Thus, a 5% increase in professional fees represents less than a 0.5% increase in the School’s non-contracts and grants budget.

**Online Competition**

The largest potential source of new revenue is from our online programs. As a “self-supporting degree,” the School captures 85% of the tuition from the program and is responsible for 100% of the expenses. The OOMPH program continues to make strong gains, both in terms of financial results and educational outcomes.

The School expects this growth to slow as the profitable market continues to attract new entrants into the online space. We are currently recruiting for a new director of our online programs who will replace our founding director, Dr. Nap Hosang, who will retire later this year. To strengthen our work in this space, we have also recently hired part-time Dr. Rishi Desai who until recently was responsible for health education for Kahn Academy.

The School expects online education to be our most important revenue driver for the foreseeable future even after outsized gains eventually recede to a lower equilibrium. One significant advantage we enjoy is that our program is highly rated, yet our price point is significantly lower than competing programs. Our tuition for the full online MPH program is $43k, while that of Johns Hopkins is $61k. However, their tuition reflects a $20k drop in the online tuition cost starting Jan 1, 2016, which was likely influenced by the increasingly competitive market for online public health programs.

**FINANCE: WHERE WE ARE GOING**

**Online and Executive Education Expansion**

Online education is our most important source of new revenue for the School. The School plans to offer a new Health Policy & Management concentration during next year and is developing programs in Epidemiology and in Global Health.

Recently, it was announced that within the decade, all registered dietitians must have a master’s degree to practice and this offers a new and potentially large market opportunity for an online version of our Public Health Nutrition program.

Executive education offered through residential and online courses are a potential source of new revenue that the School has only started to explore. The potential for translating our high-quality programming into materials suitable for professionals through executive education is an attractive opportunity.
Analytics

In addition to revenue growth, the School will deliver a better decision-support model to understand and project a truer cost of education that will enable us to make more informed decisions.

The interaction between temporary teaching faculty, ladder-rank teaching faculty, course offerings, and enrollment create an opportunity to make decisions to control cost without negatively affecting educational outcomes. The School has not had this analytical capability in the past and has relied on anecdotal information to make curricular and staffing decisions in the academic space. As described above, these analytics will help us make more rational decisions about possible elimination or consolidation of programs or services.

Structure and Funding Model

Given these new budgetary challenges, we will also need to consider alternatives to our current structure and funding model. One important way in which our school is different from most other schools of public health is that we have a solid firewall between hard-money and soft-money faculty. There is no expectation that hard-money faculty will raise any of their salary from contracts, grants, and gifts and, conversely, there is no salary assistance provided to soft-money faculty with the exception of being paid to teach one course a year for those who are otherwise fully funded to do research. Certainly one way that we could increase the size of the faculty would be to create incentives for and/or expectations that ladder-rank faculty raise a portion of their salary. Those funds could then be used to expand the non-ladder-rank faculty by providing some level of guaranteed funding, recruitment funds, bridging funds between grants, etc., that would allow us to recruit additional faculty to both teach and contribute to our collective research enterprise.

Structurally, we have fewer and fewer degrees of freedom. Last year, we eliminated 12 positions through voluntary and involuntary layoffs. This was accompanied by a major restructuring and consolidation of our student services staff. We are also in the process of strengthening our central services (academic personnel, communications and web support, HR, event planning, etc.) so that our divisions and centers will increasingly choose to purchase central services rather than inefficiently create parallel capacity - but it will take time to accomplish this transition. We don’t see additional opportunities to save money with additional layoffs in the near-term, but as these central functions improve their performance we may be able to use natural attrition to generate some additional savings in staff costs. In addition, we will explore the possibility of consolidating management and further increasing managerial span of control. This will
include the possibility of consolidating portfolios of associate and assistant deans and the possibility of consolidating administrative support to units in the School.

Finally, we have had the luxury of largely using philanthropic funds to fund “extras” rather than seeking philanthropic funds to cover core activities. We will have to look with a more skeptical eye at philanthropy that is 100% extra - especially if it requires some in-kind participation from the School, thus having a negative net impact on our core budget. We will need to look for opportunities for overlap, for ways in which philanthropically-funded activities can relieve rather than exacerbate core budgetary pressure.

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<tr>
<th>External Relations, Development, &amp; Communications Summary</th>
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<tr>
<td><strong>Strengths</strong></td>
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<tr>
<td>• Strategic alignment was improved by grouping strategy, fundraising, and communications functions.</td>
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<tr>
<td>• Greater capacity and leadership after filling vacant assistant dean position, hiring two major gift officers, and establishing close ties to central campus University Development and Alumni Relations unit (UDAR).</td>
</tr>
<tr>
<td>• Our Public Health Alumni Association Board is strong.</td>
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<tr>
<td>• We had strong fundraising performance in 2015-16 and a 10-fold increase in the number of major gifts of $50,000 or more over the past two years.</td>
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<tr>
<td><strong>Challenges</strong></td>
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<tr>
<td>• Budget constraints mean increased dependence on philanthropic support.</td>
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<td>• Of 8.5 FTE, only three have more than one year of tenure.</td>
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<tr>
<td><strong>Where We are Going</strong></td>
</tr>
<tr>
<td>• Revitalize the Policy Advisory Council to support strategy and fundraising.</td>
</tr>
<tr>
<td>• Prepare for “Fundraising 2.0” and the next Campaign for Berkeley.</td>
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<tr>
<td>• Fundraise for the new SPH building, currently under construction, so that it can accommodate all of the School.</td>
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<tr>
<td>• Consolidate the communications team with new director, web &amp; digital media specialist, and print production specialist.</td>
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EXTERNAL RELATIONS, DEVELOPMENT, AND COMMUNICATIONS:
WHERE WE ARE NOW

Management and Structure

The School’s Office of External Relations, Development, and Communications works to increase the level of interest in, engagement with, and generosity towards the School from all of its key constituencies - alumni, donors, students, parents, faculty, staff, volunteers, corporations, foundations, government, internship preceptors, and friends, including the community at large.

Assistant Dean Priya Mehta assumed leadership of this team in January 2015. At this time, the External Relations and Development team was expanded to include both Strategic Planning and Communications functions. This has increased strategic alignment of fundraising efforts and enabled communications to become a much more effective fundraising tool.

Prior to Assistant Dean Mehta’s arrival, both her position and the major gift officer position on the fundraising team had been vacant for more than a year. This lack of leadership and fundraising capacity presented a significant challenge to the School. To address this challenge, the team has in the past year hired two major gift officers who have already begun to substantially increase the volume and total value of gifts to the School. The team has also established close ties to the central University Development and Alumni Relations (UDAR) unit on campus, and is now working in close partnership with Corporate and Foundation Relations, Leadership Gifts, and Principal Gifts teams, as well almost daily with their prospect researcher. These changes have added significant capacity to the development team.

The communications team consists of 2.5 employees. The team was challenged over the past year due to schoolwide layoffs which affected the executive director of Communications. In the past year, the previous associate director, who has been with the School more than 9 years, has been promoted to director. We have also hired a web designer and are in the process of hiring a half-time publications production specialist for graphic support.
Out of 8.5 employees on the External Relations, Development, and Communications team, five have joined within the past year, and we are currently hiring for the 0.5FTE. With such a new team, there has been a significant learning curve to come up to speed on UC Berkeley fundraising guidelines and to establish working relationships with central fundraisers on campus.

Results and Highlights

Alumni Relations includes special events and activities that serve to expand the number of SPH alumni advocates in the community. The Alumni Relations function builds a strong, active, and loyal cadre of School of Public Health alumni and friends by working with the Public Health Alumni Association, building and strengthening personal and professional relationships among public health alumni, cultivating and engaging current students, and promoting mutual help and communication in the improvement of professional work. A variety of special events are organized to increase the School’s visibility and opportunities for gaining financial support.

Communications elevates and reinforces the value of the School to key audiences, including donors, alumni, and prospective students. We have built and maintained a robust platform of publications for the School, including an annual alumni magazine, a monthly e-newsletter to alumni and friends, the School’s website, student recruitment brochures, and social media. In the past year, we have also taken on internal communications, producing a biweekly e-newsletter for staff and faculty and developing internal resources pages on the website. And we’ve increased our events publicity and support work, including for the high profile Dean’s Speaker Series.

Fundraising activities encompass: (1) a robust annual giving program including direct mail, email, and telemarketing special campaigns such as the class gift campaign and the Big Give; (2) a major gift acquisition strategy that seeks to identify significant gifts to support endowed chairs, schoolwide priority programmatic initiatives, student support, the new building, and other priorities; (3) a planned giving component that includes managing anticipated bequests and cultivating planned giving prospects; and (4) donor acknowledgement and stewardship.

The School raised $12.1 million from philanthropic sources in FY12-13, $13.0 million in FY13-14, and $17.8 million in FY14-15, as illustrated in Figure 1 below. However, in FY14-15, a single bequest accounted for nearly $11M of the total funds raised. Excluding this single gift, the School raised only $7.5 million, a significant reduction in total dollars raised. This can be attributed to the vacant assistant dean and major gift officer functions for the majority of FY13-14 and 14-15.
Encouragingly, in FY15-16 we have already raised $26 million. This does not include a recently finalized gift of $1,000,000, nor an additional $10 million bequest from Dr. Robert Porter, which has not yet been recorded but will hit the books this year. This means the School has raised $37 million already this year, of which approximately $11 million is due to realized bequests, and approximately $17 million to a single grant from the Bill & Melinda Gates Foundation. As seen in Figure 1 below, even excluding these transactions, the School has (as of January 21) already raised $7.7 million in FY15-16, more than the total amount raised during FY14-15.

This analysis demonstrates that the investments in the assistant dean and major gift officer positions are beginning to yield results. This is also evidenced by the number of major individual donors giving more than $50,000, which increased from one in FY13-14 to three in FY14-15 to 11 so far in FY15-16.

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<td>Grant/SPO</td>
<td>$7,123,596</td>
<td>$9,178,396</td>
<td>$2,801,755</td>
<td>$19,750,260</td>
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<td>Gift/Pledge</td>
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<td>Realized Bequest</td>
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<td>Other</td>
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<td>$80</td>
<td>$112,500</td>
<td>$40,000</td>
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<tr>
<td>Total</td>
<td>$12,925,818</td>
<td>$13,719,306</td>
<td>$18,466,869</td>
<td>$26,025,576</td>
</tr>
</tbody>
</table>

| Total Less Exceptions| $12,855,818| $13,474,961.61| $7,508,919| $7,762,607  |
| Excluded in total above | *$70K bequest | *$244K bequest from Helen Wallace | *$11M bequest from Helen Wallace | *$17M grant from the Gates Foundation and $1.2M bequest from Helen Wallace |
These numbers exclude realized bequests that were committed in previous years. Two important bequests and some of the most important gifts recently secured by the team are highlighted below:

- $14M bequest from Helen Wallace to create the Wallace Center for Maternal and Child Health
- $10M bequest from Robert Porter, a 1940 Berkeley graduate, which will be used to create an unrestricted “Dean’s Strategy” endowed fund
- $3.5M over 3 years from UCB Trustee Coleman Fung to develop the Fung Fellowship, focused on the intersection of public health, technology, and wellness
- $1.125M over 3 years from alumna and UCB Trustee Kathy Kwan to support the Center for Health Leadership
- $1M from Steve Isaacs, CEO of Aduro Biotech, to launch the Alliance for Global Health and Science, a partnership with the Biological Sciences Division to build the scientific and public health research capacity in developing regions
- $500K over 5 years to fund the Bear GRADs Matching Fellowship opportunity (a $1M fully funded doctoral fellowship) from Policy Advisory Council Chair Dick Levy, PAC member Molly Efrusy, and alumna Michelle Schwartz
- $500K over 5 years from UCB Trustee Amy Brakeman to support development of global health online educational offerings
- $90K from UCB Trustee Amelia Kaymen to support the School’s adolescent health initiative I4Y
- $50K from Leonard Schaeffer to support undergraduate internships in government
- $50K from Joint Medical Program alumni Winston Wong, for the establishment of the JMP Diversity Fund
- Proposal under consideration by UCB Trustee Susan Chamberlin to support a Center for Teaching Excellence

**Increasing Dependence on Philanthropic Support**

In the current budget context, the School is increasingly dependent on philanthropic support, both to support faculty positions and student support, as well as to jumpstart the research initiatives prioritized in the 2015-2020 Strategy.
EXTERNAL RELATIONS, DEVELOPMENT, AND COMMUNICATIONS: WHERE WE ARE GOING

Policy Advisory Council

A key resource in expanding the philanthropic footprint of the School of Public Health is the Policy Advisory Council (PAC), a non-governing board of advisors who support the school with both their time and resources. The PAC has been challenged in terms of engagement and fundraising success in recent years, something we strive to change as we move forward.

Over the past 6 months we have recruited three new PAC members. Just this past month we recruited a new Chair for our Advisory Council – Dick Levy, the former CEO of Varian Medical Systems and Chairman of the Board of Sutter Health. He will add significant credibility to our efforts as we seek to refocus and grow the PAC. Over the coming 1-2 years we plan to add an additional 10-15 members, engage the PAC more directly in our programmatic development, and significantly increase its philanthropic support of the School. We have already taken steps in this direction - to increase engagement of the Council with our programmatic efforts, and to foster direct engagement with faculty, we recently created five subcommittees that will support the implementation of the School’s strategic plan in the areas of educational innovation, community health, global health, and technology/data science.

Fundraising 2.0 and the Next Campaign for Berkeley

In 2018, the University will launch the public phase of the next Campaign for Berkeley. In preparation, the campus is investing in training for fundraisers and developing a new relationship management database tools. In addition, the fundraising model for the campus more broadly is changing in significant ways. Coined “fundraising 2.0,” an important aspect of the new model will be assigned relationship managers for prospects with significant giving capacity. Another is the creation of a high-level committee that will vet all major fundraising proposals over $10 million, particularly those that involve multiple units across campus. The School is actively participating in discussions about how best to implement these changes.

In planning for the next Campaign, the School has important work to do. We will work with our Policy Advisory Council to identify a Campaign Steering Committee of external champions. We are actively prospecting and hope to add 100-150 new prospects to our portfolio over the coming 1-2 years. As we move forward, it will also be important to determine the what additional investments are warranted to meet our campaign goals – for example, should the team hire additional major gift officers and what would the return on that investment be?
New Building Campaign

In December 2015, the groundbreaking occurred for our new building, expected to open in December 2017. This is a major fundraising priority for the team. Given that the building will house the School of Public Health as well as the College of Education and the Department of Psychology, the three units are working together to jointly develop marketing materials and a major gift strategy for the building naming opportunities. A major groundbreaking event is planned for May 2016.

Alumni Relations

While we have a very engaged Alumni Association Board, we have a relatively large base of disconnected alumni. We aim to find creative ways to connect with these alumni and engage them in support of the School’s mission. One way of doing this will be through events. In particular, the School has this year launched a Dean’s Speaker Series, which has brought high-profile leaders in public health (such as Sir Michael Marmot PhD ’75 and Dr. Camara Jones) to campus. This has been extremely successful in engaging alumni. The team has also leveraged these events to host fundraising receptions and intimate dinners with the guest of honor, engaging our Dean’s Circle donors (of $1000 or more on an annual basis) and major donor prospects. The alumni will likely also continue to participate in established programs to increase interaction with students such as the Career Cafe, spring visit day, and happy hours to be held in spring 2016. Finally, to capitalize on the dean’s travel schedule, we will continue to organize regional alumni group meetings in locations such as Seattle, Los Angeles, New York, Boston, and Washington, D.C.

In addition, the School has now begun working closely with the leadership of the Alumni Association Board. The Board coordinates an annual scholarship competition, which will provide 50 scholarships for 2016-2017. We are also working with the Board to identify ways to map networks and alumni in different sectors and strengthen our alumni communications platform.

Going forward, we aspire to develop more targeted alumni engagement approaches. As a school with numerous disparate areas of study, it may be more effective to engage alumni on the basis of their program affiliation or to create communities of practice in different sectors.

Communications

While we are working from a position of strength with a strong brand and many communications tools at our disposal, increased responsibility and decreased staffing have taken a toll on our ability to meet deadlines and accomplish needed longer-term projects. The School’s website in particular is not where it needs to be in terms of
integration of our subunits and ability to efficiently update and improve. The School is also very decentralized for its size, which makes it difficult to both uncover vital information and to extend branding and other efforts through our programs and centers.

Looking forward, we plan to continue to improve internal communications, particularly in the area of research. We will offer branded templates and toolkits for staff and faculty and increase web training for key content providers. We have recently developed useful communications guidelines for the Alumni Association Board and will continue to work with the Board to better connect to our larger alumni community. We also seek to provide more consistent support for the development team and strategic initiatives through storytelling in support of fundraising and improved giving pages online.
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Dear Friends and Colleagues, past, present, and future:

I’m excited to be able to share with you the UC Berkeley School of Public Health’s new strategic plan. A year ago, when we began this process, we knew we wanted to build on our existing strengths. Ours is a relatively small, responsive school of public health with a history of accomplishing big things. Our location in the Bay Area, adjacent to Silicon Valley, and our position in California, on the Pacific Rim and sharing a border with Mexico, give us both the mandate and the opportunity to embrace diversity, champion social justice, and innovate for health, locally and globally.

At the same time, we wanted to identify ways we could adapt to meet new challenges in public health as they arise. I believe our education can be even more innovative, our research more impactful through radical collaboration in key areas, and our community partnerships can be deepened and strengthened.

During the planning process, we made sure to adhere to the values we were developing. After a lot of hard work, the result was a plan that reaffirms many of our values, and reshapes others. We will invest in our historical strengths and advantages, and apply positive disruption to our core missions of education, research, and service.

In education, our mission is to develop future public health leaders who can adapt in a rapidly changing world to transform the health of our communities. We seek to give them the knowledge and skills they need to succeed—this requires us to provide richer educational experiences for our students, in and out of the classroom. We will conduct a full review of our current curriculum,
optimize our use of educational technology, and increase our students’ access to hands-on, practical experience. We will create a new division to support curricular innovation, which will house our interdisciplinary programs, including the On-Campus/Online MPH, the UC Berkeley-UCSF Joint Medical Program, the Center for Public Health Practice, and others. And we will expand our online course offerings in order to reach more students worldwide.

In **research**, we remain committed to supporting our investigator-driven research and to conducting research to achieve health equity and improve health outcomes in disadvantaged populations. To do this we must continue to increase diversity in our faculty, students, and staff. I'd also like to see our school make some big bets in a few key areas where we have the foundation and partnerships to make a major impact. These include big data and technology, global population health, nutrition and obesity, children and environmental health, demography, and adolescent health. As a school of public health situated on a world-class letters and sciences campus, we have unparalleled access to preeminent partners in key disciplines—including engineering and computer science, business, law, public policy, and journalism. We also benefit from our close partnership with UCSF, a campus entirely dedicated to medicine and health sciences. I look forward to strengthening existing partnerships and building new ones, across the Berkeley campus and across the Bay, in order to increase the impact of our collaborative research.

In **community partnerships**, our goal has always been to disrupt systemic threats and eliminate inequities in order to build healthy populations. The School has a legacy of community-based participatory research that has changed and saved lives. Our work has also led to transformative policy changes—locally and globally. We want to take this engagement even further by developing community studios based on best practices in academic-community collaboration, which will embed students and faculty into communities for mutual benefit. The Bay Area community will be our first priority, but we will also expand our global reach. One example of an opportunity for community partnership is the planned Berkeley Global Campus at Richmond Bay. While the campus will have an international focus, our school is also committed to partnering with the City of Richmond, where health disparities continue to pose a major challenge.

I hope that reading through the pages that follow will engage and excite you as to the possibilities for the future of our school and the impact we can have on the public health threats of today and tomorrow. I expect you to hold me directly accountable for ensuring that we implement the strategy and realize real impact. If these plans spark thoughts about how we can improve our approach, I invite you to share them with me. This should be a living document that evolves over time.

Our plans may seem ambitious, because they are. In addition to committed and sustained effort, success will require targeted investments of resources, increased donor funding, and new members on the team. With your support and participation, I believe we are more than up to the challenge.

Sincerely,

Stefano M. Bertozzi MD, PhD
Dean and Professor of Health Policy and Management
CONTEXT
The ever-changing face of public health

The public health challenges society faces are constantly changing and, as a consequence, the field of public health needs to be dynamic enough to evolve with those changes and meet new challenges as they arise.

The past few decades have seen a dramatic increase in the pace of change in public health. The world is increasingly interconnected, and the lines between local and global concerns have become fundamentally blurred. We are faced with new public health challenges caused by climate change and our reliance on fossil fuels. We are burdened by a growing and rapidly aging global population, complex and costly health care systems, and a collective failure to share health advances equitably. Our increasingly diverse communities are challenged by epidemics of obesity and preventable chronic disease and injury, emerging infections, violence, and unsafe environments.

At the same time, our ability to understand how health is changing, what influences it, and how we can best affect it is improving at an ever-increasing rate. When one of our 24-year-old students was born, the first SMS message had not yet been sent. Comparatively, in 2014, the mobile industry shipped 1.3 billion smartphones, connecting over 50 percent of people on the planet. The world has also produced more data in the last three years than in all of prior history. Electronic medical records are already a $20 billion industry, and the convergence of accelerating data generation and massive leaps in analytic capabilities hold the promise of transforming big data into big health impact. Similar changes have happened in biotechnology. Our 24-year-old student was
10 when the world’s largest-ever biomedical collaboration produced the first human genome. Today, we can sequence one for little more than the cost of a smartphone, and we can begin to speak of understanding the genomes of populations.

Place-based health solutions are addressing inequities and building healthier communities. Advances in health coverage and delivery models are transforming health access, quality and outcomes. Innovative policies have seen health coverage expand to populations previously unable to afford coverage and have begun to address broader health concerns around nutrition and obesity. Approaches to integrated care and preventative medicine have also significantly shifted thinking around health care insurance, focusing on keeping people healthy, rather than treating those ill.

However, inequities in health status continue to grow. At the University of California, Berkeley School of Public Health, as we reflect on these changes, we are committed to preparing our students and faculty to anticipate and respond to challenges in a world fundamentally different from just 10 or 20 years ago. How can we best confront new challenges and take advantage of new opportunities?

To answer this question, we entered into a highly collaborative review and planning process that engaged with hundreds of people to help us understand how to bring the most advanced research, education and community solutions to disrupt the field of public health. This process is further detailed in the Appendix.
Our unique advantages

This strategic plan reinvests in significant advantages the School has built over the past 70 years; its geography at the center of the San Francisco Bay Area; and its position at the nexus of a tremendous international network of partnerships with communities, academic institutions, industry, and policy makers. Our planning process uncovered unique strengths that position us to achieve maximum population health impact in California, nationally, and globally.

OUR LOCAL PRESENCE adjacent to Silicon Valley and national centers of innovation puts us at the epicenter of advances in biotechnology, digital health, and big data. The Bay Area is also at the forefront of innovations in integrated health delivery, healthy communities, and health policies or health coverage.

OUR GEOGRAPHY in the largest, fastest growing, and most diverse state in the United States, on the Pacific Rim, and sharing a border with Mexico (with whom we share many demographic and epidemiological characteristics) provides a strong platform from which to strengthen our work locally and globally, and from which to expand to include the economic powerhouses across the Pacific.
OUR BROADER BERKELEY CAMPUS AND THE UC SYSTEM allow access to leading-edge collaborators in key disciplines including engineering, computer science, social sciences, public policy, journalism, international development, business, law, and beyond. As part of the UC system we have access to unequaled capacity and networks; specifically our close partnership with UCSF joins us with a world-class medical campus.

MORE THAN 70 YEARS as one of the nation’s preeminent academic institutions in the field of public health, on a campus with a legacy and commitment to social justice, provides a unique position to lead change. We are highly regarded for the quality of our faculty and students and have a reputation for excellence in education, research, and community engagement. Our graduates are transformational health leaders across all health sectors, with a legacy of impact and innovation locally, nationally, and globally.

As we plan for the future of our school, we will carve a path forward that ensures that our public health school of today is prepared to address the public health threats of today and tomorrow, by investing in three foundations across the School, and three disruptions to the public health status quo.
UC BERKELEY SCHOOL OF PUBLIC HEALTH STRATEGY

DISRUPTIVE EDUCATION

DIVERSITY

DISRUPTIVE RESEARCH

TECHNOLOGY

DISRUPTIVE COMMUNITY

RADICAL COLLABORATION
OUR VISION & MISSION

Healthy People, Locally and Globally

We improve population health, especially for the most vulnerable, through:

- Radical collaborations to meet priority health needs and achieve health equity in our increasingly diverse communities
- Preeminent education that challenges convention and develops diverse leaders who transform the health of our communities
- Transformational research on the major public health threats and opportunities of today and tomorrow
FOUNDATIONS

The major, cross-cutting underpinnings of our work

DIVERSITY

We will bolster our longstanding commitment to diversity, equity, and inclusion as pathways to excellence at all levels of the School, via recruiting, mentoring, and inclusively engaging with diverse populations of students, faculty, staff, and community partners.

TECHNOLOGY

We will invest in technology solutions across our education, research, and community engagement, expanding our ability to train the next generation of public health leaders, developing new research paradigms, and accelerating our impact in the communities we support.

RADICAL COLLABORATION

We will make fundamental shifts in the way we engage with partners across the UC Berkeley campus and across the world, fostering collective research efforts and partnerships that reflect the complexity of public health challenges and the diversity of resources required to build systemic solutions.
Disruption in this context builds on the idea of “disruptive innovation” coined by Clayton Christensen of Harvard Business School. For us, disruption means a way to shake up the status quo, not only in the way we work, but in the impact we have.

DISRUPTIONS

The change we want to see in the world

DISRUPTIVE EDUCATION

We will prepare future public health leaders, on campus and virtually, with the knowledge and skills necessary to adapt in a rapidly changing world. We will employ innovative and hands-on approaches to education inside and outside the classroom and work closely with alumni, partners, and employers to ensure students are gaining the skills they need to succeed in the communities, companies, and other organizations they work in.

DISRUPTIVE RESEARCH

We will fundamentally change approaches to increasingly complex health threats and opportunities of tomorrow by fostering innovative disruptive research in key areas. This requires radical collaboration between diverse disciplines and institutions as well as between basic research, translational research, implementation research, education, and action.

DISRUPTIVE COMMUNITY

We will deeply engage with communities working to disrupt systemic health threats and inequalities, partnering with them on the path to healthy populations. Collective School of Public Health engagement with selected communities in the Bay Area and beyond will sharpen research, enhance students’ educational experience, and have a transformative impact on population health.
VALUES
Guiding principles and culture

Health as a Right
We believe in social justice and the basic human right to a healthy life. We strive to reduce or eliminate inequity and injustice that affects the health and dignity of all people, especially those who are most vulnerable. We live a shared commitment to equity among our faculty, students, and staff.

Strength Through Diversity
We embrace diversity in our education, research, and service. It’s the right thing to do and the best strategy for successfully engaging and transforming the communities we care about.
Think Forward
We innovate and train our students to lead innovation. We build a culture that challenges conventional thinking, leverages technology, and builds bridges between basic research, translational research, implementation research, public policy, education, and action.

Impact First
We demonstrate our commitment to maximum population health impact by focusing our research, education, and service efforts in areas with the potential to have transformative impact on the health of populations locally and globally.
INVESTING IN FOUNDATIONS

The strategic plan doubles down on investments in a set of the School’s historical strengths and natural comparative advantages.

As the cornerstones from which we will approach all of our work, these investments in the School’s Foundations—Diversity, Technology, and Radical Collaboration—will guide all of our educational, research and community engagement pursuits. We will constantly seek to understand and design our work through these three lenses.

DIVERSITY

Our key focus for diversity is to get into our ranks undergraduates, graduate students, faculty, and staff who represent, understand, and are committed to the communities we serve.

We believe deeply in the need to address health inequities. We are leaders in promoting and respecting diversity, equity, and inclusion in our education, research, and community engagement, within the School and in our partnerships with individuals, communities, and practitioners.
We define diversity broadly as encompassing race, ethnicity, gender, socioeconomic status, sexual orientation, national origin, age, religion, language and physical abilities/disabilities, human rights, and social justice.

We believe that by building on our longstanding commitment to diversity, equity, and inclusion, we improve our effectiveness and ability to be sustainably transformative in addressing the health needs of diverse populations in California and around the world.

Our historical efforts to promote equity and inclusion have led to substantial progress in our drive to achieve compositional diversity that reflects the diverse population of our state. To build upon this, our future activities will focus on building school culture, climate, and practices that embrace diversity more broadly as a pathway to excellence and preparation of effective public health professionals and leaders.

Throughout our education, research, and community engagement, our diversity, equity, and inclusion goals will ensure that diversity remains a priority that is recognized as a pathway to excellence for all members of the School’s community, and at all levels of the School, by the following means:

STUDENTS
We will recruit students, staff, and faculty who represent, understand and are committed to the communities we serve and provide them with the opportunities to lead and show us how to sustainably transform those communities.

FACULTY
We will expand the diversity of our current faculty through both intensified recruitment of underrepresented minority faculty and ensuring racial/ethnic/gender equity in promotion and compensation.
PARTNERS
We will invest in community, industry, and academic partnerships that reflect the diversity of the communities we work in and the challenges we are working to solve. Diversity is a core foundation in everything we do. This will help us achieve our goal of ensuring that graduates become world-class public health practitioners and scholars in a diverse world.

TECHNOLOGY
Technology is a core element of our disruption strategy.

The School of Public Health sees investments in technology as a critical priority across all of its education, research, and community engagement. Investments in technology help us expand the number of students we turn into public health leaders, the breadth and depth of our research, our ability to effect change in the community, and increase the speed and efficiency of our work.

The School’s recent investment in online educational resources has dramatically expanded the number of students we reach with a high quality educational experience. In addition, deepened partnerships with organizations such as the Center for Information Technology Research in the Interest of Society (CITRIS) have broadened avenues for collaboration on technology solutions to public health challenges.

As we continue to prioritize our investments in technology, we see tremendous potential through technology adoption in the following areas:

EDTECH
We will seek to find, develop, and use the latest pedagogical technologies, tools, and techniques to ensure the best possible learning experience for our students. We will also leverage these tools to expand and scale innovations in continuing education, professional development, and networking for alumni, partners, and professionals locally and globally.
PUBLIC HEALTH TECH
We will create and engage with leading-edge and emergent public health technology as a central component of innovative research agendas searching for high impact positive disruption.

TRANSLATIONAL TECHNOLOGY
We will seek to use technology and the latest communications and information tools in order to help communities improve performance, unlock results, track impact, and drive change.

RADICAL COLLABORATION
Effective public health is fundamentally about good collaboration. Bringing that insight into everything we do will allow us to move from ideas to impacts.

We will be able to discover and implement powerful new ways to tackle the health threats facing our local and global communities by relying on creative transdisciplinary approaches; innovative, sustainable partnerships; and meaningful community engagement. We will bring a radically collaborative approach to the vital work of maximizing population health.

This is a foundational strategy across our education, research, and service pursuits. We believe in bringing a broad range of universities, schools, and departments together to provide a comprehensive educational experience for our students. A similar mentality applies to how our faculty will work across communities and across the world, in pursuit of new solutions for the world's most pressing public health challenges. Finally, within the communities in which we work, we will be persistent in working closer with a broader range of individuals and organizations in support of those communities' public health needs.

To make sure the School is positioned to lead and support these collaborations, we will focus on two fundamental activities that are the foundation for any successful collaboration:

ENROLLING VISIONS
Whether in the community or in the classroom, we benefit from convening stakeholders to define a vision for the future, giving partners a common goal that guides the partnership and its activities.

INFRASTRUCTURE
We will make sure the School has the appropriate administrative infrastructure to identify, incentivize, streamline, and support a broad range of collaborations, whether across the School, the campus, with UCSF and others in the UC system, with our industry partners, or in the communities where we work.
“We’re training our students for a world we can’t predict. This means we need to give them educational experiences that not only make them subject matter experts, but also able to lead us through uncertain futures.”

Shederick A. McClendon MPH
Assistant Dean, Student Services

POSITIVE DISRUPTIONS

The School of Public Health recognizes that to adapt quickly to solve significant public health challenges, we need to stimulate positive disruptions in education, research, and our community engagement. To build on the School’s traditional strengths, including world-class education, cross-disciplinary investigator-initiated research, and engagement with local and global communities, we are investing in disruptive approaches to how public health challenges are solved. To lead these disruptions, we see the School collaborating differently with our partners across UC Berkeley and the public health field, applying advances in technology to public health, and increasing the representation of students and faculty from the communities we work in. Each disruption is intended to focus the School on select initiatives that achieve transformative impact in communities, encourage research across systems for better solutions, and provide meaningful educational experiences at greater scale.
DISRUPTIVE EDUCATION

We need to provide deeper and broader educational experiences to more students. The School’s educational mission is to provide preeminent education that challenges convention and develops diverse leaders who transform the health of our communities. These public health leaders need to be able to work across academia, communities, industry, and government, to identify transdisciplinary solutions to local and global challenges. To disrupt the traditional way public health leaders are educated, we implement leading-edge, innovative approaches to education, both inside and outside the classroom, ensuring that students have the skills necessary to be leaders in a rapidly changing world, by:

CREATING T-SHAPED LEADERS

We build cadres of leaders who combine deep expertise and knowledge, with an ability to engage a broad array of stakeholders to creatively adapt the knowledge and skills they have gained to understand and solve complex public health challenges.

The concept of the T-shaped leader emerged from engineering disciplines where vertical depth in a given discipline was seen to lead to narrow vision where it wasn’t complemented by a horizontal breadth of knowledge. This horizontality, as exemplified by leaders ranging from Steve Jobs to Thomas Edison, was prized as a core skill in employees who would be able to bring ideas and new relationships into their work from adjacent fields and interests.
EDUCATING AT SCALE
We work across the School and UC Berkeley, and in partnership with top schools domestically and internationally, we provide richer educational experiences for our students on campus and engage many more students locally, nationally, and globally through our technology investments.

ADVANCING COMPETENCY DRIVEN EDUCATION
To develop and deliver the most advanced training in the competencies students need to be effective in the health workplaces and communities they want to serve, we create flexibility for students to more effectively build on the knowledge and experience they bring to the program, and educate for and measure a student's mastery of essential public health competencies and capabilities.

The disruptive education strategies and objectives presented here build on significant strengths at the School of Public Health, including a broad set of professional and academic degree programs, recent innovations in online education and educational technology, strong leadership and professional development programs, and innovative courses that provide opportunities for hands-on learning in transdisciplinary teams. They challenge the School to continue to innovate and collaborate better within the School, across the University, with communities, and with employers.

DIVERSITY

Strategy 1:
DIVERSIFY GRADUATES AND UNDERGRADUATES
We will increase the diversity of our graduate and undergraduate public health students to more closely reflect population diversity and enhance the experience and success of all subgroups within the School. Critical mechanisms to diversify our study body include:
ROADMAPS TO SUCCESS
We will deepen our investment in providing comprehensive academic, career, and community support systems for undergraduate and graduate students from underrepresented minority and disadvantaged backgrounds. Programs that acknowledge and address the real-world challenges unique to this set of students can best develop their leadership potential and support them in having the greatest impact on population health.

INVEST IN DIVERSITY PIPELINES
We will strengthen the pipeline and increase the pool of qualified applicants from underrepresented and disadvantaged backgrounds.

INCLUSIVE CURRICULUM
We will reenvision the School’s curriculum to fully integrate issues of diversity, equity, and inclusion.

TECHNOLOGY

Strategy 2: CURRICULUM LAB
Technology has fundamentally altered the ways in which we learn. We’ll disrupt the traditional “informative” educational model, which focused on transmission of knowledge, to create a “transformative” model that develops competencies to support critical reasoning and adaptation of solutions to meet local needs.

REFRESH CURRENT CURRICULUM
Based on a thorough curriculum review, we will revitalize our curriculum to ensure our program structure, course content, pedagogical methods, and out-of-class experiences address today’s major public health challenges.

CLASSROOM TECHNOLOGY
We will optimize the use of educational technology tools (e.g., flipped classroom, technology in the classroom, intercampus courses) for all public health students.

TECHNOLOGY-FOCUSED CURRICULUM
We will prototype and test courses related to technology-focused public health interventions, with key partners on and off campus.

CURRICULUM INNOVATION CENTER
We will create a new division to support curricular innovation across the School and house the School’s cross-cutting educational programs (On-Campus/Online Professional MPH Degree Program, Interdisciplinary MPH Program, Joint Medical Program, joint and concurrent programs, DrPH Program, the undergraduate major, and the Center for Public Health Practice).

THE ONLINE LEARNING BUSINESS CASE
We will develop a plan to maximize benefits from online courses, including revenue generation, enhanced reputation, and expanded pool of potential students.
CHALLENGE-FOCUSED CURRICULA
We will prototype and test courses using case-based curricula that promote critical thinking and problem-solving skills based on problems that need to be solved.

FIELD-BASED COURSES
We will increase students’ educational experiences working with community partners, giving them practical experiences in solving critical public health challenges.

Strategy 3:
KEEP EDUCATING THE FIELD
We will expand continuing education programs to offer lifelong learning to our alumni, build partner capacity, and generate revenue to support expanded community engagement.

DISTANCE LEARNING OPPORTUNITIES AND TECHNOLOGY
We will assess the potential to leverage distance technology and content already available within the UC Berkeley School of Public Health or the Berkeley campus, for both domestic and international markets.

ALUMNI EDUCATION
We will expand alumni engagement through educational opportunities tailored to emerging public health. These opportunities could be physical seminars or virtual discussions and could highlight alumni perspectives and/or achievements where appropriate.
CONTINUING ED EXPANSION
We will explore business models for expanding continuing education and will evaluate feasibility.

UCSF AS A CONTINUING ED PARTNER
We will explore partnerships within the broader Berkeley campus, with UCSF, and with other universities to leverage existing infrastructure and relationships for efficient expansion of continuing education.

RADICAL COLLABORATION

Strategy 4:
T-SHAPED LEADERS
We will prepare students to be transformational global health leaders in all sectors, including research, academia, government, and nonprofit and for-profit organizations by providing them with the traditional deep vertical training and experience as well as providing a set of broader contextual and system-based educational opportunities, trainings, and experiences.

SCALING CROSS-SYSTEMS PARTNERSHIPS
To prepare leaders to meet the complex public health challenges of today’s world, we will scale up our prestigious concurrent and dual degree programs.

TRANSFORMATIONAL LEADERSHIP EXPERIENCES
We will expand transdisciplinary leadership and professional development opportunities through field placements, co-curricular programs, and coursework that support hands-on work with community partners over year-long fieldwork experiences.

FACULTY-DRIVEN TRANSDISCIPLINARY LEARNING
We will radically expand co-teaching to maximize transdisciplinary learning.

COMPREHENSIVE CURRICULUM STRATEGY
We will integrate assessments of problem-solving, communication, and leadership skills into the School’s newly implemented pre-post assessment of public health competencies, to ensure that our graduates demonstrate competency in these critical areas. We will use findings in continuous quality improvement efforts.
DISRUPTIVE RESEARCH

Public health challenges are becoming more complex, requiring ever-closer collaboration with other fields beyond traditional public health. The School of Public Health's vision for Disruptive Research focuses on solving the biggest public health challenges. These projects will require systemic approaches to research, involving better coordination across the School and the University, collaboration with individuals and communities, partnerships with industry, and communication with policy makers. To develop research with high impact positive disruption, the School will be focusing on:

MOVEMENT-MAKING RESEARCH
We will make significant research bets and align our collective research efforts on strategic efforts that transform conventional public health approaches and achieve major impact on population health and health equity.

INTER- and MULTIDISCIPLINARY DISCOVERY
We will build on Berkeley’s unique comparative advantages, both on campus and in the Bay Area, to create the best enabling environment for individual discovery, collaboration across the School, and with our research partners.

COMMUNITY COLLABORATIONS
We will partner with the community, government, and industry to harness leading-edge technologies and thought leadership to address priority needs in our local Northern California communities and in vulnerable populations globally.

“The School of Public Health is building on its legacy of leading-edge research with an ambitious redoubling of efforts to pursue new approaches, new technologies, and new partnerships to impact public health’s biggest challenges.”

William H. Dow PhD
Associate Dean, Research
By design, each of these strategic research areas is larger than the specific projects or scientific research agendas of individual faculty. To continue advancing the School's thriving atmosphere of innovative research, we will have to balance and support both research activity driven by individual faculty research agendas, as well as the collective research areas listed below by ensuring high quality administrative support for all of its researchers.

**DIVERSITY**

**Strategy 1:**
**DIVERSE TEAMS FOR DIVERSE RESEARCH**

Many of our largest local and global public health challenges arise from inequities affecting society's most disadvantaged populations. We must make sure the School has the diversity of perspectives, background, expertise, and skills to solve these challenges.

**DRIVE FOR EQUITY**

We realize the opportunity for improving health in diverse disadvantaged populations will require engaging deeply with those populations, which in turn requires diverse teams drawn from those same populations. We must invest in efforts to expand and leverage the diversity of our faculty, staff, and students to reflect our increasingly diverse state and world.
Strategic Plan 2018 - 2022

TECHNOLOGY

Strategy 2: TRANSFORMATIVE TECHNOLOGY

We will build on UC Berkeley’s comparative advantage in new tools and technologies that lead to quantum improvements in public health strategies.

MEASURING BIOLOGY OF POPULATIONS AND THEIR ENVIRONMENTS
We will develop an omics initiative that draws together cutting-edge scientific tools that can uncover new understanding of health dimensions and threats across the life course, and brings expertise in genetics and epigenetics (examining interactions between genetics and environmental exposures), proteomics/metabolomics (in relation to both obesity and infectious disease), and exposomics (assessing environmental and infectious agent exposures).

BIG DATA TO UNDERSTANDING CAUSE AND EFFECT
We will create a Causal Inference Center for Big Data that develops signature implementation science methods for exploiting vast new health datasets both locally and globally.

NEW POPULATION HEALTH CARE TECHNOLOGIES
We will partner with leading technology firms to help develop and evaluate innovative tools to amplify health promotion, monitoring, and behavior change efforts, particularly for scalable delivery in underresourced communities. These partnerships will include areas such as ehealth/ mhealth/ sensors/ diagnostics/ devices, in conjunction with campus partners such as CITRIS.
RADICAL COLLABORATION

Strategy 3: MOVEMENT MAKING RESEARCH

We will focus Schoolwide resources on the greatest global population health threats of our day, particularly the intersection of climate change, demographic change, and economic inequities.

FACILITATE INTERCAMPUS RESEARCH COLLABORATIONS
We will formalize UC Berkeley School of Public Health agreements with UCSF to promote collaborations and increase the Bay Area’s profile as a leading center of global population health research, including the development of the Berkeley/UCSF Institute for Global Health that works synergistically with other global health entities on both campuses.

FROM AGRICULTURE TO OBESITY: FOOD, NUTRITION, AND EXERCISE
We will markedly expand research on food production, food processing, nutrition, physical activity, and health services to address the rising burden of obesity and associated non-communicable disease, as well as the environmental burden of inappropriate food production. This objective will build on current campus resources such as the Berkeley Food Institute and the Center for Weight and Health.
CHILD AND ENVIRONMENTAL HEALTH
We will build on Berkeley’s current strengths in child environmental health through a new transdisciplinary initiative to address child environmental health exposures in the Americas.

CONTROLLING OUR DESTINY: DEMOGRAPHY AND HEALTH
We will coalesce efforts of existing centers focused on demographic change, including the Bixby Center, Berkeley Population Center, Center on the Economics and Demography of Aging, and Health Initiative of the Americas, to amplify research on the public health implications of such change.

THE ADOLESCENT MIND
We will catalyze intense study of the adolescent period that shapes life course health in often irrevocable ways through biological developments, health behaviors, and sociodemographic decisions guided by larger social determinants. This will be achieved through a new interdisciplinary center for adolescent research, Innovations for Youth (I4Y).
Strategy 4:  
BECOME A RESEARCH SIGNAL CREATOR

We will reach a high level of research visibility among internal and external stakeholders, including students, alumni, community partners, policy makers, peer institutions, and funders.

SAY IT MORE, SAY IT LOUDER
We will increase publications and citations in high-impact journals and other prominent publication outlets, and we will expand research dissemination on the School’s website and through social media.

BETTER COMMUNICATIONS WITH THE PUBLIC
We will produce regular research briefs to translate to non-academic audiences the findings and implications of specific School research initiatives and achievements.

ALUMNI ENGAGEMENT
We will recognize alumni achievements, promoting them internally at the School, and engage alumni as advocates for advances in research and community service.

BRING THE SCIENCE TO POLICY MAKERS
We will strengthen relationships with local and state policy makers to enhance the relevance and impact of the School’s research, building on current activities such as through the California Program on Access to Care.
“The local and global communities we work in have a history of being marginalized. We’re engaging deeply with partners in these communities, through the School and across the Berkeley campus, to address inequities and achieve sustainable health improvement.”

Jeffrey Oxendine MBA, MPH
Associate Dean, Public Health Practice

DISRUPTIVE COMMUNITY

To achieve health equity, the School will invest in deepening existing and new community partnerships in the Bay Area and California as a first priority. We will also continue to expand our dynamic in international community partnerships. These investments mean we will work in deep partnership with several key communities and local health organizations with a history of economically and politically marginalized and underserved populations, achieving more disruptive and sustained positive health, systems, and community change. We strive to strengthen our understanding of community challenges and our ability to test appropriate technologies and interventions for maximum population health impact.

To succeed, we need to proactively coordinate our collaborations across the School and the Berkeley campus and invest in strong community engagement processes and infrastructure in order to proactively support our various community engagements. Finally, we need to build on the School’s longstanding history of community-based participatory research so that we continue to create authentic and respectful academic-community collaborations.

The strategies and objectives for Disruptive Community focus on the integration, coordination, and infrastructure for an expanded, more effective, and sustained community engagement through the development of:
COMMUNITY RELATIONSHIP MANAGEMENT INFRASTRUCTURE
We will increase our ability to track and manage the numerous UC Berkeley School of Public Health centers and programs that engage community, locally and globally, increasing our capacity to radically collaborate with community partners to achieve the goals of priority health initiatives. We will develop Schoolwide best practices for the ethics and conduct of academic-community collaborations that help prevent so-called “drive-by” research in which marginalized communities are the “objects” but not beneficiaries or partners of public health research.

COMMUNITY STUDIOS
We will develop community studios, focused on long- and short-term partnerships to meet priority health needs and develop sustainable capacity and systems change. Partnerships will be based on and advance best practices in academic-community collaboration. Studios will embed, evolve, and develop research, education, and deeper engagement in each community we serve. These are engagements that achieve critical mass and mutual benefit. They are intended to enable generations of students to cycle through them and multiple research efforts to use them as their community-based platform, and for students, faculty, and staff to provide service to neighbors in need.
DIVERSITY

Strategy 1:
DIVERSITY AS STRENGTH

We will ensure that the School is working in geographically, culturally, and economically diverse communities, with a broad range of partners.

BUILD A DIVERSE COMMUNITY PORTFOLIO
We will ensure that the School builds a diverse portfolio of public health communities and challenges, providing students with relevant and stimulating educational experiences that prepare them to address the public health challenges of tomorrow.

ALUMNI CHAMPIONS
We will identify alumni working in target communities and integrate them into community planning and coordination activities, further embedding School and specific projects in the community, and grounding our work through our alumni working in the field.

ENGAGE WITH CROSS SECTOR PARTNERS
We will expand student opportunities to work with the broadest range of community programs and partners—locally and globally, public and private.
TECHNOLOGY

Strategy 2:
COMMUNITY TECHNOLOGY

We will identify and adopt community appropriate technologies, expanding our ability to provide more comprehensive and tailored solutions to communities, households, and individuals.

COMMUNITY-APPROPRIATE TECHNOLOGIES
We will work with communities to develop and deploy community-appropriate technologies that solve specific public health challenges they face.

COMMUNITY COMMUNICATIONS
We will use technology to expand on the School’s ability to host bi- and multilateral conversations with communities.

COMMUNICATE WITH INDIVIDUALS
We will explore how technologies allow the School to develop programs that provide appropriate information to individuals, rather than community-wide communications. We will look specifically at mobile platforms, smart phones, and emerging wearable technologies.

RADICAL COLLABORATION

Strategy 3:
COMMUNITY STUDIOS

We will intensively address the greatest population health challenges in our local Northern California communities, nationally and globally, by building community studios with local partners that integrate and expand community engagement and strengthen community collaboration across education, research and service. These studios will act as a central hub for school and campuswide activities that address priority health needs and underlying causes in those communities, providing proactive coordination across all range of programs, resources, and partners.

CENTER FOR COMMUNITY ENGAGEMENT
We will organize the School’s extensive community-based efforts within a new Center for Community Engagement that will support our community-based participatory research, teaching, and service relationships in Northern California communities, allowing for improved support and centralized information on community engagement activities.
EXPLORE CONSULTATION SERVICE
We will explore development of a consultation service to advance collaboration with community partners to address priority health needs.

INCENTIVIZE ENGAGEMENT
We will create faculty and student incentives for greater community engagement.

BUILD EXEMPLARY PARTNERSHIPS
We will develop a signature initiative in partnership with one or more Bay Area communities and key government, public, or private partners to achieve transformational, long-term impact and strengthen the School’s faculty and student community engagement.

STUDIOS FOR EDUCATION AND RESEARCH
As part of the community studios, we will provide deeper and more integrated opportunities for research and educational purposes. Faculty and students can gain more experience in and contribute to our diverse communities. Studios can also be used to evaluate innovative new population health models for integrating primary care, public health interventions, and social determinants policies.

Strategy 4:
POLICY CHANGE
We will influence local and state policy and regulatory change and implementation.

POLICY CLINIC
We will implement a Policy Advocacy Clinic for community-based organizations funded by the Center for Public Health Practice's grant from The California Endowment.

TRAIN STUDENTS IN ADVOCACY
We will expand the Center for Public Health Practice's Policy Advocacy Initiative to train and engage students and implement advocacy clinic.

BUILD RELATIONSHIPS
We will strengthen and expand relationships with government agencies, legislators, and associations.

POLICY LIAISONS
We will work with School of Public Health alumni in policy positions to develop practical local, domestic, and international educational experiences for the School’s graduate and undergraduate students, and position relevant research and community service to have maximum policy impact.
LOOKING FORWARD

For each of the School of Public Health’s Foundations and Disruptions, success will require targeted investments of School resources, vigorous development of donor support, and hiring of new faculty and staff consistent with strategic priorities.

We understand that the School does not have the resources to achieve all of these strategies simultaneously, but this work is an attempt to show what would be possible with appropriate resources, highlighting those activities that have generated a critical mass of interest both among our faculty and among our stakeholders. Our ability to undertake these exciting projects will depend on our ability to turn that early enthusiasm into real projects that attract real financial support.

Finally, we recognize that we need to be judicious about allocating scarce resources. As we invest in our strategic plan, we will be measuring each success and failure, learning from these experiences and adjusting our approaches as we go, ensuring we’re making educated investments in the future of our School, in the education of future public health leaders, and in the field of public health.
Appendix

Overview of the Strategic Planning Process

The process

Strategic planning began in the spring of 2014, with the goal of ensuring extensive input from stakeholders, including students, faculty, and staff of the University of California, Berkeley School of Public Health; members of the broader UC Berkeley campus; UC Berkeley School of Public Health alumni; employers of the School's students; funders; donors; and community partners. Dean Bertozzi established a Strategic Planning Committee composed of the School's faculty and staff who represented a broad range of perspectives within the School. The Strategic Planning Committee was organized into five distinct working groups: Research, Education, Community Engagement, Administration, and Diversity.

Each working group formulated key strategic questions it wanted to answer by means of the strategic planning process. The groups then conducted a review of existing data on the School's research, teaching, and community engagement efforts to inform their understanding of current strengths and weaknesses, and to determine where there were gaps in information available.

Additional data gathering was conducted through a variety of mechanisms, including interviews, focus groups, surveys, and quantitative analyses. The working groups met regularly over the course of six months to incorporate feedback received from a variety of internal and external sources, in order to answer the strategic questions they posed and to develop this strategic plan, which will guide the School's efforts for the next three to five years.

Strategic questions

Key strategic questions posed by the Strategic Planning Committee included:

- What will it take to meet or exceed very high expectations for research, teaching, and service over the next five years?
- What should be the key areas of investment in collective research efforts over the next five to ten years?
- What are the most important cross-cutting diversity issues in the School, and how can we address them?
- What are the most important partnerships we need to develop or strengthen?
- How can we better communicate with various audiences, including the campus community, local communities, state and federal government agents, international stakeholders, donors, and alumni?
- What administrative structures will best support research, teaching, and community engagement?
- How can we ensure that our curriculum, both inside and outside the classroom, is preparing students to be the next generation of leaders in their fields?
- How can we maximize the effectiveness of our service activities for students, faculty, and those whom we serve?

Data gathering

The Strategic Planning Committee began by conducting SWOT analyses in the working groups, which were used to develop a Schoolwide assessment of the School of Public Health's internal strengths (S) and weaknesses (W), as well as factors external to the organization that could be classified as opportunities (O) or threats (T). The SWOT analysis guided the committee's efforts to develop a plan with maximum alignment between the School's resources and capabilities and the environment in which it operates.

Each working group synthesized data gathered from the multiple sources noted above, in order to develop the goals, strategies, and objectives shared in this strategic plan. The goals, strategies, and objectives reflect the many opportunities and challenges that exist both within our school and in the rapidly changing field of global public health. An implementation plan will be developed based on this strategic plan setting forth milestones and a timeline for accomplishing the School's strategic priorities.
Appendix 2: Faculty Recruitment Strategy
Overarching Objectives
As the School of Public Health aims to continue its excellence in a broad array of innovative and highly ranked programs, we confront major challenges. This includes competition with schools of public health much larger than our own, a faculty with a bimodal age distribution (roughly 1/3 over age 65), and the need to develop and maintain diversity in faculty, students, and programmatic breadth. Our overall goal is therefore posed in terms of maintaining both the size of the School and the quality of its programs, and using faculty recruitments over the ensuing 5 years to accomplish this.

The School of Public Health has recently published a 5-year strategic plan for 2015-2020. This is available at: www.sph.berkeley.edu/strategy

Areas in our Discipline
A crucial academic factor motivating our priorities includes maintaining the quality of current programs. Of only 4 PhD granting disciplines evaluated in the most recent National Research Council report, the Berkeley School of Public Health placed first in Epidemiology, second in Health Services and Policy Analysis ranked, and fourth in Environmental Health Sciences. Unfortunately, these NRC rankings are now 10 years old. School admissions data indicate that our programs are highly competitive: we offer admission to 17% of applicants to academic degree programs, and to 35% of applicants to professional degree programs. Of these, 70% admitted to our academic programs matriculate at Berkeley, and 50% of those admitted to professional programs matriculate here. Public Health programs providing an MPH degree are not specifically ranked, however Berkeley ranks 9th overall in graduate Public Health education (U.S. News and World Report 2015). Our undergraduate program in Public Health was recently ranked #1 nationally by USA Today. Maintaining excellence across undergraduate, masters, and doctoral level degree programs is thus a key driver of our plan for faculty recruitment.

Another factor underlying faculty recruitment goals is the School’s recently completed Strategic Plan. This plan emphasizes innovative areas of academic research that are poised for growth in the field of public health and at which we are positioned to excel, along with values that shape our activities in education, research, and community partnership. The research areas that we have prioritized reflect what we perceive as innovations in science that have occurred over the past 5-10 years and which are now clearly with us for the long term. These innovations in biology, mathematics, computing, and engineering are ripe for incorporation into Public Health research approaches that range from new ways of assessing disease related exposures (using “omics” methods), through large datasets (“data science”), and new technologies for measuring, tracking, and intervening in both local and global community settings important to the health of the public. These areas are also synergistic with strengths and priorities of the Berkeley campus that include data science, engineering, and technology.

Our Strategic Plan also stresses diversity as well as community partnerships and collaborations as part of our core mission and values. Thus, while scientific innovations are major drivers of our faculty requests, we recognize that the scientific advances which are now possible must be implemented and examined in light of concerns about inequality and racial disparities in health, as well as with the appropriate engagement of the relevant communities. Thus, we have tried to envision recruitment of faculty who not only use multiple approaches in their research, but who use innovative science with a view to understanding and reducing the inequities that plague public health. We understand this to also be a priority of the campus at large.
Based on these strengths and our strategy, we have prioritized our proposed 5-year plan for faculty recruitment into 3 broad areas, which map in broad strokes to our School’s strategic plan:

1) **Social determinants of health**: Health disparities and inequality  
2) **Biological determinants of health**: Measurement and analysis of disease-related exposures  
3) **New technologies for health**: Application of devices and technologies for measurement and intervention

These 3 broad categories are not exclusive of one another, for example in our plans, new technologies are applied to problems of health disparities. Furthermore, through all 3 of these areas runs “data science” as a cross-cutting theme; many of the approaches used will require mathematical and computational solutions to problems of large scale that are common across multiple disciplines.

**Faculty Profile**
The School of Public Health Faculty target number is 49. The FTE count for academic year 2015-16 is 46.75, diminished from a 10-year high of 50.25 in AY 2011-12. The current age distribution of the faculty (based on September 2015 data for 53 individuals including those with fractional appointments) is:

![Age Distribution Chart]

At present, 23 faculty (43%) are 60 and over and 17 (32%) are 65 and above. Thirty-seven hold the rank of Professor, 13 Associate Professor, and 3 Assistant Professor. While we do not have precise figures on projected retirements after 2017-18, we expect, based on faculty ages and informal comments from colleagues, that there may be **15 retirements in the next 5 years**.

These workload issues should also be viewed in the context of educational demand, which is high and increasing. Currently, the Public Health undergraduate major is extremely popular, but it is capped at its current size of 440 majors. Concerns about current and future workload for faculty who are already highly committed to teaching in MPH, PhD and DrPH programs make it difficult to contemplate increasing the size of the major without increasing faculty resources available to the program. The new requirement imposed by CEPH, the accrediting body, that each undergraduate must have a capstone project or thesis has led to considerable pressure to further decrease the size of the
undergraduate major. The Online/On-campus MPH program has also been highly successful in recruiting students, with approximately 200 enrollees in the current cycle. This too poses a significant increase in faculty workload over the coming years. A potentially shrinking professoriate combined with a potentially increasing teaching commitment is a worrisome combination in maintaining the quality of our programs and developing new academic directions.

Historical data on hiring of women and underrepresented minorities show gradual improvement in the faculty diversity of the School which in fact is reflective of overall campus trends. The graph below depicts the diversity of our faculty based on the current count of 53 individuals, which includes fractional FTEs. These 53 individuals reflect 46.75 FTEs. While these data indicate improvement, maintaining and increasing the diversity of our faculty is an ongoing priority.

**Faculty and Areas**

FTE faculty in the School are affiliated with one of 6 academic divisions. Current counts of faculty by division are:

- Biostatistics (BIO): 8 FTE
- Community Health and Human Development (CHHD): 16 FTE
- Environmental Health Sciences (EHS): 3 FTE
- Epidemiology (EPI): 7 FTE
- Health Policy and Management (HPM): 7.25 FTE
- Infectious Disease and Vaccinology (IDV): 5.5 FTE

Faculty from all of these divisions participate in the undergraduate, MPH, DrPH, and online/on-campus degree programs and all but Community Health and Human Development have their own Ph.D. granting programs. These PhD granting programs are not exclusive to divisions, however, since faculty across the School participate in multiple graduate groups.

**Hiring Priorities**

Proposed faculty recruitments are generally aligned with these divisions, although in some cases faculty could be affiliated with different divisions depending on the individual candidate. The key factors driving proposed recruitments are retirement/workload and the priorities articulated in the
School strategic plan as summarized above. In view of workload issues we are proposing an aggressive recruitment plan with 15 new faculty recruitments over 5 years. Based on the goals of the School, these faculty will be recruited across all divisions with an emphasis on (1) Social determinants of Health (2) Biological and environmental determinants of health and (3) New technologies for health with the theme of “data science” cross-cutting all of these areas. We have prioritized our requests for the coming target recruitment year, but will be flexible in our subsequent requests which will be evaluated in the context of specific faculty retirements, interests of existing faculty, and the academic growth of specific disciplines.

**Social Determinants of Health: Health Disparities and Inequality**
These recruitments specifically address the core School missions of community partnerships, and racial and social disparities in health access and outcomes.

*(CHHD) Maternal and Child Health*
Researcher who examines factors affecting maternal and child populations with a view to improving policies and programs at local, state, and federal levels.

*(CHHD) Reproductive and Perinatal Epidemiology*
Epidemiologist who studies factors related to maternal health and mortality, childhood health, using data science and primary data collection

*(CHHD) Public Health Nutrition Food Systems*
Transdisciplinary (agriculture, economics, environmental health, policy) researcher with a systems-based focus to address nutritional factors in health.

*(CHHD) Community-Based Interventions*
Social/behavioral scientist using technology/devices to promote health in diverse communities.

**Biological and Environmental Determinants of Health: Measurement and Analysis of Disease-Related Exposures**
These recruitments specifically address the School’s core interests in new methods of measuring disease exposure using “Omics” technologies and data science.

**(EPI/EHS) Exposomic Epidemiology**
Epidemiologist who studies health risks in relation to the “exposome”: factors including air and waterborne chemicals, nutrition, infectious agents, the microbiome, the work environment, the built environment, and social factors.

**(BIO) Statistical Computing**
A statistician with expertise in recent advances in statistical and scientific computing.

**(BIO) Precision Medicine**
Biostatistician with expertise in streaming data, causal inference, statistical computing, machine learning.

**(EPI/EHS/IDV/BIO) Generating and Interrogating Large Data Sets to Discover Causes of Disease (3 FTE)**
Data scientist(s) who can generate and analyze large data sets – health records, administrative data, genomic, proteomic and metabolomic, and mobile health data. This is an important and broad area of research, consequently we are requesting 3 faculty recruitments, with assignments to a combination of the divisions noted.
(IDV) Infectious Disease Metagenomics/Microbiome
Scientist who can integrate data generated from metagenomics/microbiome research to understand how microbes in the human body influence health outcomes.

(IDV) Infectious Disease-Non-Communicable Disease (NCD) Interactions
Scientist studying the biological determinants of infectious disease in individuals with chronic disorders including diabetes, cancer, chronic kidney disease, etc.

New Technologies for Health: Application of Devices and Technologies for Measurement and Intervention
These recruitments specifically target the School’s interests in developing new technologies for the health of the public, including tools for measurement, analysis, and evaluation.

(EPI) Leveraging Technology to Study and Prevent Infections
Epidemiologist using technology – ehealth/mhealth – to monitor infections or implement interventions in under resourced environments

(HPM) Decision Science and Technology Analysis
Economist/decision scientist with an interest in global health and health technology assessment

*(HPM) Management of Health Information Technology
Economist/statistician/data scientist with a focus on improvement of information management and public policy related to big data such as health records, genomic databases, and sensors/devices

(*) Indicates positions prioritized for Target Year 2017-18

BACKGROUND: Full Position Descriptions

Social Determinants of Health: Health Disparities and Inequality

Maternal and child health: Current trends suggest an erosion of earlier gains in maternal and child health outcomes with marked health inequities driving this shift. Over the last half-century, the maternal mortality ratio (MMR) among black women has remained 3 to 5 times higher than amongst white women. The US is the only developed country where the MMR actually rose (by about one third) between 1990 and 2013. Furthermore, despite decades of research suggesting the benefits of prenatal care and accessible quality healthcare, we have failed to reduce our preterm delivery rate, the leading cause of infant mortality, thus allowing significant racial disparities to persist. In addition, the U.S. has an obesity epidemic among our children that will lead to increased cardiovascular and metabolic disease for these individuals as adults. Innovative research is needed to develop a solid evidence base of programs, practices, and policies aimed at improving the health of pregnant women and children. To this end, we seek an FTE who conducts state-of-the art research on maternal and child populations and the programs that serve them, with the goal of directly informing and improving policies and programs at the local, state and federal level serving this population. Their research may include policy analysis, program development and evaluation, multi-sector engagement and the social determinants of health, and development and implementation of community-driven interventions. It is essential that this person serve as a credible representative from the University to the state MCH branch and federal Maternal and Child Health Bureau (HRSA). This person would be able to teach the core course in MCH, as well as courses in needs assessment and program planning/evaluation, and/or qualitative methods. The practice and policy background and experience of this individual would enable them to interface with other campus departments such as Social Welfare and Public Policy.
Our maternal and child health program is one of the oldest training programs in the US funded by HRSA for 60 years and is considered one of the best, if not the best, graduate training programs in maternal and child health. We have recently been awarded by HRSA an additional program in Maternal and Child Health Nutrition and a postdoctoral training program in MCH Epidemiology. In addition, we have a predoctoral and postdoctoral MCH training program under review at NIH. Although our funding for training is growing, we expect that the MCH program will be one of the most impacted by pending retirements in the SPH. Within five years, we will have only one MCH FTE remaining and we will not be able to meet our training needs. It is for this reason that we request two FTE positions: in Maternal and Child Health Practice-based Research and in Reproductive and Perinatal Epidemiology, which we present below.

**Reproductive and perinatal epidemiology:** Around the world, such as in France, Norway, Denmark, Germany, Singapore, Korea, Japan and elsewhere, national birth cohort studies have been initiated to study children’s health over the lifecourse – from *in utero* to adulthood. Although the US National Children’s Study failed, the NIH under Francis Collins leadership is now beginning two large scale efforts: the Precision Medicine Initiative and the Environmental Influences on Child Health Outcome (ECHO) Initiative, both studies which will include the epidemiologic study of children’s health. These studies have been conceived to study the environmental and genetic (and their interaction) influences on children’s health and well-being and the early life factors that influence adult health. The hope is that such worldwide efforts can address the high rates of infant and maternal mortality in the US, the global childhood obesity epidemic, the epidemics of autism and other developmental disorders, the earlier onset of puberty and the growing divide in reproductive outcomes by social class and race/ethnicity in the US and globally. We aim to recruit an epidemiologist with expertise in reproductive and perinatal epidemiology who can address these pressing questions using both “data science” as well as primary data collection and who can be at the forefront of these national and global research efforts. This person will have expertise in developing and utilizing research methodologies pertaining to studying disease/disorders of reproduction, pregnancy and childhood. Substantive areas of research interest include, but are not limited to: genetic and biologic, social and behavioral, nutritional and environmental factors affecting reproduction and childhood health. This person should be able to teach reproductive and perinatal epidemiology as well as advanced research methods classes in reproductive and perinatal epidemiological analyses pertaining to pregnant women and children at the doctoral level. This person could direct or co-direct the MCH epidemiology postdoctoral training grant(s). This position may also fulfill needs within the divisions of environmental health and epidemiology and will also interface with Demography and Social Welfare.

**Public Health Nutrition Food Systems:** The US is facing both a diet crisis and a food crisis as evidenced by remarkably poor dietary intake, rising rates of diet related chronic diseases, and a food system that is neither sustainable nor in keeping with the US Dietary Guidelines for Americans. Less than 20% of Americans consume the recommended amount of fruits and vegetables and less than 2% the recommended amount of whole grains. 36% of Americans are obese and another 30% are overweight, and Type II diabetes in on the rise. The financial burden of these chronic conditions is on the order of $245 billion annually. US agriculture only produces half of the fruits and vegetables that are necessary to meet the Dietary Guidelines. Furthermore, we face pronounced disparities in dietary intake, access to nutritious food, and diet-related chronic diseases. Individual-level approaches are failing in light of unequal access to affordable nutritious foods and a federal food policy that subsidize commodity crops. We seek a candidate who conducts transdisciplinary nutrition research (agriculture, economics, environmental health, policy) raising national and international awareness of the crucial importance of nutrition for health, equity, and the environment. Systems-based research is needed to address the full range of issues from food production and distribution to the dietary needs of the population, and would be a great benefit within the School of Public Health, on the Berkeley campus, and within the UC system. This individual will interface with the new Berkeley Food Institute and the
UC Nutrition Policy Institute, and can contribute directly to President Napolitano’s recently launched UC Global Food Initiative focused on reducing nutritional health disparities in local and/or global communities. Specifically, this FTE is needed to develop innovative courses for master’s and doctoral students and to provide teaching expertise in: (a) a new food policy course that could be cross listed with public policy and (b) a food systems course that could be cross listed with the College of Natural Resources. The selected applicant will be responsible for establishing and maintaining an extramurally-funded research program in applied economics and federal food program and policy analysis, epidemiologic or intervention research in nutrition disparities and chronic disease prevention, or another area that complements or expands existing research capabilities and expertise within the public health nutrition program.

Community-based Interventions (PRIORITIZED FOR TY 2017-18): Income and social inequities are increasing in the USA. These inequalities “get under the skin” to drive health disparities across the life-course and there is now growing recognition that improving the health of diverse -- and particularly marginalized populations of color -- requires complex interventions that incorporate both individual and community factors (e.g., social network norms; unequal access to high-quality education and housing; community safety). To be successful, such interventions require transdisciplinary, innovative methods and strong connections with community stakeholders. At the same time, there have been major advances in new technologies which can be used to develop cost-effective interventions that can be translated or adapted to investigate and promote health among diverse disenfranchised communities. For example, the widespread use of cellular phones within the US and globally among very low-income communities has enabled direct text-based health promotion and data collection efforts where traditional health infrastructure has been poor. Further, the introduction of technologies that can sense, record, transmit, and receive data has revolutionized possibilities for interconnecting individuals.

We require an FTE whose work, guided by social and behavioral science, seeks to address health disparities via community- or policy-level interventions that creatively capitalize on innovative technologies and platforms. We are open to candidates from social science disciplines including psychology, sociology, anthropology, as well as information science, computer science, and engineering. The crucial aspects are expertise in theory-driven health and intervention approaches that collaboratively engage community stakeholders and employ mobile/digital/online technologies.

As noted above, the specific area of health outcomes addressed is open and can fit with the focus of other divisions with the SPH and other units on campus. This FTE is essential for the application of social and behavioral science to public health -- core competencies required by all SPH students – and is directly responsive to the UCB campus focus on diversity. Specifically, this FTE is needed to provide graduate and undergraduate advising for those students working on health interventions in the SPH and to teach behavioral science theory courses such as in 200C Health and Social Behavior (required for all graduate students) and community health intervention courses. These courses are in demand by students outside of the division and from other departments on campus (e.g., Social Welfare, Education, and City Planning and Regional Planning).

The SPH has historically been a leader in community-level health research nationally and internationally, including community-based participatory research (CBPR), an innovative approach to research that engages community members affected by the problems studied as partners in the research process. The use of new technologies to bring health interventions to scale is a critical new area for the community intervention field, and one in which we have little current capacity among our FTE faculty in our School or on campus. Collaborative community health research was emphasized as a core priority in the SPH’s recent strategic planning process but our ability to lead research and to provide teaching in these core areas has been threatened by recent and upcoming retirements. With these retirements, we cannot meet the increasing demand from other units on campus (e.g., engineering, informatics, public policy, education, social welfare, and business) for courses in the
application of social science to behavior change on the population level and on development and
evaluation of community interventions. The requested FTE would greatly increase SPH’s ability to
offer such courses to students in other departments.

Biological and Environmental Determinants of Health: Measurement and Analysis of Disease-
Related Exposures

Exposomic Epidemiology (PRIORITIZED FOR TY 2017-18): The recent focus on genetics as the
basis of individual risk has failed to provide the insight needed to develop prevention strategies for the
most common chronic diseases. In this light, we need to take a broader look at how lifetime disease
risk is shaped by the total environment, defined more inclusively as the exposome. Within the
exposome framework, all nongenetic factors that contribute to disease are considered to be
environmental, including air and waterborne chemicals and their metabolites, the food we ingest,
infectious agents, social stress, the work environment, the built environment, and gut microbiota. We
would like to hire an epidemiologist who studies chronic health risks in relation to the exposome, with
a focus on biologic pathways from early life exposure to chronic disease - or early biomarkers of
disease – attentive to variations in susceptibility and the cumulative impact of the environment on
vulnerable populations. It is critical that we enhance our faculty expertise in this rapidly developing
area of environmental epidemiology and related analytical methods focused on the study of causal
mediators and interactions between environmental factors, for example, chronic stress and
environmental chemicals that may disrupt stress response pathways. This broad and innovative new
research area is a high priority area for NIH, and is highlighted as an area for research investment in
our Strategic Plan.

Statistical Computing/Data Science: with emphasis on developing methods that can harness cloud
computing. Such an individual would have a strong background in statistics and computer science
(PhD in one discipline and extensive experience in another discipline). We are particularly interested
in those with experience in statistical software development. The ideal candidate’s research will be on
the cutting edge of the intersection of statistical methodology and advances in computing (such as
cloud computing, open-source computing, and innovations in programming languages). In addition to
advanced analytic skills, this individual will be proficient at integrating and preparing large, varied
datasets, architecting specialized database and computing environments. A faculty member in this
area would be able to teach both technical courses for advanced students as well as more basic
courses on computing (e.g., in python) for a general public health curriculum.

Precision Medicine: There is great potential for growth of this field in Biostatistics due to initiatives at
many levels (federal, State, UCOP, campus, etc.). The appropriate individual in this series could be a
shared FTE with other units on campus depending on the exact area of interest. This person’s
methodological expertise would include the analysis of streaming data, the use of causal inference,
statistical computing, and machine learning. The position will potentially involve translating statistical
and computation advances related to omic-scale diagnosis, therapy, engineering and computer
science, imaging and data integration that enable insights into disease mechanisms. This individual
will have a background in both statistics, computer science and computational approaches to
biological complexity and challenging biomedical problems; integration of multi-omics data across
multiple scales from molecule to organism for deciphering disease mechanisms; next generation
computational and engineering approaches to personalized medical diagnosis and treatment.

Generating and Interrogating Large Data Sets to Discover Causes of Disease (3 FTE): Health
information captured in electronic health records, administrative health systems, genomic, proteomic
and metabolomic data generated from well-curated cohort studies, and mobile health technologies are
all a part of the new frontier of data science in health research. While these skills fall generally under
the rubric of “data science”, they utilize a variety of approaches that either generate or analyze very
large data sets. For this reason, we are proposing the recruitment of 3 individuals in this large area, with skills that overlap, but are distinct. Such individuals would have skills including:

- Laboratory-based science that involve analytical chemistry, systems biology, and “omics” including gene sequences, protein structures, metabolism, immunity and epigenetics.
- Computing-based science with a focus on data science and analytics. Expertise could include machine learning, data mining and acquisition, causal inference, natural language processing and distributed computing.

Individuals in this area may come from fields including epidemiology, environmental health, microbiology, biostatistics and computer science. Applications of the work are broad, including omic-scale diagnosis and biomarkers, imaging, investigations of the relationships between exposures and disease, and host-pathogen relationships; levels of analysis can be multi-scale (from molecules to organisms). Work in this area will apply statistical and computational approaches with these different types of data to gain insight into disease mechanisms and population health, and will directly relate to initiatives in precision medicine. This is a high priority area for NIH, illustrated by the “Big Data 2 Knowledge (BD2K) initiative, and also on the UC Berkeley campus, as highlighted by the recent Big Science Initiatives (Berkeley Institute for Data Sciences and Data Science Planning Initiative). UC Berkeley SPH has also made data science a key area in the Strategic Plan, and we are already well positioned to enhance our strengths in this area with an application under review at NIH for a training grant under the BD2K initiative and a center for Big Data and Causal Inference in development. This is a broad area of research, encompassing a number of different types of potential individuals. For this reason, we are proposing 3 hires in this area to speed the development of this research field within the School.

**Infectious Disease Metagenomics/Microbiome:** It is becoming evident that the traditional idea that an infectious disease is caused by a single infectious agent or a non-communicable disease is caused by a single physiologic defect is no longer accurate. The “next generation-sequencing” technology has unmasked previously unrecognized population structures of microbes in various niches in the human body that exert a profound effect on a variety of health outcomes. The microbial population structure of the human intestines can determine body physiology, including obesity and its associated diseases, including diabetes, dyslipidemia, and even cancer. The intestinal microbial structure can, in turn, may be affected by diet as well as environmental exposures such as exposure to low-residue antibiotics in food and water. A new faculty member who can integrate data generated from metagenomics/microbiome research can collaborate with basic biology and computational biology researchers on campus, as well as non-infectious disease public health researchers at the School to contribute to teaching and research applied to infectious diseases and non-communicable diseases of global public health importance. This individual will have a background in epidemiology, with laboratory skills in generating microbial metagenomics data and analytic skills in bioinformatics.

**Infectious Disease Non-Communicable Disease (NCD) Interactions:** A large proportion of morbidity and mortality due to NCDs (e.g., diabetes, cancer, chronic kidney disease, chronic obstructive pulmonary disease, asthma, dyslipidemia, etc.) is due to infectious diseases among people with underlying non-communicable diseases. Infectious diseases remain the “Great Equalizer” of advancements made in cancer immunotherapy. As the life span of developed and developing countries continues to increase, the prevalence of NCDs will increase. In emerging economies where infectious diseases such as TB, drug-resistant bacterial infections, influenza, herpesvirus infections, and pneumococcal infections remain highly prevalent, NCDs will greatly exacerbate these traditional infectious diseases. A researcher who can address the biological determinants of infectious diseases in those who have NCD is needed in our division to complement other researchers working on non-biological determinants of NCDs as well as infectious diseases at the School of Public Health.
**New Technologies for Health: Application of Devices and Technologies for Measurement and Intervention**

**Leveraging Technology to Study and Prevent Infections:** In the less developed parts of the world, preventable infections pose a constant threat and cause substantial morbidity and premature mortality. The recent Ebola outbreak highlights the importance of better monitoring of infections, and dissemination of innovative interventions in these settings. There are substantial opportunities for bringing to bear the monitoring, diagnosis and treatment of infections that could be facilitated by new mobile and other technologies. eHealth and mHealth are high priority areas for funding, both for federal agencies and Bay Area based technology leaders. Use of technology to transform health, particularly in under resourced settings, is highlighted as an overarching priority in the Strategic Plan for the UC Berkeley SPH. It is critical that we enhance our faculty expertise in this area, to stay on the cutting edge of leveraging technology to improve monitoring, treatment, and implementation of health innovations. We aim to hire an epidemiologist who utilizes technological tools to monitor infections or implement health innovations, related to infections in developing countries. This faculty member would contribute to teaching in technology and health, and infectious disease epidemiology. Our nationally top ranked PhD program in epidemiology has many applicants interested in infectious diseases in the developing world, and it is critical to build our capacity to mentor these students and provide them with opportunities for involvement cutting edge research and intervention on infections in sites around the world. Our cutting edge epidemiology curriculum benefits all students across SPH. The faculty member would also contribute to important teaching and mentoring for the MPH and undergraduate students.

**Decision Science and Technology Analysis:** As the School expands its research and teaching activities in the assessment of public health and healthcare technologies, we have increased need for a faculty member with expertise in decision theory, risk analysis, cost-effectiveness analysis, decision modeling, behavioral decision theory, and/or operations research. At this time HPM has no faculty members with expertise in Health Technology Assessment, a rapidly growing global research and policy-related field that quantifies the clinical and financial implications of alternative approaches to preventing and treating health threats. The US has lagged behind major European nations in developing institutional capacity for HTA, but now is investing in such capacity at the FDA, CMS, and other major policy and scientific bodies. The faculty member could take a broad view of technology to include not only tests and treatments, but alternative strategies for confronting health problems in the global context, with an emphasis on the quantification and comparison of impacts for each strategy. These are domains subject to rapid changes in methodologies, available datasets, and comparative methods of analysis. The School has expertise in the scientific and epidemiologic dimensions of infectious and chronic conditions, but lacks faculty who analyze the economic, regulatory, and institutional foundations of effective responses to these problems.

HPM proposes to combine these needs for decision science and technology assessment into a single faculty position. Ideally, this faculty member would have a global health focus. The current HPM course on Global Health Economics compares health insurance and delivery systems in selected developed and emerging nations. This is a crucial course for our students in the joint MPH/MBA and MPH/MPP programs and for our PhD students. We need a comparable course to be taught to the undergraduates and, ideally, to be offered as part of the HPM online specialty area. If the individual recruited for this position is an economist or decision scientist, he or she could teach a course in Cost Effectiveness Analysis, which is high demand not only in HPM but across the SPH and, indeed, across the campus. The person sought for this position could have a PhD in decision sciences, economics, health technology assessment, or a comparable field.

**Management of Health Information Technology (PRIORITY FOR TY 2017-18):** The SPH has identified health information technology as one of the leading disruptors and opportunities facing public health nationally and globally, and one where our current research and teaching capabilities are
most limited. Health information technology (HIT) encompasses the collection and analysis of large genomic and behavioral databases (Big Data), promotion of interoperable electronic health records, mobile health technologies to promote consumer health engagement, high-performance sensors, ‘smart’ implantable devices and diagnostics, telemedicine, and other modalities. HPM’s contribution to the School’s strategic efforts in this domain will be in the analysis and improvement of methods of information management, plus the analysis and improvement of the public policies that can accelerate or impede adoption and use.

The number one HPM recruitment priority is for a Professor of Management of Health Information Technology, to be recruited at the assistant or associate professor level. This individual would have a PhD in informatics, organizational theory, health services research, or related field. He or she would teach courses at the master’s level (both residential and online) that would extend current HPM courses in organizational behavior and strategy into the information technology domain. We also seek to deepen our traditional strength at the PhD level in organization theory, with a new focus on the organizational management of technology. The person occupying this position would strengthen the School’s research capabilities working with the Center for Healthcare Organizational and Innovation Research (CHOIR) and the Berkeley Center for Health Technology (BCHT).

This faculty member will also add value to the policy side of HPM and the SPH. New information technologies challenge the regulatory and policy spheres, including policies related to privacy and confidentiality, transparency and public reporting, digital infrastructure financing, and incentives for meaningful use of electronic health records. The existing laws and regulations were designed in an era where HIT was less developed, and now often serve as obstacles rather than accelerators to adoption. We thus see the new recruitment as an opportunity to help the School understand and improve how HIT can and should influence the health system both inside organizations (management) and in the larger organizational environment (policy). This faculty member will be able to lead the School’s collaborative relationships with CITRIS, the Information School, and other UCB informatics initiatives.
Appendix 3: Accreditation Committee Response to the School’s Self-Study Document
REVIEW FOR ACCREDITATION
OF THE
SCHOOL OF PUBLIC HEALTH
AT THE
UNIVERSITY OF CALIFORNIA, BERKELEY

COUNCIL ON EDUCATION FOR PUBLIC HEALTH

SITE VISIT DATES:
September 30 - October 2, 2015

SITE VISIT TEAM:
James D. Yager, PhD, Chair
Richard S. Kurz, PhD
Mary Helen Smith, MPH, CPH, RS, REHS

SITE VISIT COORDINATOR:
Samantha-Rae Dickenson, MSPH
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Introduction

This report presents the findings of the Council on Education for Public Health (CEPH) regarding the School of Public Health at the University of California, Berkeley. The report assesses the school’s compliance with the *Accreditation Criteria for Schools of Public Health, amended June 2011*. This accreditation review included the conduct of a self-study process by school constituents, the preparation of a document describing the school and its features in relation to the criteria for accreditation, and a visit in October 2015 by a team of external peer reviewers. During the visit, the team had an opportunity to interview school and university officials, administrators, teaching faculty, students, alumni and community representatives and to verify information in the self-study document by reviewing materials provided in a resource file. The team was afforded full cooperation in its efforts to assess the school and verify the self-study document.

The University of California was created in 1868 by state law with the merger of the College of California and the Agricultural, Mining, and Mechanical Arts College, a land grant institution. The new University of California was built in Berkeley. Today, Berkeley is a part of the UC system, which includes 10 UC campuses located throughout the state of California and is governed by the Board of Regents and the UC Office of the President. Although each campus is a member of the University of California system, each maintains its independence. In Fall 2014, there were 37,581 students enrolled at UC Berkeley: 27,126 undergraduates and 10,455 graduate students. The university has a total of 14 schools and colleges; the Colleges of Chemistry, Engineering, Environmental Design, Letters and Science and Natural Resources, and the Schools of Education, Business, Information, Journalism, Law, Optometry, Public Policy, Social Welfare and Public Health.

The School of Public Health was founded in 1943 on the Berkeley campus, where it had its origins more than two decades earlier with the creation of the Department of Hygiene in 1919. The total graduate student enrollment for 2014-2015 was 570, including students enrolled in the online/on-campus MPH program. Of these, 123 were doctoral students and 447 were master's candidates. There were also 435 undergraduate public health majors.

UC Berkeley’s school of public health has been accredited for over 60 years. The last accreditation review occurred in spring 2008. The school received an accreditation term of seven years. The Council accepted interim reports in 2009, 2010, 2012, and 2013.
Characteristics of a School of Public Health

To be considered eligible for accreditation review by CEPH, a school of public health shall demonstrate the following characteristics:

a. The school shall be a part of an institution of higher education that is accredited by a regional accrediting body recognized by the US Department of Education.

b. The school and its faculty shall have the same rights, privileges and status as other professional schools that are components of its parent institution.

c. The school shall function as a collaboration of disciplines, addressing the health of populations and the community through instruction, research, and service. Using an ecological perspective, the school of public health should provide a special learning environment that supports interdisciplinary communication, promotes a broad intellectual framework for problem-solving, and fosters the development of professional public health concepts and values.

d. The school of public health shall maintain an organizational culture that embraces the vision, goals and values common to public health. The school shall maintain this organizational culture through leadership, institutional rewards, and dedication of resources in order to infuse public health values and goals into all aspects of the school's activities.

e. The school shall have faculty and other human, physical, financial and learning resources to provide both breadth and depth of educational opportunity in the areas of knowledge basic to public health. As a minimum, the school shall offer the Master of Public Health (MPH) degree in each of the five areas of knowledge basic to public health and a doctoral degree in at least three of the five specified areas of public health knowledge.

f. The school shall plan, develop and evaluate its instructional, research and service activities in ways that assure sensitivity to the perceptions and needs of its students and that combines educational excellence with applicability to the world of public health practice.

These characteristics are evident in the School of Public Health at the University of California, Berkeley. The school is a part of a regionally accredited institution. The dean, faculty members, staff and students have the same rights, privileges and status as other schools at the university.

The school's mission, goals and value statements emphasize the importance of instruction, research and service, and its organizational culture embraces core public health values and goals. The school functions as a collaboration of disciplines and addresses the health of populations and the community. The school uses an ecological approach to create a learning environment that promotes a framework for intellectual learning and development of public health core values.

The school's faculty are trained in a variety of disciplines, and faculty ensure that the environment supports interdisciplinary collaboration. The school has adequate resources to offer MPH and doctoral degrees.
1.0 THE SCHOOL OF PUBLIC HEALTH.

1.1 Mission.

The school shall have a clearly formulated and publicly stated mission with supporting goals, objectives and values.

This criterion is met. The school has a clearly formulated and publicly stated mission with supporting goals, objectives and values. Strategic planning and the development of the mission, goals and objectives began in the spring of 2014 and followed an iterative process that included all constituents.

The school’s mission is as follows:

1. Conduct world class, rigorous research.
2. Apply knowledge to prevent disease and injury and promote the health of individuals and communities in California, the United States and the world.
3. Develop diverse leaders for professional and research careers through undergraduate, masters and doctoral programs.
4. Enhance the knowledge and skills of the public health workforce through continuing education and technical assistance.

The information provided in the self-study was based on the school’s previous 2008-2012 strategic plan. The Strategic Planning Committee oversaw the development of the mission, goals and objectives and included input from students, staff, and members of the broader UC Berkeley campus, alumni, employers and community partners. At the time of the site visit, school administration stated that a 2015-2020 strategic plan has been developed and outlines the priority areas for the school over the next five years and also defines strategic priorities which will enable the school to meet local and global public health needs. The school is currently working to develop a detailed implementation plan in the areas of education, research and community and for the cross-cutting area of diversity. As part of this process, the school has revised its vision and mission.

The school articulates 10 primary goals in the areas of instruction, research and service. The goals are grouped into five thematic categories: impact, growth, diversity, research and resources. Each goal has a range of four to 12 objectives.

The school has developed four value statements which include the following: health as a right, strength through diversity, think forward and impact first. Information on the mission, vision, values, goals and objectives are available on the school’s website. The site visit team validated visible reinforcement and demonstration of values in the school environment as well as familiarity of leadership, faculty and students with these concepts.
1.2 Evaluation and Planning.

The school shall have an explicit process for monitoring and evaluating its overall efforts against its mission, goals and objectives; for assessing the school's effectiveness in serving its various constituencies; and for using evaluation results in ongoing planning and decision making to achieve its mission. As part of the evaluation process, the school must conduct an analytical self-study that analyzes performance against the accreditation criteria.

This criterion is partially met. The school has some processes in place for monitoring and evaluating its overall efforts against its mission, goals and objectives. Evaluation and planning tools include the following: an annual dean’s performance report, summer ‘advances’ similar to an administrative retreat, annual retreats, student exit surveys, individual course evaluations and feedback from alumni and the advisory council.

Planning and evaluation occurs at the school and university level through a variety of meetings, which include the following: monthly meetings of the Dean's Administrative Council and the Faculty Council, bimonthly school-wide faculty meetings and ad hoc meetings called to address specific issues. The school monitored and collected data through 2012 relative to the 2008-2012 strategic plan. The dean provided progress reports to the faculty members and the school's constituents. These mechanisms provided opportunities for the faculty, staff, students and other stakeholders to be aware of the school's progress in meeting its targets. The dean also presented an all-school strategic plan progress report at the annual all-school meeting held in January of each year.

Campus-wide evaluation takes place through six different processes that include development of five-year and annual academic faculty recruitment plans, an annual budget plan and an annual meeting between the dean and the provost. The school also undergoes a UC Berkeley campus academic program review coordinated by the office of the vice provost. This process involves review of a separate school self-study focused on academic programs, which assesses its intellectual agenda, its programmatic goals and resources and identifies critical challenges and opportunities facing the school.

External constituents are included in the strategic planning process via an Alumni Association retreat and Policy Advisory Council meetings. Alumni provide input on competency attainment and the school’s ability to effectively prepare students for the workforce. The Policy Advisory Council meets three times a year and provides input with regard to the school’s fundraising campaign. During the meeting with alumni community members and employers, the site visit team confirmed that there is active engagement with the school.

The first concern relates to the lack of baseline targets and measurable objectives for the 2008-2012 strategic plan. The overall school-level objectives are mostly stated in qualitative terms, with targets being the years in which they should be completed. It is not always clear whether or not the objectives listed for
the different years were completed, making it difficult to assess the fulfillment of the goal for that year. Examples of some objectives are: “Establish formal relationships and secure funding to enable students and faculty to collaborate with various agencies, locally, in the state of California, nationally, and internationally to conduct research and evaluation and offer technical assistance and training.” The target was 2010 and one of the outcome indicators, for example is: workforce diversity project with the public health institute (2009-2010). Another example of an objective is: “Enhance the support provided to faculty for preparing and submitting large grant proposals requiring multi-disciplinary research teams and addressing important public health concerns.” The target is 2009 and one of the outcome indicators is: SPH faculty initiated affiliations with the UCB Center for Information, Technology in the Interest of Society (CITRIS) and SPH key participant in Blum Center for Developing Economies (2009-2010). Without baseline and measureable targets it is difficult to assess the school's progress. At the time of the site visit, measurable outcomes for the 2015-2020 strategic plan had not been developed. Administrators provided a proposed implementation plan for the new strategic plan that included an example of task timelines and targets and expected outcomes for the subsequent three years and beyond. Upon completion of the 2015-2020 strategic plan, the school must document that it has developed measurable objectives with targets, where appropriate, for the goals and objectives so that performance against the targets can be assessed.

The second concern is that the school ceased monitoring and assessing the progress in achieving the goals and objectives in 2012. The lack of monitoring and assessment left a significant three-year gap between then and the time that new goals and objectives would be developed as part of the 2015-2020 strategic plan. This criterion requires that a school of public health undertake ongoing, well-documented, systematic evaluation of its activities. The site visitors were informed that while formal monitoring of the goals and objectives ended in 2012, informal monitoring continued and some of the goals and objectives were used to guide the development of the 2015-2020 strategic plan. The 2015-2020 strategic plan should include a process for routinely monitoring and receiving input on meeting all the goals and objectives of the 2015-2020 strategic plan.

1.3 Institutional Environment.

The school shall be an integral part of an accredited institution of higher education and shall have the same level of independence and status accorded to professional schools in that institution.

This criterion is met. The University of California, Berkeley is accredited by the Accrediting Commission for Senior Colleges and Universities, Western Association of Schools and Colleges. In addition to public health, the university responds to other specialized accreditors in areas such as business, law, psychology and education. The school enjoys the same level of autonomy and authority as all other professional schools and colleges at the university.
Berkeley is a part of the University of California system, which includes 10 UC campuses located throughout the state of California. The university is governed by an institutional Board of Regents and the UC Office of the President. On the Berkeley campus, there are a total of 14 schools and colleges; the Colleges of Chemistry, Engineering, Environmental Design, Letters and Science and Natural Resources, and the Schools of Education, Business, Information, Journalism, Law, Optometry, Public Policy, Social Welfare and Public Health.

The UC Office of the President is responsible for the overall budget of all the institutions in the UC system. The Board of Regents approves the final budget for each institution. After approval of the institution’s budget, the chancellor disperses the funds to the executive vice chancellor/provost who then disperses the funds to the dean. The dean, with input from the associate deans and assistant deans is responsible for the development of the school’s budget and resource allocation.

The dean, in conjunction with the school’s Academic Senate, oversees recruitment, selection and advancement of all faculty and staff.

All faculty members in the Education Policy and Curriculum Committee within the school set academic standards and policies, with regard to the development and implementation of curriculum for all of the school’s degree programs. All faculty members are responsible for student admissions, with the Graduate Division granting final approval.

1.4 Organization and Administration.

The school shall provide an organizational setting conducive to public health learning, research and service. The organizational setting shall facilitate interdisciplinary communication, cooperation and collaboration that contribute to achieving the school’s public health mission. The organizational structure shall effectively support the work of the school’s constituents.

This criterion is met. The school provides an organizational setting conducive to public health learning, research and service. The school is considered to be one department of the Graduate Division and has six academic divisions: Biostatistics, Community Health and Human Development, Environmental Health Sciences, Epidemiology, Health Policy and Management and Infectious Diseases and Vaccinology. Each division is led by a division head (same function as a department chair), who is appointed by the dean.

The dean has executive authority and is assisted by four associate deans, four assistant deans and other division managers. Collectively, the deans and other administrative officers are responsible for academic affairs, administration, strategy, external affairs, development and communication, research, student affairs and finance.
The school supports collaborative efforts across divisions within the school and across other schools and colleges in the university. School faculty are recognized as productive researchers with a high success rate in receiving extramural support and are often sought by other units as collaborators. The school has embraced the university-wide initiative calling for inter-professional education by creating new partnerships, endorsing faculty exchange with other departments and fostering collaboration. The school collaborates with the Chancellor's Advisory Council on Biology, the Council of Science and Engineering Deans, The Blum Center for Developing Economics, the Berkeley Diversity Research Initiative and the Center for Public Health Practice, which support public health teaching, research and service.

During the site visit team’s meeting with the provost, he spoke highly of the school and stated that the SPH is very important to the university and has a very strong dean.

1.5 Governance.

The school administration and faculty shall have clearly defined rights and responsibilities concerning school governance and academic policies. Students shall, where appropriate, have participatory roles in conduct of school and program evaluation procedures, policy setting and decision making.

This criterion is met. The school has clearly defined rights and responsibilities concerning governance and academic policies. The school has four standing and two ad hoc committees that contribute to school governance. Faculty, staff, students and alumni are involved in the school’s operations.

The dean, associate and assistant deans, in conjunction with the Faculty Council and the Dean’s Administrative Council, are responsible for developing school policies. Members of the Faculty Council include the dean, all associate and assistant deans, a representative from each division and a student representative. The Faculty Council also has the authority to propose legislation to the school’s Academic Senate, which includes all faculty holding the titles of instructor, assistant professor, associate professor and professor. The Dean’s Administrative Council includes all of the associate and assistant deans of the SPH.

All faculty members including the school’s administration are involved in the development of strategic plans and the annual faculty recruitment academic plan. The dean oversees the entire evaluation process with the development of an annual dean’s performance report.

The dean, with input from the Dean’s Administrative Council and the Academic Senate, is responsible for budget and resource allocation. According to the UC system’s reporting lines, the provost distributes the proposed budget for each school to the deans.
The Student Services Unit conducts student recruitment. Admissions decisions are delegated to the Faculty Admission Committees for each program. Members of each program committee include representatives from each degree program, and student membership is encouraged. Each Admissions Committee forwards its recommendations to the Student Services Unit, and the recommendation is then forwarded to the university’s Graduate Division which makes the final decision. Prior to awarding any of the school’s degrees, the faculty advisor must certify that all degree requirements have been met. The school awards professional degrees, and the Graduate Division awards academic degrees.

The School of Public Health Academic Personnel Committee oversees the process for faculty recruitment. The dean sends a request to campus administration during the annual budget process for approval of the new faculty positions. A Search Committee is formed within the school to recruit and interview potential candidates. The Search Committee’s report for potential hires is forwarded to the dean, and then to campus administration for final approval. Members of the School of Public Health Academic Personnel Committee include one faculty member from each division, the dean and academic personnel manager. The dean oversees promotion and tenure in conjunction with the School of Public Health Academic Personnel Committee. An ad hoc committee is formed to evaluate each candidate for promotion or tenure. Members of the ad hoc committee include two members of the candidate’s division and an outside member from another division within the school. Campus administration has final approval for the appointment of new faculty and the promotion and tenure of existing faculty.

The Graduate Council and the Committee on Courses (campus-wide Academic Senate bodies) develop and implement campus-wide academic standards and polices, which the SPH uses as its standard. Faculty members in the SPH can also participate in these committees, and the school can amend and request exceptions to minimum standards when necessary.

To include external constituents in the governance of the school, the chair of the Faculty Council may appoint additional non-voting members such as alumni, community members and public health professionals. At the beginning of the self-study process, the Undergraduate Management Advisory Committee provided feedback on the information in the self-study, and community members on the Dean’s Policy Advisory Board were involved in the development process of the school’s most recent strategic plan and also provided feedback on the self-study document. The Alumni Association also plays a role in curricular development by assisting with mapping the courses to concentration competencies and by providing feedback to the dean in regards to the skills needed in the workforce.

Faculty members hold leadership positions and are members of seven university committees including the Graduate Council, the Status of Women & Ethnic Minorities Committee and the Student Diversity & Academic Development Committee.
Students have input into the school’s governance through participation on a variety of committees. Students are represented on the Faculty Council, a SPH committee. Students also participate in student-led committees and associations including, the Association of Public Health Infectious Diseases Students, Public Health Student Sports Committee, Health in All Policies, Institute for Healthcare Improvement, Multicultural Health in Action and the Multicultural Student Organization and Queering Public Health.

Students who met with the site visit team stated that faculty members are very open to receiving student input on different topics. One student mentioned that she was able to have a one-on-one meeting with the dean to express an area of concern that she had.

1.6 Fiscal Resources.

The school shall have financial resources adequate to fulfill its stated mission and goals, and its instructional, research and service objectives.

This criterion is met. The school currently has sufficient resources to fulfill its mission. The school’s budget is based on six sources: campus support from state allocations, professional degree fees, a self-supporting degree program, private gifts, sales and services and regents’ endowment income. The school’s sources of funds and expenditures are shown in Table 1.

The school receives funds from the university from a general fund that includes state funds, tuition, overhead funds and other resources. These funds are not distributed by a formula but on the basis of prior years’ “ongoing” funding decisions, viewed as the permanent budget. Requests are made only for incremental needs. In 2005, the school implemented the Professional Degree Supplemental Tuition Fee, which is $3,616 and can be retained by the school to fund increased expenses.

Indirect cost recovery funds are distributed based on a memorandum from the executive vice chancellor and provost starting in August 2013 as a pilot based on the transition to research administration through shared services at the university level. A working group recommended that 1.4% be used to avoid inequities among units, 2.6% be distributed to individual faculty members and 6.0% be distributed to vice chancellor for research and deans to address shared faculty research needs. The working group later suggested that qualified faculty receive $4,000 per year and that other funds be found if the 2.6% allocation was insufficient.

As a result of the economic downturns, there have been cuts to the university’s state allocation, which resulted in a $178 million decrease between fiscal year 2003 and 2014 ($497 million in FY2003 and $319 million in FY2014). To date, the university has absorbed these costs. Funds are distributed to individual campuses of the University of California System based on varying methodologies and not to individual schools on campuses. In a meeting with the chancellor, the site visit team learned that university
resources would be limited in the foreseeable future and that growth of faculty by any school, including the School of Public Health would be limited.

Overall, the school has sufficient fiscal resources, with ending balances growing over the past five years from $14 million to $16 million. Grant and contract expenditures have also grown from $54 million to $60 million.

Table 1. Sources of Funds & Expenditures By Major Categories

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<td>Academic Salaries</td>
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<td>Staff Salaries</td>
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<td>$6,692</td>
<td>$7,208</td>
<td>$7,051</td>
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<td>Fringe Benefits</td>
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<td>$5,361</td>
<td>$5,717</td>
<td>$6,383</td>
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<td>Scholarships and Fellowships</td>
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<td>$1,821</td>
<td>$1,980</td>
<td>$2,026</td>
<td>$2,332</td>
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<td>Fee Remission</td>
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<td>$713</td>
<td>$818</td>
<td>$916</td>
<td>$981</td>
</tr>
<tr>
<td>Travel</td>
<td>$650</td>
<td>$751</td>
<td>$631</td>
<td>$532</td>
<td>$655</td>
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<tr>
<td>All Other</td>
<td>$6,509</td>
<td>$4,307</td>
<td>$5,487</td>
<td>$3,979</td>
<td>$5,226</td>
</tr>
<tr>
<td>Total Expenditures - Non C&amp;G</td>
<td>$30,824</td>
<td>$31,513</td>
<td>$34,273</td>
<td>$34,080</td>
<td>$35,333</td>
</tr>
<tr>
<td>Total Expenditures - Contracts &amp; Grants</td>
<td>$59,037</td>
<td>$54,813</td>
<td>$55,944</td>
<td>$55,956</td>
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<tr>
<td>Grand Total Expenditures</td>
<td>$89,861</td>
<td>$86,326</td>
<td>$90,217</td>
<td>$90,036</td>
<td>$95,819</td>
</tr>
<tr>
<td>Net Operations</td>
<td>$3,783</td>
<td>$759</td>
<td>$(665)²</td>
<td>$361</td>
<td>$603</td>
</tr>
<tr>
<td>Beginning Balance</td>
<td>$11,206</td>
<td>$14,972</td>
<td>$15,782</td>
<td>$15,095</td>
<td>$15,506</td>
</tr>
<tr>
<td>Total Change in Net Assets</td>
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<td>$759</td>
<td>$(667)²</td>
<td>$411</td>
<td>$1,224</td>
</tr>
<tr>
<td>Ending Balance</td>
<td>$14,989</td>
<td>$15,731</td>
<td>$15,095</td>
<td>$15,506</td>
<td>$16,731</td>
</tr>
</tbody>
</table>

1 Elements of ‘campus support’ prior to 2012-13 mapped to ‘other’ due to implementation of new reporting tool.
2 Net negative source of funds due to repayment of start-up loan for online/on-campus MPH program.

1.7 Faculty and Other Resources.

The school shall have personnel and other resources adequate to fulfill its stated mission and goals, and its instructional, research and service objectives.

This criterion is met. The school has personnel and other resources adequate to fulfill its stated mission and goals, and its instructional, research and service objectives.

Faculty headcount data show a steady increase in the number of faculty over the last five years. Most of the growth has been in the Division of Health Policy and Management. As of September 2015, the school
has a total of 73 primary faculty members and 63 other faculty members. The school offers doctoral programs in each core area and has an adequate faculty complement for each. The biostatistics area has eight primary faculty members, community health and human development has 22, environmental health sciences has 12, epidemiology has 12, health policy and management has 12 and infectious disease has seven. All primary faculty members support school-wide programs which include the DrPH, interdisciplinary MPH, on-campus/online MPH and undergraduate programs.

The student-faculty ratios are below 10:1 and support effective and regular student/faculty interactions. The SFR for FY 2015 was 6.29 based on primary faculty and 4.75 for all faculty. The SFR has declined slightly over the past four years, indicating the availability of consistently adequate numbers of faculty in virtually all areas of study over time.

The number of staff members to support the school is also adequate to provide services to students and faculty in all areas of need. The school has a total of 182 staff members who contribute 152.52 FTE. The staff complement includes a communications manager, finance, IT, research and student services personnel. The largest numbers of these staff support general administration (62), information technology (10), research administration (21), research and laboratory activities (39) and student services (15).

The school occupies 102,000 assignable square feet of administrative, instructional and research space largely in two campus buildings, University Hall and Haviland Hall. Classroom space is shared with other schools on the campus. The school has some research space off-campus and in the Li Ka-Shing Center for Biomedical and Health Sciences. In 2014, the governor and legislature approved $75 million in funding to build a new home for the School of Public Health, which they will share with the School of Education and the Department of Psychology.

Of the 102,000 available square square feet, the school has 43,926 square feet of on-campus research space and 13,407 square feet of leased space, including both dry and wet laboratory space. Wet space is located in three buildings on campus. Equipment is located in laboratories and research lab service areas for common use.

All students are required to own or have access to a personal computer. Students also have access to wireless connections across campus and in public health classrooms, lounges and libraries. Students may also use all campus computing facilities and services, and the school has two computerized classrooms for courses in biostatistics, epidemiology and environmental health. The school also provides formal instruction and consulting, technical support and web based resources. The school provides computer hardware, software, networking and technical support though campus-wide and on-site services for all faculty, staff and administration.
Library facilities for the school are unique in that the school is associated with the Sheldon Margen Public Health Library, one of the two stand-alone public health libraries in the country. This library contains more than 108,000 volumes and receives approximately 300 print serial titles, with an increasing number of serials and books available in electronic format. The library has dedicated librarians and staff and provides access to specialized databases, relevant training and consultation and seating space for 57 readers with access to free software. Faculty, staff and students also have access to the resources of other campus specialized libraries and the UC Berkeley library licenses.

The school has identified four outcome measures to assess the adequacy of its resources. The objectives are as follow: to ensure that the total number of applicants for all degree programs are above 1000 each year, to ensure that there are more than 139 students that graduate from the undergraduate programs each year, to increase the number of primary faculty and to increase the number of other teaching faculty. The school has met all of its targets for the most recent academic year.

1.8 Diversity.

The school shall demonstrate a commitment to diversity and shall evidence an ongoing practice of cultural competence in learning, research and service practices.

This criterion is met. The school demonstrates a commitment to diversity and evidences an ongoing practice of cultural competence in learning, research and service practices.

The school defines its underrepresented minority populations as Chicano/Latino, African American, Native American-Alaska Native, Vietnamese/Thai/Cambodian/Pacific Islander, Laotian, Filipino and Hmong. According to 2014 data provided in the self-study, 10% of the undergraduate student population were Chicano/Latino, 9% of graduate students were African/Americans, 48% of the faculty were female and 13.3% of the staff were Chicano/Latino. The 2014-2015 data received during the site visit indicates an overall undergraduate and graduate URM population of 34% and 21% within the SPH.

The university and school have clear, well documented policies and procedures to address discrimination and harassment. Codes of conduct for students, faculty and staff, as well as personnel policies and academic policies are readily available. The UC Berkeley Office for the Prevention of Harassment and Discrimination ensures an environment free of discrimination and harassment on the basis of race, color, national origin, gender, age and sexual orientation. The Academic Compliance and Disability Standards Office handles disability complaints and the Office of Human Resources handles non-academic staff complaints in accordance with personnel policies and contracts. The SPH subscribes to the University of California’s Principles of Community that support diversity, dignity and communities of justice. The school has developed a campus-wide collaborative statement with students, faculty, staff and alumni that serves as an affirmation of the intrinsic values of each member of the community.
The self-study documents a variety of opportunities to address diversity in the curriculum. Policies and procedures are in place to develop, review and maintain curricula that address diversity and cultural competence and service learning opportunities. Students have the opportunity to take courses in ethnic and cultural diversity and obtain a multicultural health certificate in addition to their degree. This specialty area requires nine units. The Multicultural Health in Action Student Group is active in “local communities of need” and an annual ‘Faculty Tea’ is held to introduce multi-cultural opportunities. Students are also exposed to multi-cultural concerns, participate in community partnerships to address health inequities, and engage in research to resolve health issues. The SPH also maintains a webpage dedicated to student groups, including Multicultural Health in Action, a student-run organization that provides health education and academic support to disadvantaged populations in the East Bay.

The SPH strives to support and maintain a diverse faculty by following the university's guidelines. When permission is received for new appointments, faculty members form a search committee, and the position is advertised through publications, notices at meetings, letters to other schools and networking processes. Once potential candidates are identified, the committee contacts the candidate. In efforts to recruit diverse faculty, new faculty positions are vetted through a clearly defined process that address affirmative action and seeks to find and hire minorities. However, the SPH acknowledges the challenge to reach diversity goals for gender and minority recruitment due to a limited number of diverse candidates. During the site visit, the team learned that in a recent recruitment process, the diversity in the applicants was greater than in the past, suggesting that what they are doing is working.

Student diversity efforts are centered in the SPH Office of Diversity Services. The school’s diversity planning and policy development are on-going and reflective of the university’s and school’s commitment. The director and outreach coordinator provide admission advising, career workshops and application assistance. Multiple programs and services directed toward prospective students include a summer preparatory seminar, one-on-one advising, admissions information sessions, GRE preparation, application assistance and summer research opportunities. The Graduate Advising & Diversity Services is a volunteer student ambassadors program that works with prospective students during the application process. During the site visit, representatives from the Diversity Office indicated that they provided advising service to minority students and elaborated on the summer preparatory course and explained that it provides opportunities for the minority cohort to bond and form a reliable cohort among students. The SPH also partners with several HCBUs to offer mentoring programs and has recently initiated African Male Pipeline Project to create a pipeline for 30 8th grade students from the West Contra County and Oakland Unified School Districts to engage in robust academic preparation.
Under-represented minority information is obtained from applications and enrollment data, aggregated for applications, admits, and matriculates, then compared to yearly data to measure progress toward the diversity goals. A qualitative analysis of the Summer Preparatory Seminar is used to evaluate the components of the program. Modifications are made based on the analysis to meet goals and objectives to increase student diversity. Although the self-study does not define outcome measures for diversity and the last data reported is from 2011-2012, site visitors were told that measurable goals and objectives are being developed and that the new 2015-2020 Strategic Plan will have baseline data and benchmarks to measure progress.

2.0 INSTRUCTIONAL PROGRAMS.

2.1 Degree Offerings.

The school shall offer instructional programs reflecting its stated mission and goals, leading to the Master of Public Health (MPH) or equivalent professional master’s degree in at least the five areas of knowledge basic to public health. The school may offer other degrees, professional and academic, and other areas of specialization, if consistent with its mission and resources.

This criterion is met. As illustrated in Table 2, the school offers a BA in public health; an MPH in biostatistics, environmental health sciences, epidemiology, health and social behavior, health policy and management, infectious diseases & vaccinology and maternal child health; an interdisciplinary MPH; an MA in biostatistics; an MS in environmental health sciences and epidemiology; a PhD in biostatistics, environmental health sciences, epidemiology, health services and policy analysis and infectious diseases and immunity; a DrPH; and five joint degree programs. An accelerated 11-month MPH program is offered in maternal and child health, environmental health sciences, epidemiology, health policy and management and in the interdisciplinary program; 11-month programs are generally limited to students with a prior doctoral degree or concurrently enrolled in a doctoral degree program who have completed undergraduate and graduate work in specific courses outlined by each program.

Site visitors’ review of MPH syllabi from the concentration areas show appropriate breadth and depth of content. In addition to coursework in the five core public health knowledge areas, concentration-specific required coursework include topics in indoor air quality, molecular and genetic epidemiology, theoretical statistics, and risk analysis. Students complete the degree with advisor-approved electives, a practicum and a culminating experience.

During the site visit team’s meeting with students, they stated that they liked the flexibility of the curricula and being able to take courses that they are interested in.
### Table 2. Instructional Matrix

<table>
<thead>
<tr>
<th>Degree</th>
<th>Academic</th>
<th>Professional</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Bachelor Degrees</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bachelor of Arts in Public</td>
<td>BA</td>
<td></td>
</tr>
<tr>
<td>Health through UC Berkeley</td>
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<td></td>
</tr>
<tr>
<td>College of Letters and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Science</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Masters Degrees</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biostatistics</td>
<td>MA</td>
<td>MPH</td>
</tr>
<tr>
<td>Epidemiology/Biostatistics</td>
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<td></td>
</tr>
<tr>
<td>Environmental Health</td>
<td>MS</td>
<td>MPH, 11-mo MPH</td>
</tr>
<tr>
<td>Sciences</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Environmental Health</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sciences – Global Health</td>
<td>MS</td>
<td></td>
</tr>
<tr>
<td>Epidemiology</td>
<td></td>
<td>MPH, 11-mo MPH</td>
</tr>
<tr>
<td>Health and Social Behavior*</td>
<td></td>
<td>MPH</td>
</tr>
<tr>
<td>Health Policy and Management</td>
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<td>MPH, 11-mo MPH</td>
</tr>
<tr>
<td>Infectious Diseases &amp;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaccinology</td>
<td></td>
<td></td>
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<tr>
<td>Interdisciplinary Program</td>
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<td>MPH</td>
</tr>
<tr>
<td>Maternal and Child Health*</td>
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<td>MPH, 11-mo MPH</td>
</tr>
<tr>
<td>On-Campus/Online Program</td>
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<td>MPH</td>
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<tr>
<td><strong>Combined Degrees</strong></td>
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<td></td>
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<tr>
<td>Business/Public Health</td>
<td>MBA/MPH</td>
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<tr>
<td>City Planning/Public Health</td>
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<tr>
<td>Journalism/Public Health</td>
<td>MCP/MPH</td>
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<tr>
<td>Public Policy/Public Health</td>
<td>MJ/MPH</td>
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<tr>
<td>Social Welfare/Public Health</td>
<td>MPP/MPH</td>
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<td>Journalism/Public Health</td>
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<td>Social Welfare/Public Health</td>
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<td><strong>Intercampus Doctoral Level Programs</strong></td>
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<td>Joint Medical Program (Joint Degree/UCSF)</td>
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<td>MPH/MD</td>
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<tr>
<td>Stanford University MD/MPH</td>
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<tr>
<td><strong>Specialty Areas</strong></td>
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<tr>
<td>Maternal and Child Health* -</td>
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<td>Minor</td>
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<tr>
<td>Aging</td>
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<tr>
<td>Maternal and Child Health* -</td>
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<td>Minor</td>
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<td>International Health</td>
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</tr>
<tr>
<td>Maternal and Child Health* -</td>
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<td>Minor</td>
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<tr>
<td>Multicultural Health</td>
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<tr>
<td><strong>Doctoral Degrees</strong></td>
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<td>General</td>
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<tr>
<td>Biostatistics</td>
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<tr>
<td>Environmental Health Sciences</td>
<td>PhD</td>
<td></td>
</tr>
<tr>
<td>Epidemiology</td>
<td>PhD</td>
<td></td>
</tr>
<tr>
<td>Health Services &amp; Policy</td>
<td>PhD</td>
<td></td>
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<tr>
<td>Analysis</td>
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<td></td>
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<tr>
<td>Infectious Diseases &amp;</td>
<td>PhD</td>
<td></td>
</tr>
<tr>
<td>Immunity</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Housed in the SPH Division of Community Health and Human Development

**MCH masters and doctoral students may add a specialty area requiring nine units of course work. A minor is offered to students enrolled in other SPH two-year MPH or doctoral programs.

### 2.2 Program Length.

An MPH degree program or equivalent professional public health master’s degree must be at least 42 semester-credit units in length.

This criterion is met. All MPH degrees offered by the school require a minimum of 42 semester units. The accelerated 11-month MPH programs require 42 units while the professional MPH program requires 48
semester units of coursework and public health practice. Fifteen contact hours equals one semester unit for didactic courses.

After review of the school’s website and the student handbooks for each program, site visitors noted an inconsistency among the curricular information provided to the students on the website and in the information provided in the student handbook. Though the information provided in the self-study states the required units for each degree, the curricula provided on the website does not account for all of the units. The school's website indicates for example, that the online MPH in biostatistics requires 48 units for completion, however the curriculum provided only accounts for 36 units, and the student handbook does not list units for each individual course. This was also the case for the 11-month MPH degrees. The curriculum provided on the website listed all of the required 42 units, however the units for the practicum are not included. Site visitors were concerned that this may be confusing to students as they matriculate through the programs, however during the meeting with students, students expressed their satisfaction with the clarity of the curriculum, and they noted that their advisors were helpful in providing curricular information and keeping them on track.

No MPH degrees have been awarded for fewer than 42 semester credit hours in the past three years.

2.3 Public Health Core Knowledge.

All graduate professional degree public health students must complete sufficient coursework to attain depth and breadth in the five core areas of public health knowledge.

This criterion is partially met. All master’s-level professional degree programs require that students take at least one course in each of the five core areas of public health (breadth courses) as displayed in Table 3. Many students enter the DrPH program with an MPH. Students without an MPH must take prerequisite courses, which include the school’s master’s-level breadth courses, in addition to their required doctoral level courses.

The concern relates to the core biostatistics course (PH 142). This course is an undergraduate course that both undergraduate and graduate students take as one of the five breadth courses. After review of the syllabus and competencies for the course, the site visit team determined that the competencies and learning objectives are set at an undergraduate level rather than at a master’s level. Faculty stated that currently, there are two distinct sections of the course, which allows the undergraduate students to be taught separately from the MPH students. However, the section of the PH 142 biostatistics course that the master’s students take does not allow the master’s students to gain experience in using statistical software. Students stated that they were unsatisfied with the fact that they were not using statistical software and had to learn different statistical methods by hand, and that the course does not provide the skills that they think a master’s student should acquire. Faculty members stated that they do not consider
it a disadvantage to have both undergraduate and graduate students in the same classroom. Faculty members also stated that they have noticed the MPH students benefiting from the undergraduate students’ skills in manipulating formulas, and the undergraduate students benefiting from the experience of the graduate students. Some students also expressed that it was not logical to take the course because it was at such a beginner level, so they tested out of having to take it. Site visitors are concluded that the current arrangement may have a negative effect on the level of public health training graduate students are receiving.

<table>
<thead>
<tr>
<th>Core Knowledge Area</th>
<th>Course Number &amp; Title</th>
<th>Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>Biostatistics</td>
<td>PH142: Introduction to Probability and Statistics</td>
<td>4</td>
</tr>
<tr>
<td>Epidemiology</td>
<td>PH250A: Epidemiologic Methods</td>
<td>3</td>
</tr>
<tr>
<td>Environmental Health Sciences</td>
<td>PH200C2: Environmental Health Sciences Breadth Course</td>
<td>2</td>
</tr>
<tr>
<td>Social &amp; Behavioral Sciences</td>
<td>PH200C3: Health and Social Behavior Breadth</td>
<td>2</td>
</tr>
<tr>
<td>Health Services Administration</td>
<td>PH200C1: Health Policy and Management Breadth Course</td>
<td>2</td>
</tr>
</tbody>
</table>

2.4 Practical Skills.

All graduate professional public health degree students must develop skills in basic public health concepts and demonstrate the application of these concepts through a practice experience that is relevant to students’ areas of specialization.

This criterion is met. All graduate professional public health degree students develop skills in basic public health concepts and demonstrate the application of these concepts through a practice experience that is relevant to students’ areas of specialization. The SPH’s Center for Public Health Practice (CPHP) oversees all practicum placements and has a defined process for waiver requests. The requirements are outlined in the student handbook, which states that the waiver must be approved by the faculty graduate advisor. No waivers have been granted for the past seven years.

The practice requirement generally consists of a twelve-week experience, typically 480 hours, although specific requirements vary by program. The two-year professional MPH requires a three-month internship experience; the MPH Health Policy and Management concentration may opt to complete a six-month internship. The one-year MPH requires students to complete a year-long research or leadership project focused on a student’s concentration area while completing coursework. The on-campus/online MPH requires a 130-hour practicum. The concurrent and dual degree MPH includes a full-time summer field experience based on the same procedures and processes outlined for the two-year MPH student.
The SPH has two residency programs offered in conjunction with University of California San Francisco (UCSF): the two-year General Preventive Medicine and Public Health residency program and the Occupational and Environmental residency program which also requires two years of training. A total of five students have graduated from the General Preventive Medicine and Public Health residency program between 2011 through 2013. A total of four students have graduated from the Occupational and Environmental residency program between 2010 through 2012.

DrPH students complete a professional and/or research residency in a public health setting after their first full year of study that affords the opportunity to identify data for dissertation research, conduct analysis and participate in projects of interest.

Practice experiences are scheduled for the summer after the first year of study. The CPHP maintains a data base of approximately 4000 potential contacts based on relationships with community partners, employers, alumni and recruits. The SPH identifies 167 participating agencies and preceptors during fiscal year 2012/2013 by program: health policy management (24 reported activities), environmental health sciences (10 reported activities), maternal and child health (18 reported activities), health and social behavior (46 reported activities), infectious diseases and vaccinology (29 reported activities) and epidemiology/biostatistics (40 reported activities).

The CPHP has a staff of field supervisors, one for each concentration, who are typically master’s trained individuals. Field supervisors have principal oversight for the public health practice requirement, while academic faculty develop the learning objectives, align the competencies and assist with site selection. CPHP begins recruitment for internships in November and posts opportunities in January. After formal interviews, CPHP field supervisors make the final placement decisions based on the organizations’ placement matching recommendations and the students’ ranking and placement preferences.

The SPH has written student guidelines that clearly establish the internship requirements and expectations. Preparation for the internship begins with orientation and spans the school year. Students complete a pre-internship self-assessment to identify areas in which they need help to strengthen the competencies required for their individual program. This four-page assessment clearly defines public health skills and competencies and allows students to rank their abilities on a five point Likert scale. During the development process, the career services manager is available to assist students to refine their career options, internship options and resume development. Weekly workshops titled “What can you do with a public health degree?” expose students to public health professionals from all concentrations and a variety of health organizations. Students are also encouraged to conduct informational interviews with organizations of interest.
Written preceptor guidelines clearly state the internship requirements and expectations. A host organization is expected to have core public health concepts as its mission, expose students to a variety of disciplines and provide opportunities to develop a professional network and have capacity to manage the student. Agencies may be governmental, community based, educational, volunteer, non-profit and private; local, state, national or international; or research based. Preceptors are preferred to have an MPH or degree in a related field, are required to have professional expertise and demonstrated ability to mentor and teach students. CPHP provides all preceptors with written guidelines detailing the preceptor and student responsibilities. Webinars are available to introduce the field supervisors and review roles, responsibilities, timelines, and deliverables.

All students complete a formal internship agreement that establishes and clearly defines the competencies for their areas of concentration, objectives, activities, timeline and deliverables. The agreement is used both as a planning and communication tool and to evaluate progress and accomplishments. Upon completion, students are expected to complete a final project (case study, poster, presentation, or journal article) and submit a student evaluation of the internship site, preceptor, process and preparation. Preceptors are asked to review the evaluation with students to enhance professional growth.

Students and preceptors had high regard for the practicum process, and stated that the process was easy and beneficial to both interns and the organization.

In response to inquiries concerning the practice skills for the on-campus/on-line MPH practice requirements, site visitors were told that the preference is that students complete their practicum outside of their current professional activities and knowledge base to build a new network base and to experience other aspects of public health practice. However, students may perform the 130 hour practicum in their current place of work only if it is for separate activities that report to a different supervisor. Students in the 2105 summer cohort will be the first students required to complete the practicum. The online program also has a dedicated advisor who is responsible to assist the cohort through the field placement process.

### 2.5 Culminating Experience

All graduate professional degree programs, both professional public health and other professional degree programs, identified in the instructional matrix shall assure that each student demonstrates skills and integration of knowledge through a culminating experience.

This criterion is met. All students seeking a graduate professional degree are required to complete a culminating experience that is designed to demonstrate the ability to synthesize and integrate knowledge obtained through course work and the practicum.
Culminating experience requirements vary by degree program. For the two-year MPH degree, the culminating experience is a comprehensive examination and a thesis. The nature of the exam differs among the divisions and ranges from essay-based answers to short answer questions, to students writing a grant proposal, a critical review or conducting a meta-analysis. Other options include an oral presentation accompanied by an oral examination by faculty.

Site visitors reviewed student examples of various comprehensive exam options. The environmental health sciences comprehensive exam, which consists of four broad essay-styled questions, each of which covered a particular area of environmental health. Students provided responses, citing the research literature in their answers, but it was not apparent that the students are expected to draw from the five core areas of public health in presenting their answers to demonstrate integration of skills from across the curriculum.

For the 11-month MPH degree in environmental health sciences, epidemiology, health policy and management and the interdisciplinary MPH, students are required to complete a comprehensive examination consisting of written and oral components. Maternal and Child Health requires either a comprehensive examination or a capstone research project similar to the two-year student thesis. A written comprehensive proctored examination is also required for the on-campus/online MPH degree.

The final degree requirement for the DrPH is a dissertation. As part of the dissertation, the student is expected to examine, analyze, and suggest a solution to a problem in public health practice. The dissertation format typically takes one of two forms: 1) a unified thesis; or 2) three publishable papers based on research bracketed by introductory, transitional and concluding sections within the papers.

2.6 Required Competencies.

For each degree program and area of specialization within each program identified in the instructional matrix, there shall be clearly stated competencies that guide the development of degree programs. The school must identify competencies for graduate professional public health, other professional and academic degree programs and specializations at all levels (bachelor’s, master’s and doctoral).

This criterion is partially met. The school has identified a set of competencies for each concentration and developed accompanying matrices for each set of competencies.

The core competencies were originally developed in 2008, using the ASSPH core competencies as a framework. Faculty members had an opportunity to review the core competencies and provide input. All faculty members were involved in the process of reviewing and implementing the concentration competencies.
The first concern relates to the BA core competencies. The school has identified an extensive list of 39 core competencies for the BA degree program. The competencies are mapped to the five core courses that undergraduate students are required to take and range in a list of one to 22 for each course. The competencies vary in specificity and skill level. For example, one of the competencies mapped to the epidemiology core course states “Understanding of study design, including exposure outcome, problems of error and bias” and a competency mapped to the health policy core course states “Understand Pharmaceuticals and Medicare Part D.” The school attempts to map two core competencies to the health policy course (3 units), while mapping only one competency to the biostatistics course (4 units). Site visitors found it difficult to verify that all of the competencies are thoroughly addressed throughout introductory coursework.

The school has identified 25 concentration competencies, categorized as either critical thinking skills, quantitative skills, communication skills, problem-solving skills, or specialized knowledge and lifelong learning skills. Each category has a range of three to six competencies.

The second concern relates to the revision of the all core and concentration competencies. As stated by faculty members, the core competencies have not been significantly reviewed or updated since the last accreditation review cycle in 2008. This is also the case for most of the concentration competencies. Site visitors noted that environmental health, health policy and management and the online MPH have developed best practices in regards to competency development and framing the curricula around the competencies. Moving forward, it would be beneficial for other divisions to collaborate with these divisions to improve the concentration competencies.

The third concern relates to the core competencies. The school has provided an extensive list of 72 core competencies (including 35 cross-cutting competencies), written across widely varying levels of specificity and skill level. For example, one of the biostatistics core competencies states “Have a basic understanding of biostatistics” and another cross-cutting core competency states “Integrate general biological and molecular concepts into public health.” The school attempts to map 32 core competencies to one three unit course, while mapping only three competencies to another three unit course. Site visitors found it difficult to verify that all of the competencies are thoroughly addressed in 16 credits of introductory coursework. Faculty acknowledged the need to streamline and consolidate the number of competencies into a more appropriate, effective and manageable system.

The fourth area of concern relates to the extensive repetition among some of the epidemiology/biostatistics MPH, epidemiology MPH and health and social behavior MPH concentration-specific competencies. Six out of the eight biostatistics/epidemiology MPH concentration competencies are exactly the same competencies as the core competencies that are mapped to the undergraduate
biostatistics core course PH142. Nine of the 10 epidemiology concentration competencies were exactly the same as the core competencies that were mapped to the epidemiology core course. All of the health and social behavior concentration competencies were exactly the same competencies that were listed as core competencies that mapped to the health and social behavior core course. Only the environmental health concentration competencies were different from the core competencies. This criterion states that each concentration should have a distinct set of competencies, specific to the concentration, that require students to attain a more in-depth level of skill, knowledge and content, than that of the core competencies that are mapped to introductory-level courses. Faculty members stated that it was assumed that the core competencies should have crossed over into the concentration competencies.

The fifth concern relates to the MPH biostatistics concentration competencies. After careful review of the information provided in the self-study document, site visitors found that the biostatistics concentration did not have a distinct set of competencies. The competency set is identical to the epidemiology/biostatistics concentration. This criterion requires that each concentration has its own distinct set of competencies. Faculty members state that although the biostatistics MPH degree is offered, students traditionally enroll in the epidemiology/biostatistics program because students acquire the necessary knowledge and experience that is needed in the field through the combined program. Although this may be the case, this criterion requires that there is a distinct set of competencies for each concentration within the school.

The sixth concern relates to the apparent disconnect in using the competencies to guide the curriculum planning process as it relates to the curricula for the academic biostatistics degrees. According to the matrices, several of the biostatistics MA and biostatistics PhD concentration competencies, are not mapped to any of the courses, and the PhD competencies lacked an appropriately advanced and complex scope of knowledge. Examples of the MA competencies include “computational statistics,” “conduct research independently,” “longitudinal data analysis” and “causal inference.” The PhD concentration competencies include “conduct research independently” and “teach statistics at the university level,” along with the concentration competencies for the MA degree. Faculty members admitted that they have had difficulty in developing the competencies and differentiating them from course-specific learning objectives, and that the idea of competencies was new to them because they do not consider the academic degrees to be public health degrees. Faculty also stated that it was difficult to map the courses to the competencies because the curriculum is flexible in that students choose which courses they want to take. Faculty members acknowledged that the process of developing the competencies highlight the inconsistencies in mapping the courses to the competencies and linking the competencies to assessment activities.

The final concern relates to the large number of DrPH and interdisciplinary MPH competencies. The DrPH competencies does not show evidence of appropriate mapping of courses to the competencies. Though
the school provides a clear set of competencies (18 core and concentration), they are mapped to a list of nine courses. The other 115 courses that students have the option to choose from to fulfill the degree requirements are not mapped to competencies at all. Site visitors could not verify, for example, that the course NST 103-Nutrient Function and Metabolism, one of the offered courses that is not mapped to the competencies, addresses the competency that states, “Initiate, organize, and pursue the investigation of significant problems in public health practice” or “Identify policy issues in public health and contribute to policy analysis and decision making”. Faculty members in the DrPH division stated that they review the courses, especially those that are not offered by the SPH, and they try to ensure that the courses will allow students to attain the DrPH competencies. This is also the case for the interdisciplinary MPH. The list of concentration competencies for the interdisciplinary MPH are long and cover a wide array of topics that are also difficult to map to all courses. The competency matrix maps the competencies to only three courses, and all three syllabi indicate that the list of 41 competences will be covered in all three courses. Some examples of the interdisciplinary concentration competencies included “Prepare public health manuscript for peer reviewed publication” and “actively synthesize and reflect on course and project work across the MPH program to inform future career.” The self-study acknowledges the variability of the interdisciplinary competencies and noted that each individual student’s curriculum will be highly variable and dependent on their specific interest, which is the reasoning behind an extensive list of competencies. Faculty members in the interdisciplinary division stated that they develop a learning plan with each student, in which the student and faculty member maps out the courses that the student will take throughout the program and ensures that each course will provide the necessary competencies. Faculty also stated that they will work on streamlining the competencies.

Competencies are made available on the SPH website and are outlined in the student handbook for each degree program. In addition, the course syllabi list learning objectives for each required course within in each program.

2.7 Assessment Procedures.

There shall be procedures for assessing and documenting the extent to which each professional public health, other professional and academic degree student has demonstrated achievement of the competencies defined for his or her degree program and area of concentration.

This criterion is partially met. The school has established procedures beyond course grades to assess students’ mastery of competencies for each degree program and concentration.

According to the information provided in the self-study, the school uses evaluations and written reports from students, preceptors and field program supervisors and post-residency seminars to monitor competency attainment for each student. The school also uses the employer survey for gathering information about students’ mastery of competencies. The self-study mentions a competency portfolio that allows students to self-assess their competency attainment, however, this was not consistent across
divisions, and when asked, students who met with the site visit team either did not know about the portfolio or stated that there was no follow up from faculty after the initial self-assessment. The self-study also mentions the exit survey and alumni survey as tools that are used to assess competency attainment, however after careful review of both surveys, site visitors noted that the exit survey assesses general skills, and the alumni survey does not ask students to assess competency attainment.

The first concern relates to the school’s method of assessing competencies within the BA degree. Currently, competency attainment for students in the BA program is assessed solely by course grades. Within each course, students participate in discussions, exams, projects and papers. Once the capstone course is implemented, the school intends to use that course as another tool for assessing competency attainment. As stated in this criterion, the school must have tools of assessing competency attainment beyond required coursework.

The school has a systematic and consistent process for assessing competency attainment for MPH and DrPH students through the completion of the practicum across all divisions. Once a student has secured a field experience, the field supervisor assists the student with determining the competencies that they will achieve throughout their field experience. In the online MPH program, competency attainment is also assessed through the comprehensive exam. The health policy and management division also assesses competency attainment by creating a proposal document for the comprehensive exam that denotes the skills that students want to demonstrate.

The second concern relates to the school’s methods for assessing the concentration competencies among the academic degrees. The self-study states that the school monitors competency attainment for PhD students through the completion of a qualifying exam (written and oral components) and a dissertation. Each student must have a faculty committee, which provides guidance throughout the qualifying exam and dissertation and monitors the progress each student makes towards competency attainment. Academic degree faculty members stated that it was never on the agenda to assess the competencies beyond the course work, specifically through the dissertation. Faculty members also stated that they assessed proficiency in general content area such as students’ ability to conduct research, for example, but assessment methods for the concentration competencies were not specifically linked to the qualifying exam or the dissertation. During the meeting with students, several students stated that they were not required to link the concentration competencies to their dissertation or qualifying exams; they were only required to choose another area of public health outside of their degree concentration to be included in their dissertation.

Undergraduate students normally graduate from the BA program two years after enrollment. Students have the option of graduating at the end of any of the three semesters (spring, summer, and fall), and
applying/matriculating at the beginning of any of the three semesters as well. Of the most recent academic year 2014-2015, there was graduation rate of 96%, with 25 students continuing.

All master’s-level students have a maximum allowable time of two years to graduate. PhD and DrPH students have five years. The graduation rate for the 2013-2014 cohort in the MPH programs is 88%. For the most recent academic year (2014-2015), there are a total of 152 continuing students in the MPH programs, 24 students have graduated. The 2013-2014 cohort in the MA program has achieved a graduation rate of 100%. For the most recent academic year (2013-2014), there are a total of 11 continuing students. The 2013-2014 cohort in the MS program has achieved a graduation rate of 100%, with six students continuing.

The 2010-2011 cohort in the DrPH program has achieved a graduation rate of 60%, with eight continuing students. The 2009-2010 cohort in the PhD programs has achieved a graduation rate of 84%, with 18 continuing students.

The school collects job placement data for all programs through the exit survey conducted at the time of graduation and then through follow-up emails to non-responders within six months of graduation. The school receives most of its job placement data through the annual career destinations survey of graduate degree students, administered by career services. There were a total of 141 MPH students who graduated in the academic year 2013-2014; 78% were employed; 15% were continuing education; 6% were actively seeking employment; and 1% was not seeking employment by choice. MA students who graduated during this same academic year had a 100% employment rate. Among the five MS students who graduated during this same academic year, 60% were employed, 20% were continuing education and 20% were not seeking employment. Among the 26 PhD students who graduated during this same academic year, 85% were employed, 8% were continuing education, 4% were actively seeking employment and 4% were not seeking employment. During the same academic year, there were 111 students who graduated from the BA program; 51% were employed, 36% were continuing education, 10% were actively seeking employment, 1% were not seeking employment and 2% were unknown.

The final concern relates to low employment rates for the DrPH program. A total of eight students graduated from the DrPH program during academic year 2013-2014; 63% were employed, 25% were actively seeking employment and 13% were unknown. Site visitors inquired about low employment rates and faculty members stated that they were unaware that the employment rates were below the required 80%. As this criterion states, job placement rates must be monitored and should also be as high as the school can reasonably attain, but no lower than 80% by degree among graduates who can be located.
The school conducts assessments of its graduates’ ability to perform competencies through an employer survey. In summer 2014, the SPH distributed the employer survey to 1000 employers and asked them to provide feedback on the graduates’ level of proficiency the five core areas of public health, and to provide any curricular improvements that the school could make. A total of 159 employers responded to the survey. Twenty-five skills and competencies were listed and employers were asked to rank their employees proficiency within each skill and competency from 1-5, with 5 being the most proficient. The average percentage of rankings for SPH students was 3.89% with the highest rankings (4.25% or higher) in the following categories: cultural competency, problem solving, critical thinking, initiative, teamwork, and both oral and written communication. Five of these particular skills and competencies were noted as the most important for long-term success. Of the responders, 100% indicated they would recommend hiring SPH graduates to their colleagues.

During a meeting with employers and community stakeholders, employers, community partners and preceptors stated that graduates from the school were hardworking, dedicated and very competent, and that having interns and graduates from the SPH is very beneficial for their organizations.

2.8 Other Graduate Professional Degrees.

If the school offers curricula for graduate professional degrees other than the MPH or equivalent public health degrees, students pursing them must be grounded in basic public health knowledge.

This criterion is not applicable.

2.9 Bachelor’s Degrees in Public Health.

If the school offers baccalaureate public health degrees, they shall include the following elements:

Required Coursework in Public Health Core Knowledge: students must complete courses that provide a basic understanding of the five core public health knowledge areas defined in Criterion 2.1, including one course that focuses on epidemiology. Collectively, this coursework should be at least the equivalent of 12 semester-credit hours.

Elective Public Health Coursework: in addition to the required public health core knowledge courses, students must complete additional public health-related courses. Public health-related courses may include those addressing social, economic, quantitative, geographic, educational and other issues that impact the health of populations and health disparities within and across populations.

Capstone Experience: students must complete an experience that provides opportunities to apply public health principles outside of a typical classroom setting and builds on public health coursework. This experience should be at least equivalent to three semester-credit hours or sufficient to satisfy the typical capstone requirement for a bachelor’s degree at the parent university. The experience may be tailored to students’ expected post-baccalaureate goals (eg, graduate and/or professional school, entry-level employment), and a variety of experiences that meet university requirements may be appropriate. Acceptable capstone experiences might include one or more of the following: internship, service-learning project, senior seminar, portfolio project, research paper or honors thesis.
The required public health core coursework and capstone experience must be taught (in the case of coursework) and supervised (in the case of capstone experiences) by faculty documented in Criteria 4.1.a and 4.1.b.

This criterion is partially met. The school offers one Bachelor of Arts degree (BA). Undergraduate students in the College of Letters and Science at UC Berkeley can apply to major in public health after completing the lower division requirements, generally at the end of the sophomore year.

Beginning in the fall 2015, the BA students are required to take five, three- to four- semester unit core courses taught by school of public health faculty in order to become familiar with key public health concepts and methods. The core courses are: PH 142 Introduction of Probability and Statistics in Public Health, PH 150 an Introduction to Epidemiology, PH 150 B Introduction to Environmental Health, PH 150 D Introduction to Health Policy and Management and PH 150 E Community Health And Human Development.

In addition to the required coursework, undergraduate students are advised to choose elective courses in one or two areas of study. These elective undergraduate courses include statistics, public health-relevant courses such as arthropod-borne zoonotic diseases, air pollution emission and controls, environmental microbiology, energy and society, health economics and public-policy and population and poverty.

The Student Services Office provides advising services for undergraduate students. A peer counseling group provides a chance for potential students to learn from and share concerns with a peer. This group estimates that 25% of potential students take advantage of this opportunity. When appropriate, undergraduate students are connected to faculty for advising and participation in research. The school offers a health career opportunity program that provides the public health majors with career and graduate school advising, mentorship, practice based coursework and enrichment programs. The enrichment programs include a primary care and public health exposure course, a summer research program with school of public health faculty, a GRE preparation program and a minorities in health conference.

The school has an informative website for the undergraduate program which describes the program, addresses course requirements and provides examples of the curricula students can follow.

In addition to the Health Career Opportunity Program and the Center for Public Health Practice, the undergraduates have opportunities for paid and volunteer research participation through summer internships and other experiences. These include the Health Career Opportunity Program Summer Research Program, which offers undergraduate students opportunity to conduct research with a faculty member, and the Educational Experiences for Research Program, which allows students to conduct environmental health research with a faculty member.
The concern is that BA students do not currently complete a capstone. However, faculty members are in the process of completing the development of the capstone course. The course will actively involve community members in its design, administration and evaluation and will ensure that all undergraduates have the opportunity to collaborate with community partners. The course will also address integrated public-health content and students will have an opportunity to learn more about alternative means for presentation of material. The course will be piloted in spring 2017, and all students starting with the 2015 cohort of undergraduate students will be required to complete the course.

2.10 Other Bachelor's Degrees.

If the school offers baccalaureate degrees in fields other than public health, students pursuing them must be grounded in basic public health knowledge.

This criterion is not applicable.

2.11 Academic Degrees.

If the school also offers curricula for graduate academic degrees, students pursuing them shall obtain a broad introduction to public health, as well as an understanding about how their discipline-based specialization contributes to achieving the goals of public health.

This criterion is partially met. The school offers academic degrees at the master's and doctoral levels which include the MA and PhD in Biostatistics, MS and PhD in Environmental Health Science, MS and PhD in Epidemiology, MS/MD, PhD in Health Services and Policy Analysis and a PhD in Infectious Diseases and Immunity. The Graduate Division is responsible for awarding all academic degrees. All students in the academic degree programs are required to complete course content in only two of the five core areas of public health and to have professional experience prior to admission.

Each academic degree program requires a culminating experience. For the MS and MA degrees, the experience may be in different forms for each degree program. The most commonly used method is a thesis. All PhD students are required to pass a qualifying examination and develop a written research dissertation concluding with an oral dissertation defense. These requirements provide an adequate level of rigor as culminating experiences.

The first concern is that academic degree students are not being exposed to concepts in the areas of environmental health, the social and behavioral sciences and health management and policy either through individual courses or inclusion of concepts in these areas in other courses that they are required to take. During the site visit, a faculty member stated that the PhD is an academic degree and not a public health degree. However, the doctoral degrees are included in the unit of accreditation and thus they must meet these requirements even though the PhD is provided through the Graduate Division.
The second concern relates to the fact that not all students in the academic degree programs are required to take a course in epidemiology. The MA degree in biostatistics does not require that students complete a course in epidemiology, or acquire introductory epidemiology content in any of the other required courses. Epidemiology courses are available to students but students are not required to complete a course nor take epidemiology courses a pre-requisite for admission to the academic degree programs.

School administration noted that the granting of these degrees by the Berkeley Graduate Division does create challenges with regard to decision-making and governance of these degrees for students and faculty. However, the Office of the Assistant Dean for Students is responding effectively to these challenges.

2.12 Doctoral Degrees.

The school shall offer at least three doctoral degree programs that are relevant to three of the five areas of basic public health knowledge.

This criterion is met. The school offers a school-wide DrPH and PhD degrees in five areas: biostatistics, environmental health sciences, epidemiology, health services & policy analysis, and infectious diseases and immunity.

For academic year 2013 to 2014, there were 113 PhD and 27 DrPH doctoral students. The school’s PhD students receive support for tuition and stipends from a variety of sources, which include serving as graduate student instructors and graduate student researchers. Other sources of funding are available, including training grants in epidemiology and positions funded by faculty research grants. The site visitors learned that tuition for all DrPH students is fully funded.

Both doctoral and master’s-level course numbers are labeled as 200-level courses. Though this is the case, doctoral-level courses are distinguishable from master’s-level courses. For example, PH 224A Healthcare Organizations and Environments is a master’s-level course and PH224C Advanced Healthcare Organizations and Environments is a doctoral-level course. Master level students are not able to enroll in doctoral-level courses, however a doctoral student could opt to take a master’s-level course if needed. Each doctoral student works with his or her advisor to determine the course work that should be taken to reach the student’s goal for the degree.

The course requirements for the PhD students differ for each of the five degree programs, although there are some common courses across the degree programs, such as the epidemiology course requirement. Doctoral students in each program are required to complete a doctoral seminar along with advanced courses appropriate to the student’s area of interest and concentration.
DrPH students are required to attend the DrPH seminar every semester of their first two years in the program and then attend a post qualifying exam seminar. Students are also required to participate in a DrPH leadership seminar during the first two years of the program. The DrPH students also complete a professional and or research residency in a public health setting during the summer after their first year. This provides an opportunity to identify data for dissertation research and conduct analyses and participate in specific projects of interest to them.

2.13 Joint Degrees.

If the school offers joint degree programs, the required curriculum for the professional public health degree shall be equivalent to that required for a separate public health degree.

This criterion is met. The college has developed twelve joint degree programs. Five of these programs are viewed as concurrent degrees, two of the concurrent degrees are also offered as dual degrees and five others are referred to as joint degree programs.

Concurrent degrees require that students are accepted and enrolled in both degree programs. The concurrent degree programs include: the MBA/MPH, the MCP/MPH, the MPP/MPH, the MSW/MPH and the MJ/MPH. The MSW/MPH and the MJ/MPH are also offered as dual degrees. Students acquiring a dual degree must be already enrolled in one school or department and do not have the option of sharing credits. Each of these degree programs has been negotiated with and approved by the collaborating college and the university. Students must meet all the requirements for the MPH degree that is taken concurrently with the other professional degree. Both concurrent and dual degree programs require that students complete SPH core knowledge breadth courses, concentration-specific courses, an approved public health practice experience and the culminating experience requirement specific to their concentration.

The school participates with the University of California-San Francisco and Stanford University in three joint degree programs for medical students. During their medical school years at each university, students may apply to the MD/MPH joint degree program. The MPH in both cases is offered as an 11-month, 42 credit hour intensive program and requires the completion of course work in the five core areas, concentration-specific courses, a comprehensive exam as the culminating experience and a practice experience through a yearlong leadership or research project with a public health agency or a research group. The school also offers residents at UCSF in the preventive medicine and occupational and environmental health residencies the opportunity to complete the MPH degree. In both cases, students complete the 11-month MPH program and one year of supervised practice experience. The school also has a five-year MS/MD program with the UCSF campus. Students are required to complete all of the course requirements, including a practice experience and culminating experience, for the standalone MS degree.
2.14 Distance Education or Executive Degree Programs.

If the school offers degree programs using formats or methods other than students attending regular on-site course sessions spread over a standard term, these programs must a) be consistent with the mission of the school and within the school’s established areas of expertise; b) be guided by clearly articulated student learning outcomes that are rigorously evaluated; c) be subject to the same quality control processes that other degree programs in the school and university are; and d) provide planned and evaluated learning experiences that take into consideration and are responsive to the characteristics and needs of adult learners. If the school offers distance education or executive degree programs, it must provide needed support for these programs, including administrative, travel, communication and student services. The school must have an ongoing program to evaluate the academic effectiveness of the format, to assess learning methods and to systematically use this information to stimulate program improvements. The school must have processes in place through which it establishes that the student who registers in a distance education or correspondence education course or degree is the same student who participates in and completes the course and degree and receives academic credit.

This criterion is met. The college has one online program: the On-Campus/Online Professional MPH degree. The school offers this program in response to the state, national and global shortage of trained public health professionals.

The degree program consists of 42 credit hours and is intended to be completed in 2.5 years. Students are required to take a total of 14 courses, including the breadth courses. The school recommends that students take four additional courses in their second year (Evaluation of Health and Social Programs, Mass Communication in Public Health, Ethnic and Cultural Diversity in Public Health, and Health Care Organizations and Management). The program also includes two mandatory eight-day on-campus experiences associated with two courses: Health Policy and Management and the Interdisciplinary Seminar. The online courses are primarily asynchronous, and the school provides appropriate methods to verify student registration and participation by requiring students to log into their accounts using their CalNet ID credentials. Beginning with the summer 2015 cohort, students are required to complete a 130 contact hour practicum. A detailed structure has been created for this practicum including a proposal, an MOU, reflection papers, a final placement report and a preceptor affidavit.

Courses are taught by school faculty with the assistance of graduate student instructors in a 27:1 ratio. Course material is available 24/7 and students may review material presented at any time. Students have access to all library resources through a proxy server or the campus VPN.

The methods of evaluating student performance are the same as those used for the on-campus degree. Online students must complete a proctored final examination for each course and a comprehensive examination at the end of the program. Students have the same opportunity to evaluate course content, format and instructors in the same manner as on-campus students. Like campus-based courses, students complete a mid-course evaluation to provide course instructors with insights about course delivery.
methods and instructional approaches. Alumni of the program who met with site visitors indicated high levels of satisfaction with the content, delivery and flexibility of the degree program.

3.0 CREATION, APPLICATION AND ADVANCEMENT OF KNOWLEDGE.

3.1 Research.

The school shall pursue an active research program, consistent with its mission, through which its faculty and students contribute to the knowledge base of the public health disciplines, including research directed at improving the practice of public health.

This criterion is met. The Berkeley School of Public Health has a strong research program. Review of the data provided in the resource file indicated that between academic year 2011-2012 and 2013-2014 there have been 286 funded research projects for 54 members of the faculty complement, which ranged in size from 67 to 73 over this period.

The school follows the well-established policies and procedures of the university for its research activities. The school receives administrative support for research from a newly-instituted Campus Shared Services Unit, which oversees both pre- and post-award processes for all SPH research awards and extramural funding. Faculty members expressed that though centralization has improved some services, research support for the school still needs to be refined. Purchasing, hiring and payroll processes are done by other units within the Shared Services Unit. Staff are devoted to supporting the research conducted by the school’s faculty.

The school evaluates the success of its research activities by tracking the number of research proposals submitted, the total dollar amounts requested and the total dollar amounts awarded. As documented in the self-study, the school compares itself in these categories with four other UC Berkeley units that rank highly at the university. They are the College of Engineering, the College of Natural Resources, the School of Social Welfare and the Department of Chemistry. The school does not present targets for performance; rather they list the number of proposals and total dollar amounts. The school ranks second in all three categories and during the site visit administrators revealed that on a per capita basis the school ranks number 1 in research grant dollars generated by its faculty.

Another measure of research success is the number of publications stemming from the faculty. Since 2009, School Academic Senate faculty members have authored nearly 1700 publications and obtained over 28,000 citations. When considering both Academic Senate and non-senate faculty, publications reach above 4000 and citations over 50,000. However data was not presented with regard to the percent of faculty who are publishing.
Students are actively involved in the research projects of the faculty. All doctoral and most academic master's degree students engage in public health research. A thesis or dissertation is required of all doctoral students. Opportunities for research are available to master's students through courses and graduate student research appointments in the school as well as through the internship placement programs. Of the 90 internship placements that occurred in the summer of 2013, 29% were in university community-based research programs. Faculty are encouraged to include graduate student research positions in the budgets of their research proposals. Analysis of the 286 funded research projects listed in the resource file indicated that 68% or 193 involved students. The number of graduate student research appointments in school has decreased from 100 in 2012 two 76 in 2015. During the site visit discussion, faculty members did not know the reasons for this decline.

The research of the faculty also involves collaboration with various health agencies and community-based organizations. Analysis of the 286 research projects listed in the resource file indicated that 31% or 88 of the projects were considered to be community-based. The school has numerous programs and centers focused on community-based research, collaboration and interaction which includes the Best Babies Zone initiative, the Bixby Center for Population, Health and Sustainability, the Petris Center On Health Care Markets & Consumer Welfare, the Alcohol Research Group, the Center for Family and Community Health, The Forum for Collaborative HIV Research, the Center for the Health Assessment of Mothers and Children of Salinas and the Center for Global Public Health.

3.2 Service.

The school shall pursue active service activities, consistent with its mission, through which faculty and students contribute to the advancement of public health practice.

This criterion is met. The SPH states that service is integral to the school’s tripartite mission of teaching, research and service with and a commitment from faculty, staff and students. Faculty are expected to participate in professional and community service outside the university as part of their requirements for promotion and tenure and to include specific details on their curricula vitae when seeking promotion.

The UC Academic Senate policies state that a candidate for promotion or tenure must be assessed on their level of university and public service. These policies are provided and outlined in the UC Academic Personnel Manual and the General University Policy Regarding Academic Appointees. The SPH does not set standard measures for faculty involvement in service because that element of a faculty member’s career is distinguished during the review process for advancement and is based on individual plans and goals. The SPH identifies qualitative measures of success for the faculty service activities in comparison to the 2008-2012 strategic plan. These reported service activities for academic years 2009-2010 through 2012-2013 are considered on-going. The outcome measures are based on years of achievement and the data predominately details state and national activities.
A review of primary faculty CVs confirms involvement in a wide variety of activities including: professional and scientific organization memberships, editors and reviewers of scholarly journals and other publications, advisory board and panel members, government service and service to non-profits and private committees and consultations with public and private organizations. As recorded for academic year 2011-2012 to 2103-2104, 62 faculty members, were involved in unfunded service activities in the state, national and international arenas. The self-study reports 24 funded service activities conducted by five faculty for the last three academic year academic years with a total of $3,250,778 during 2013-2014. Of these funded activities, 22 are community-based efforts and 19 afforded student involvement.

The SPH supports community-based service thorough a variety of methods including the Resource Center on Aging which provides resources for field research and current information on aging in the community; the Health Research for Action (HRA), which translates the SPH’s research findings into resources and programs for the public and works to reduce health disparities and empower communities; and the UC Berkeley Wellness Letter which provides the public with practical advice for daily living.

A review of the funded service activities documents approximately 80% student involvement. Student service activities include collaboration with local health departments and non-profit organizations, including: the Asian Pacific Environmental Network, LaClinica de la Raza, and the West Oakland Environmental Indicators Project. Students participate in the Multicultural Health in Action group focused on the professional development of students in projects related to multi-cultural health and health disparities. Students have partnered with the City of Berkeley Public Health Division, and have participated in the Center for Health Leadership Fellows program which requires students to participate in community projects as part of their program deliverables. Students also have opportunities for paid summer internships such as the Bixby Center for Population, Health and Sustainability. In 2015, two awards were given for international work in Mexico and Niger. A component of freshman student orientation includes a Volunteer Mobilization Day held in conjunction with the City of Berkeley to work with childcare, homeless, and public health sites.

During the site visit, discussions were held concerning service activities by faculty and students. Faculty indicated that they believe student involvement to be significant but they don’t believe there is one location or mechanism to track service across concentrations. Although quantitative data is not available and tracking faculty and student service activities has been a challenge, faculty indicate they believe that approximately 50% of the students are involved in volunteer service activities outside their internships and practice experience and that approximately 80% of epidemiology and biostatistics students participated in addressing the recent California measles outbreak.
Community partners indicated that they rely on the faculty, request assistance frequently and provided an example for dealing with asthma for low income residents throughout the county.

3.3 Workforce Development.

The school shall engage in activities other than its offering of degree programs that support the professional development of the public health workforce.

This criterion is met with commentary. The SPH has a robust workforce development program that assesses and provides competency-based continuing education and workforce development for alumni and local and statewide practitioners. Training is provided by a series of centers and organizations with a reported outreach in 2013-2014 of 80 trainings to 2,400 participants. Training activities are provide by a variety of methods including accredited continuing education courses, community and professional development continuing education conferences, workshops, lectures, seminars, webinars and face-to-face and online training classes.

The California-Pacific Public Health Training Center conducted assessments of health employer training needs in California, Hawaii and the Pacific Islands using the Council on Linkages Competencies. The SPH developed work with three surrounding local health departments and local community health centers to deliver custom trainings based on their priority assessed needs.

The SPH has several major programs and centers to address workforce development including the following:

- The Center for Public Health Practice has been assessing the needs of the public health workforce and providing competency based trainings to address them through participation in the National Public Health Training Center Network.
- The UC Berkeley Extension Office manages the concurrent enrollment process for 18 regularly scheduled SPH public health courses accessible by health professional and community individuals.
- The Center for Occupational and Environmental Health offers a variety of courses, symposia and summer institutes for continuing education in multidisciplinary areas like industrial hygiene, occupational safety, hazardous substance training and agricultural safety and health.
- The Labor Occupational Health Program is a community outreach program that addresses health and safety needs in nearly every industry, from healthcare to agriculture to construction.
- The Maternal and Child Health Nutrition Training Program provides a series of public health nutrition and leadership online training modules to provide continuing education to place-based public health nutritionists in the field.
Faculty members provided additional examples of community health partnerships and projects including emergency preparedness communications for deaf and hard of hearing populations; screening for developmental disabilities among children in San Francisco clinics, a partnership with Sutter Health Care system; statewide education of parents of children 0-5 to improve parenting skills; and needs assessments of Hmong, Korean and Chinese communities, a collaboration with local health departments and the Contra Costs Regional Medical Center.

The SPH also provides trainings to students and professionals as part of its on-campus “Professional Development and Workshop Series.” Faculty involvement includes providing expert advisors to the Let’s Get Healthy California Task Force; leadership roles in the State Innovation Model; and serving as expert advisors and analytic staff for the Berkeley Forum for Improving California’s Healthcare Delivery System.

Evaluations are used to assess the quality of training and future training needs. During the site visit, school administration provided a five-year continuing education programs progress summary (2010-2014 reporting years to the team. The progress summary reports 3121 course offerings, a total of 9,869 trainees by occupations such as physicians, industrial hygienists, safety professionals and health occupations. The data also shows that there were approximately 771 participants in the UCB extension courses. The SPH reports 24 funded activities by eight faculty including 13 (54%) community based activities and 13 (54%) with student participation.

The SPH offers certificate programs in Alcohol and Drug Studies and the Global Health Leadership Forum. The Certificate Program in Alcohol and Drug Abuse Studies prepares students for a career in addictions counseling or enhances expertise of those currently doing counseling and is approved by the California Foundation for the Advancement of Addiction Professionals and the educational board for California Association of Alcoholism and Drug Abuse Counselors. The Global Health Leadership Forum is an executive education certificate program being offered in partnership with the Economics and Health Research Center of Barcelona’s Universitat Pompeu Fabra, The King’s Fund in London and the Healthcare Leadership College in Singapore. This program is for experienced healthcare leaders/executives and focuses on globally-sourced innovations in health policy, technology, and management. In the past decade, there have been 456 session attendees from fifty-seven countries; 136 of the 456 participants attended two sessions and received an earned certificate from UC Berkeley. In order to receive a certificate, leaders must give a presentation at their second session on a pertinent project or program. Certificates were awarded to 13 participants in 2010, 15 in 2011, 23 in 2012, three in 2013, and five in 2014.

The commentary relates to the lack of written, defined polices, procedure and evaluations that support continuing education efforts and workforce development strategies. Faculty indicated that Berkeley does
not utilize collective systematic processes but it is purposely an unmanaged process to allow faculty to make determinations for their time and meet their individual goals. However it was noted, that this issue is addressed in the 2015-2020 strategic plan and that benchmarks and outcomes are in the development phase.

4.0 FACULTY, STAFF AND STUDENTS.

4.1 Faculty Qualifications.

The school shall have a clearly defined faculty which, by virtue of its distribution, multidisciplinary nature, educational preparation, practice experience and research and instructional competence, is able to fully support the school’s mission, goals and objectives.

This criterion is met. The school has primary faculty that are highly qualified to carry out its mission, research practice and academic responsibilities. Their training provides depth in the disciplines central to the research, teaching and practice activities of the school. The school's primary faculty includes the ranks of assistant, associate and full professor; assistant, associate and full adjunct professor; assistant, associate and full professor in residence; clinical professor; and lecturer. The assistant, associate and professor faculty are either tenure-track or tenured. The other faculty ranks are non-tenure track. Seventeen of the 73 faculty are non-tenure. All but two of the 73 faculty have doctoral degrees which include PhD, MD, ScD and DrPH.

In addition to the primary faculty, the school has a total of 63 other faculty. These faculty devote a range of 0.05 to 0.5 FTE to the school. They hold titles that include adjunct assistant, associate or full professor and instructor. The majority of the faculty have doctoral degrees, eg, PhD, MD, JD, DrPH; only 11 had master's-level degrees (MS, MSW, MA, MBA, MPH). Faculty members have training in areas central to the teaching disciplines of the school and as such they add important expertise and increase the depth in the disciplines. Most of the faculty are from the UC Berkeley campus and UCSF, but some are practitioners who work in the local community. Their participation in the teaching and research programs of the school complements the expertise of the primary faculty and enriches opportunities for students for practica, obtaining jobs after graduation and increasing their networking.

The self-study provides a table showing outcome measures used to evaluate the qualifications of the faculty. It includes measures such as continuing promotion for academic senate rank faculty and success in research as indicated by the total amount of research project dollars, which declined in 2013-2014. However, the targets are indicated as ongoing and thus lack quantitative targets or a baseline from which to assess progress.

4.2 Faculty Policies and Procedures.

The school shall have well-defined policies and procedures to recruit, appoint and promote qualified faculty, to evaluate competence and performance of faculty, and to support the professional development and advancement of faculty.
This criterion is met. The school has well-defined policies and procedures to recruit, appoint and promote qualified faculty, to evaluate competence and performance of faculty and to support the professional development and advancement of faculty.

The employment relationship of faculty with the university is developed, implemented and managed by the office of Academic Personnel and Programs and is published in hard copy and online in the Academic Personnel Manual (APM). The university also publishes a University of California Faculty Manual, which describes faculty rights and responsibilities. The appendix of the handbook contains sections of the APM regarding appointment, advancement, teaching, student relations, research, outside professional activities and grievance procedures. The school has developed the Procedures for Academic Advancement guide, which describes actions needed for merit increases and promotions for all faculty at all levels except lecturers. Lecturers are represented by the American Federation of Teachers through an MOU with the university.

The school measures faculty performance through criteria which vary with the type of faculty appointment. Senate faculty and adjunct faculty employ the same criteria regarding teaching, research and service but adjunct faculty weighting may vary depending on their emphasis on teaching or research. The criteria for clinical professors are based on expertise in public health practice and the direct provision, management, and evaluation of services to the public. Lecturer criteria rely on teaching ability and professional competence in specialized curricular areas. Faculty members are judged by their colleagues at the time of appointment, for merit increases, through a mid-career appraisal and for promotion. The Faculty Senate, campus and school committees play an important role in this process. A uniform system of course evaluation is used by the school for all courses and provides feedback to faculty for evaluation and development.

For junior faculty members, development begins through initial start-up funds which may include summer salary, reduced teaching or participation in two endowed chairs for junior faculty. In addition, each junior faculty member chooses a mentor who is a full or emeritus professor. The mentors review teaching evaluations, research proposals and research products and provide an overall evaluation to the junior faculty members. Other resources are provided to all faculty members through the Berkeley Campus Office of Educational Development, the Academic Senate Committee on Teaching and the Academic Senate Committee on Research. These units provide special resources and grants to support development of both junior and senior faculty members. Faculty indicated that this system of development was adequate and effective for their advancement and growth as professionals.
4.3 Student Recruitment and Admissions.

The school shall have student recruitment and admissions policies and procedures designed to locate and select qualified individuals capable of taking advantage of the school's various learning activities, which will enable each of them to develop competence for a career in public health.

This criterion is met. The school has a well-defined process to recruit students for public health enrollment and maintains a functional, informative website to assist prospective applicants with the application process, application requirements, prospective student events, and fees and financial aid.

The multi-faceted recruitment process includes a professionally developed, comprehensive compendium that outlines concentration areas, financial aid, life at Berkeley, a summary of available resources, recruitment fairs, special invitation to career events sponsored by pre-health advisors and student organizations, a one-day annual public health conference for prospective students, a two-day Graduate Student Diversity Day, pre-applications advising group sessions offered three times per year and exhibitions at professional associations and organizations. The self-study included samples of recruitment materials as well as copy of the compendium that was given to each site visitor.

The SPH's Educational Policy and Curriculum Committee has overall responsibility for admissions to all degree programs. This committee is comprised of a representative from each area of concentration and is chaired by a faculty member appointed by the dean. This committee oversees admission decisions, approves/disapproves requests for exception and redirects applicants for alternate review by other concentrations if appropriate. The SPH appoints a head graduate advisor (associate dean for student services) to oversee all degree programs, monitor the impact of admissions on students and faculty and serve as liaison with the Graduate Division. The Student Services Unit assists in receiving and assembling applications and determines admissibility/non-admissibility according to UC Berkeley standards. All complete applications regardless of admissibility, are sent to the faculty admissions committee in the appropriate area of concentration for review. Each academic group has its own faculty admissions committee and a set of standards explicit to the degree. The Graduate Division designates the number of degree offers of admission the SPH may make for the next academic year based on statistical records maintained over previous admission cycles.

For admission to the MPH degree, applicants must hold a bachelor's degree or equivalent from an institution of acceptable standing and have knowledge in the biological, physical or social sciences and must have attained a B (3.0) grade point average for work completed after the first two years of a bachelor's program and in all post-baccalaureate course work. On average, successful applicants have a GRE score above the 60th percentile and a grade point average of 3.5. Applicants from non-English speaking countries must pass the TOEFL within two years of application and score 570 for the paper-
based test or 90 for the internet-based test. Applicants also submit three letters of recommendation, a statement of purpose and a personal history statement. Applicants are accepted for the fall semester only.

The online/on-campus MPH program requires at least two-years of post-baccalaureate work experience, although prospective students may petition for an exception based on exemplary work experience completed before attain a bachelor's degree. The alternate work experience does not have to include public health but can include advocacy, environmental sciences, marketing, journalism, housing and municipal administration.

DrPH program applicants must typically have an MPH degree from an accredited school of public health and must have completed two years or more of professional experience in the public health fields showing evidence of leadership. Applicants with a master’s degree or higher outside the public health must make up any deficiencies in course content once accepted.

To declare an undergraduate major in public health, prospective students must complete all of the lower division prerequisites (mathematics, biology, and social sciences) and obtain a grade of at least a B- in general biology and submit an application essay. In the application essay, students describe the pathway that led them to an interest in this field of study, their experience relevant to public health (including volunteering) and their long-term public health ambitions. All applications are reviewed by public health faculty.

As documented in the self-study, the undergraduate public health BA program increased from a headcount of 128 in 2011-2012 to 169 in 2013-2014. Several MPH concentration areas experienced increases in headcount over a similar timeframe: epidemiology increased from 14 to 22, epidemiology/biostatistics increased from 22 to 31, health & social behavior increased from 28 to 37. The online/on-campus program experienced rapid growth and increased from eight in 2011-12 to 76 in 2013-2014.

During a meeting with students, they expressed satisfaction with the admissions process and stated that the process was easy and clear, that faculty are willing to answer questions and are open to communicating through email.

The SPH notes that financial assistance is a challenge. The school desires to improve its yield by identifying funding sources and making financial assistance offers early in the admission process.
4.4 Advising and Career Counseling.

There shall be available a clearly explained and accessible academic advising system for students, as well as readily available career and placement advice.

This criterion is met. The SPH recognizes student advising as an important part of the faculty teaching role and requires that all faculty serve as faculty advisors and assist students in developing an optimal program that meets the degree requirements and ensures flexibility to meet individual goals. The SPH has a mentorship program to train new faculty without prior advising experience.

Faculty advising responsibilities are defined in the Faculty Code of Conduct, with the expectation that all faculty post and keep regular office hours open to students without appointments. Faculty and students are expected to meet during the first week of school to review core and cross-cutting competencies required for the degree program and any program specific competencies. The student and advisor meet periodically throughout the school year and again at the end of the final year in the program to assess the attainment of the core competencies. The SPH supplements the one-on-one advising and promotes mechanisms to increase student/faculty interaction via social events and program seminars to address student questions and concerns. On occasion faculty will conduct group advisement sessions.

In response to inquiries about advising undergraduate students, faculty and the leadership team responded that the overarching goal is for students to have the opportunity for academic advisement by faculty but general advising is provided by the assistant dean of student services. Undergraduate advising starts the first year that students show interest in the public health major. Once they declare the major, guidance is given to map out the courses and a career trajectory. Currently, staff members manage a case load of 440 students. Finally, there are other options for the undergraduate to have non-classroom interaction with faculty, such as events sponsored by the Undergraduate Management Committee for Public Health Majors.

When asked about integrating advising into the planned baccalaureate capstone field experience, faculty indicated the intent to integrate across areas in a new course that uses a case-based approach to collect information and develop strategies and to invite community partners to join team meetings and provide real world topic areas such as the development of options for homeless people. Furthermore, they indicated that the cohort is too big for individual placement and that the faculty are pilot testing the class now.

The SPH Center for Public Health Practice Career Services Office assists graduate students and alumni to pursue gainful public health employment. Career Services sponsors programs in career planning, interview preparation, resume writing and job search strategies and workshops that allow students to interact with employers and public health professionals. A weekly newsletter is emailed to students with
upcoming deadlines, career exploration opportunities and career resources for students conducting research. Individual career counseling appointments include career decision-making and job search strategies, resume and cover letter reviews, mock-interviews, support to evaluate job offers, assistance to complete medical school applications and assessments instruments to evaluate personality, interests, skills, strengths and values as they relate to career choices. Because the Career Services Office is located within the Center for Public Health Practice, the SPH is able to integrate the career services with field supervisors, the leadership team, staff and academic advisors to create a student-centered approach to career, professional and leadership development of the student.

To assist with career counseling services for the newly developed on-campus/online MPH program, the Career Services Office expanded networking opportunities with alumni and employers to the geographical areas where the students reside. Career Services also conducted a needs assessment survey of the online students and developed a plan to provide comparable services in a variety of delivery modes including phone, Skype, email, webinar, and video conferencing. These new delivery modes are now available to all students.

In spring 2014, the SPH surveyed 92 students who participated in individual counseling appointments to provide feedback and make recommendations for improvements. A total of 41 (44.5%) students responded. All respondents indicated that “the counselor was supportive and helpful” and “my questions and concerns were addressed.” The qualitative request for feedback or suggestions was overwhelmingly positive and supportive of the career counseling services.

Students told site visitors that they were satisfied with advising services, believed that faculty made concerted efforts to be available and confirmed that faculty assisted students will individual course sequences.

The SPH has a clearly defined process to address student grievances. The procedures are outlined in the student handbook and include possible resolution through an informal, formal or appeal process. The student handbooks are readily available to students on the university website. UC Berkeley regulations state that the grounds for grievances are as follow: application of non-academic criteria, such as: considerations of race, politics, religion, sex or other criteria not directly reflective of performance related to course requirements; sexual harassment; improper academic procedures that unfairly affect a student's grade. In the event of a grievance or dispute, students are encouraged to contact the university's Ombudsman Office for Student and Postdoctoral Appointees. The SPH has not had a formal grievance in the last three years.
Agenda

COUNCIL ON EDUCATION FOR PUBLIC HEALTH
ACCREDITATION SITE VISIT

University of California, Berkeley
School of Public Health

October 2-4, 2015

Wednesday, September 30, 2015

9:15 am  Meeting with Self-Study Committee
Stef Bertozzi
Joan Bloom
Jeff Oxendine
Bill Satariano
Abby Rincon
Sylvia Gwendelman
Mark Horton
Katharine Hammond
Shederick McClendon
Lia Fernald
Darlene Francis
Emily Ozer
Priya Mehta
Stephen Shortell

10:15 am  Break

10:30 am  Meeting with Core Leadership Team
Katharine Hammond
Ann Keller
Emily Ozer
Bill Jagust
John Balmes
Lee Riley
Kris Madsen
Ellen Eisen
David Declercq
Theresa Richmond
Stef Bertozzi
Abby Rincon
Darlene Francis
Shederick McClendon
Joan Bloom
Lisa Barcellos

11:45 am  Break

12:00 pm  Lunch with Students
Cailey Gibson
Lee Ann Hill
Jennifer Sisto
Dustin Glasner
Lauren Valdez
Vicky Gomez
Alasdair Cohen
Sam Gunther
David Molmen
Samantha Ngo
Ajay Pillarissette
Lucia Catherin Petito
Louisa Smith
Robert Snyder
1:30 pm  Break
1:45 pm  Meeting with Instructional Programs Group 1
        Bill Satariano  
        Lisa Barcellos  
        Maureen Lahiff  
        Charlotte Smith  
        Katharine Hammond  
        Kirk Smith  
        Jennifer Ahern  
        Richard Stephens  
        Coco Auerswald  
        Joan Bloom  
        Shederick McClendon

3:00 pm  Break
3:15 pm  Team Executive Session and Resource File Review
5:00 pm  Adjourn

Thursday, October 1, 2015

8:30 am  Meeting with Faculty Related to Research, Service, Workforce Development
        Lia Fernald  
        Priya Mehta  
        Richard Scheffler  
        Jeff Oxendine  
        Jennifer Lachance  
        John Balmes  
        Laura Stock  
        Sylvia Guendelman

9:45 am  Break
10:00 am  Meeting with Instructional Programs Group 2
        Lisa Barcellos  
        Shederick McClendon  
        Kris Madsen  
        Joan Bloom  
        Alan Hubbard  
        Ellen Eisen  
        Jennifer Ahern  
        Kim MacPherson  
        Nap Hosang  
        Michael Sholinbeck  
        Abby Rincon

11:15 am  Break & Resource File Review
12:00 pm  Lunch with Alumni and Community Stakeholders (preceptors, community advisors, employers of alumni)
        Mark Horton  
        Mary Jo Potter  
        Ken Taymor  
        Heidi M Bauer  
        Karen Ben-Moshe  
        Catherine A. Celli  
        Chuck Mckinney  
        Pracilla Chu  
        Mariah Lafleur  
        Gabino Arredondo  
        Edward L. Murphy  
        Iman Nazeer-Simmons  
        Lucinda Bazile  
        Sharon O'Hara  
        Sheila Baxter  
        Amanda Clarke  
        Daniel Madragal
1:30 pm  Break

1:45 pm  Meet with Leadership of University
        Claude Steele

2:45 pm  Break

3:00 pm  Meeting with Faculty Related to Faculty Issues, Student Recruitment and Advising
        Nick Jewell
        Eva Harris
        Jodi Halpern
        Ray Catalano
        Trudy Buehring
        Julie Niedermayr
        Barbara Abrams
        Shederick McClendon
        Joan Bloom
        Abby Rincon
        Darlene Francis
        Jeff Oxendine
        Ruthann Haffke

4:00 pm  Break

4:15 pm  Executive Session & Resource File Review

5:30 pm  Adjourn

Friday, October 2, 2015

8:30 am  Executive Session and Report Preparation

11:00 am  Exit Interview
Appendix 4: Summary of the School’s Response to the Previous Academic Program Review Findings and OPA Suggested Topics
<table>
<thead>
<tr>
<th>Comment</th>
<th>Location in document</th>
<th>Summary of how it has been addressed to date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Previous Academic Program Review (2005)</td>
<td></td>
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<tr>
<td>Develop, in written form, a strategy to enhance the school’s collaborations, particularly with Letters &amp; Science’s departments and with other bioscience departments on campus.</td>
<td>1.0 Education &amp; 2.0 Research</td>
<td>Proposed collaborations are outlined in the 2015-2020 Strategic Plan (Appendix 1). We have created the Fung Fellowship, a partnership with Engineering. We have also recently launched (Jan. 2016) a partnership with the Berkeley Biological Sciences Division called the “Alliance for Global Health and Science.”</td>
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<tr>
<td>Design a faculty recruitment plan that articulates the rationale and strategy for growth over the next decade.</td>
<td>2.0 Research</td>
<td>See Appendix 2. Faculty expansion will occur by strengthening the case to central campus for more state-funded FTEs, expanding revenue-generating online programs, and investigating other faculty funding models.</td>
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<td>Write a faculty workload policy that creates workload equity.</td>
<td>1.0 Education</td>
<td>The School wrote a policy in 2007 stating that the basic faculty teaching obligation is three courses per academic year (regularly scheduled, semester-length, primary courses, i.e. exclusive of independent study). Even though a faculty workload policy is in place, there is still a wide distribution in the amount of teaching the faculty provides. We are still working to address this issue.</td>
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<td>Broadly define the scope of new endowed chairs to allow for reassignment, and base the endowment on a full funding scheme to provide for salary increases as faculty members advance through their careers.</td>
<td>---</td>
<td>A policy responding to these items was completed in 2015. Every endowed chair in the School except for three rotate among faculty members and are reviewed every five years.</td>
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<td>Actively recruit women faculty into leadership roles in the department.</td>
<td>4.0 Diversity</td>
<td>Women have been promoted more equitably to leadership positions in the school. Two of the four associate deans are women; three of the seven division heads are women; and two of the four assistant deans are also women.</td>
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<tr>
<td>Balance faculty involvement in the undergraduate program.</td>
<td>1.0 Education</td>
<td>We are still working to address the distribution of undergraduate teaching workload because we never received the promised faculty FTE to accompany the growth of the undergraduate program.</td>
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<td>Monitor demand for the undergraduate major, and track the placement of majors after graduation.</td>
<td>1.0 Education &amp; 3.0 Community</td>
<td>We have more than tripled undergraduate enrollment since 2007 and are currently at our enrollment “cap.” We do not yet have a system in place for tracking employment status or graduate school entry for graduates of our undergraduate program. This is an area we would like to develop in the future.</td>
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<td>Monitor the impact of the Professional Degree Fee increase on student admissions and demographics, and construct a plan to address concerns if they arise.</td>
<td>5.0 Governance</td>
<td>The professional degree fee tuition increased by 5% for the 2015-16 school year. Although professional tuition has increased, the sustained growth in URM student enrollment along with declining debt levels at graduation for the MPH and DrPH degrees suggests that professional degree fee increases are being offset by increased financial aid for URM students.</td>
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</table>

**Office of Planning and Analysis (OPA)**

**Questions for Consideration**

<table>
<thead>
<tr>
<th>How does the School coordinate faculty activity across and within its large variety of degree programs and subdisciplines? How does it maintain a sense of cohesion and shared identity while maintaining broad and diverse programs?</th>
<th>2.0 Research</th>
<th>We have identified seven specific areas of strategic research priority for the School. These areas will help the School focus its collective research strengths on solving the biggest public health challenges and fostering partnerships with other units, industry, and community partners.</th>
</tr>
</thead>
<tbody>
<tr>
<td>How is the unit working to create cohesion and coherence in a curriculum that draws from many disciplines? How are the faculty assessing student learning outcomes and using these to modify and enhance the curriculum over time?</td>
<td>1.0 Education</td>
<td>We are moving toward competency-driven education as a way to create cohesion and coherence across the curriculum. See Appendix 10. We are in the process of mapping each competency to the experience by which students acquire the competency (coursework, field internship, research project, etc.) and developing assessment tools.</td>
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<tr>
<td>What is the School doing to support diversity (in regards to hiring, outreach, recruitment, and support), how are those efforts working, and what challenges and opportunities does the unit see going forward?</td>
<td>4.0 Diversity</td>
<td>We established an Office of Diversity in 2005, which has brought much success to our efforts to support diversity. For example, the percentage of URM students has increased from 5% to 24% in the last decade.</td>
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<tr>
<td>What level of faculty oversight does the undergraduate program have? How is advising handled, and how does the program ensure adequate access to permanent faculty? What might the School do to improve the experience for undergraduates?</td>
<td>1.0 Education &amp; 3.0 Community</td>
<td>To improve program oversight, the undergraduate program is now housed within our Interdisciplinary division. We still face many challenges to ensure adequate access to permanent faculty, but we are adding many things to improve the program, such as a capstone experience and expanded access to services offered by the Center for Public Health Practice.</td>
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<tr>
<td>According to survey results, master’s students tend to be satisfied with the support provided by faculty and staff, but are less satisfied with the adequacy of facilities. Doctoral students are unsatisfied with the amount of financial support received and the level of faculty assistance with finding professional employment. What is being done about these issues?</td>
<td>1.0 Education</td>
<td>Construction is underway on a new building which will house most our School. We are hopeful that this will improve student satisfaction regarding adequacy of our facilities. Funding remains a challenge. We are creating a Center for Teaching Excellence to help faculty be better mentors for doctoral students.</td>
</tr>
<tr>
<td>What shifts are happening in the curricular demand for emerging areas and subfield specialties (e.g., the growth in course offerings and enrollments in the areas of Environmental Health Sciences and Health and Social Behavior)?</td>
<td>2.0 Research</td>
<td>The emerging areas of focus for the School are “big data;” health and technology innovation; ‘omics; food systems, nutrition, and physical activity; maternal and child health; adolescent health; and global health.</td>
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Appendix 5: Acceptance and Matriculation Rates by Program
Acceptance and Matriculation Rates by Program

Acceptance and matriculation rates by MPH program (fall 2015)

<table>
<thead>
<tr>
<th>Program</th>
<th>Acceptance Rate</th>
<th>% Admits Matriculating</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSB</td>
<td>55%</td>
<td>59%</td>
</tr>
<tr>
<td>EHS</td>
<td>32%</td>
<td>34%</td>
</tr>
<tr>
<td>MCH</td>
<td>18%</td>
<td>20%</td>
</tr>
<tr>
<td>Epi/Bio</td>
<td>50%</td>
<td>48%</td>
</tr>
<tr>
<td>HPM</td>
<td>48%</td>
<td>49%</td>
</tr>
<tr>
<td>Nutrition</td>
<td>67%</td>
<td>67%</td>
</tr>
<tr>
<td>IDV</td>
<td>47%</td>
<td>47%</td>
</tr>
<tr>
<td>Epi</td>
<td>41%</td>
<td>41%</td>
</tr>
<tr>
<td>Interd.</td>
<td>72%</td>
<td>74%</td>
</tr>
</tbody>
</table>

Acceptance and matriculation rates by MA, MS, PhD, and DrPH programs (fall 2015)

<table>
<thead>
<tr>
<th>Program</th>
<th>Acceptance Rate</th>
<th>% Admits Matriculating</th>
</tr>
</thead>
<tbody>
<tr>
<td>IDV (PhD)</td>
<td>100%</td>
<td>100%</td>
</tr>
<tr>
<td>Epi (MS, PhD)</td>
<td>53%</td>
<td>53%</td>
</tr>
<tr>
<td>HSPA (PhD)</td>
<td>31%</td>
<td>31%</td>
</tr>
<tr>
<td>DrPH</td>
<td>38%</td>
<td>38%</td>
</tr>
<tr>
<td>Biostat (MA, PhD)</td>
<td>50%</td>
<td>50%</td>
</tr>
<tr>
<td>EHS (MS, PhD)</td>
<td>30%</td>
<td>30%</td>
</tr>
</tbody>
</table>

Acronyms: Health & Social Behavior (HSB), Environmental Health Sciences (EHS), Maternal & Child Health (MCH), Epidemiology/Biostatistics (Epi/Bio), Health Policy & Management (HPM), Infectious Diseases & Vaccinology (IDV), Interdisciplinary (Interd.)

Acronyms: Infectious Diseases & Vaccinology (IDV), Epidemiology (Epi), Health Policy (HP), Doctor of Public Health (DrPH), Biostatistics (Biostat), Environmental Health Sciences (EHS)
Acceptance and matriculation rates by concurrent program (fall 2015)

<table>
<thead>
<tr>
<th>Program Combination</th>
<th>Acceptance Rate</th>
<th>% Admits Matriculating</th>
</tr>
</thead>
<tbody>
<tr>
<td>MSW/MPH</td>
<td>22%</td>
<td>100%</td>
</tr>
<tr>
<td>MPP/MPH</td>
<td>27%</td>
<td>33%</td>
</tr>
<tr>
<td>MBA/MPH</td>
<td>30%</td>
<td>52%</td>
</tr>
<tr>
<td>MCP/MPH</td>
<td>45%</td>
<td>60%</td>
</tr>
<tr>
<td>MJ/MPH</td>
<td>67%</td>
<td>100%</td>
</tr>
</tbody>
</table>

# Students 2014-15:
- MSW/MPH: 10
- MPP/MPH: 8
- MBA/MPH: 33
- MCP/MPH: 6
- MJ/MPH: 2

Acronyms: Master of Social Work (MSW), Master of Public Health (MPH), Master of Public Policy (MPP), Master of Business Administration (MBA), Master of City Planning (MCP), Master of Journalism (MJ)
Appendix 6: Graphs from the Undergraduate Experience Survey
The Undergraduate Experience Survey
Appendix 7: Graphs from the Master’s Program Review Survey
Appendix 8: Graphs from the JMP Review Survey
Appendix 9: Graphs from the Doctoral Exit Survey
Graphs from the Doctoral Exit Survey
Appendix 10: Graduate Group Program Reviews
Professor Kirk R. Smith  
Chair, Graduate Group in Environmental Health Sciences  
50 University Hall  
MC 7360

Dear Chair Smith,

At its meeting on April 7, 2008, the Graduate Council discussed the report on the Graduate Group in Environmental Health Sciences. The Council endorsed the report. I am attaching a copy for your information and that of your faculty colleagues and graduate students.

Thank you for submitting materials about the Group. Recommendations for the Group’s consideration are listed at the end of the report. We would like a response to the recommendations, following appropriate consultation, by November 15, 2008.

Thank you for your co-operation with the Graduate Council.

Sincerely,

Ilan Adler  
Chair, Graduate Council

cc: Prof. Katherine Hammond, Environmental Health Sciences Division  
Norma Firestone, Environmental Health Sciences Graduate Group  
Prof. William Drummond, Berkeley Division of the Academic Senate  
Diane Hill, Graduate Division  
Dennis Hengstler, Office of Planning and Analysis  
Sandy Ellison, Office of Planning and Analysis  
Anya Grant, Office of the Vice Provost-Academic Planning & Facilities

Enclosure
Review of the Environmental Health Sciences Graduate Group
Graduate Council
April 8, 2008

Graduate Council Review Representatives
Marti Hearst (chair), David Bates, Ilan Adler, Susan Muller, Scott Armstrong (student representative)

Timeline
February 1, 2008       EHS self-review materials
March 4, 2008          Review meeting with student and faculty representatives

Overview
The Environmental Health Sciences Graduate Group, commonly referred to as EHS, is a graduate group associated with the School of Public Health. The School is organized into six divisions, and associated with each division is a graduate group that handles matters pertaining to graduate students and research. The scope of the EHS Graduate Group is the same as the corresponding division in the School, and so is an unusual graduate group by campus norms. In fitting with this division of labor, the chair of the Division of EHS within SPH (Katherine Hammond) did not attend our meeting, but the head of the Graduate Group did. The Group is comfortable in terms of administrative support as it is all handled by the School (including admissions).

The group’s mission statement from the website is “Much of our work at the Environmental Health Sciences Division is focused on the study of human populations exposed to chemical or biological agents in either the community or occupational environments. Faculty in our group are closely involved with epidemiological studies, often developing biological markers (such as slight changes in DNA) that can serve as indicators of human exposure before full-blown disease results.”

There are 7 core faculty in EHS, along with 8 adjunct professors at various ranks and 11 affiliated faculty with varying levels of involvement. There are currently 21 PhD students and 12 masters students. The masters degree is an M.S. which is to be distinguished from the more applied M.P.H degree. There is a new M.S. emphasis on developing regions, called HED, which is growing in popularity. There are a large number of sub-specialties within EHS. PhD students are expected to do two minors related to their research, and students largely determine their own programs of coursework.

The meeting with students included 2 PhDs and one masters student; they had been hand-picked by the department. Two of these students wrote up the student response to the review questions, noting that their summary was gleaned from a meeting attended by 15 PhD and 6 MS students. Others commented by email.
The faculty did not express a need to grow; however, they do rely on adjuncts for much of the instruction and advising. Adjuncts can be co-chairs of committees and have recently been giving voting rights in the Group, but nevertheless are “second-class citizens” within the university; this is not ideal but did not seem to be particularly problematic in this case.

The Group has strong research relations with UCD and UCSF and work closely with COEH, the Center for Occupational and Environmental Health.

**Main Issues**

1) *Decline in Quality of Applicant Pool.* The Group has to compete with other EHS departments in very large Public Health schools, some of which are stand-alone departments, associated with Medical schools, and replete with chemists and engineers. The main issue is that students who want to focus on Engineering will not apply to a department within the School of Public Health. Faculty who want to work with students with an engineering background have actively recruited them (sometimes from overseas). On the other hand, a bragging right of Berkeley is that the School is on the main campus, and students can take classes from and work with top-notch researchers from other departments. A remedy may be on the horizon in the form of a proposed new joint degree program with the College of Engineering; details are still being worked out.

The Graduate Council suggests an alternative remedy. The Group can take advantage of the inherently interdisciplinary nature of graduate groups and invite faculty from engineering to join the Group. Engineering students receiving degrees from the group would not be receiving degrees from Public Health, but from the interdisciplinary group.

2) *Student Support.* Students are primarily supported through faculty GSRs, and admission offers are only made to students for which initial funding can be guaranteed. Students are matched up with faculty before they arrive and switching seems to be infrequent. The students seemed to think they could not switch (but noted it wasn’t an issue in their particular cases) but the faculty suggested that the first year was to be seen as a time when change is possible. Masters student funding is difficult to come by; some of them are on grants or help with field research in the summer.

3) *Career Advising.* Students felt they have to take a lot of the initiative to get job placement help from faculty

4) *Coursework.* Students and faculty both noted a need for one or more additional quantitative courses as well as more courses in the specific sub-area of Industrial Hygiene. Quality of teaching seemed to be quite variable from the students’ perspective.

5) *Community.* The students asserted that students who choose this particular program like to be independent and find their own way. However, these students were hand-picked by the faculty for this review, and the masters student on the panel indicated that some of the students who are not self-starters were sometimes less happy. The PhD students exhibited a surprising lack of awareness of the situations of other PhDs currently
in the program (as well as recent graduates). The program has a required weekly seminar for all PhD students, but despite this, there seemed to be little interaction among the students. That said, they were successful at gathering a big group to fill out the review report and the students selected to talk with us did not perceive a problem. They did suggest that a photo board be kept up-to-date as it had been in the past, and include post-docs, visitors, etc. as well as a once-a-semester newsletter introducing new people.

**Recommendations**

1. Although the joint degree program with the College of Engineering is a good idea, the Group is encouraged instead to make a more interdisciplinary graduate group by encouraging faculty from Engineering to join the Group.
2. Find resources to offer additional courses, if possible.
3. To aid in community building, find resources to maintain the photo board with up-to-date information about faculty, students, post doctoral scholars, and visitors.
May 10, 2013

Professor Sandrine Dudoit, Chair
Graduate Group in Biostatics
101 Haviland Hall
MC 7358

Dear Chair Dudoit,

At its meeting on May 6, 2013, the Graduate Council discussed the report on the Graduate Group in Biostatistics, which the Council endorsed. I am attaching a copy for your information and that of your faculty colleagues and graduate students.

Thank you for submitting materials about the Group. Recommendations for the Group’s consideration are listed in the report. We would like a response to these recommendations, following appropriate consultation, by November 15, 2013.

Thank you for your co-operation with the Graduate Council.

Sincerely,

Mark Stacey
Chair, Graduate Council

cc: Christina Maslach, Chair, Berkeley Division of the Academic Senate
Stephan Shortell, Dean, School of Public Health
Mark Richards, Dean, Division of Mathematical and Physical Sciences, College of Letters and Science
Andrew Szeri, Dean, Graduate Division
Linda Song, Associate Director, Academic Senate
Diane Hill, Assistant Dean, Graduate Division
Anya Grant, Analyst, Office of the Vice Provost-Teaching, Learning, Academic Planning & Facilities
Review of the Graduate Group in Biostatistics

Graduate Council

May 10, 2013

Introduction

The educational mission of the Graduate Group in Biostatistics at UC Berkeley is to train M.A. and Ph.D. students in the development and application of statistical methods and software to meet evolving statistical inference challenges in the analysis of biological data in fields such as epidemiology and molecular biology. Currently, there are about 40 graduate students in the program (~2:1 Ph.D. to M.A. students). Nineteen faculty are officially associated with the program, although just six "core" faculty effectively run the program with little direct involvement from the other faculty. These six core faculty all have primary appointments in the School of Public Health, Division of Biostatistics, three of them also having a 0% FTE appointment in the Department of Statistics. Most other faculty associated with the program reside in the Department of Statistics, with some others listing Education, MCB, EECS, Integrative Biology, or Mathematics either as full or joint appointments.

Overall, the program is doing well in terms of national reputation and student graduation rates. There is great demand in the job market for the graduates of this program, who have little trouble securing employment both in academia and industry. The program therefore serves a vital societal need. Students overall seem happy with the program, which emphasizes and is known for its unique and rigorous coursework, many Ph.D. students taking 12 or more courses. All students are funded, either by GSR or GSI appointments, and there appears to be no shortage of available GSI positions, particularly within the Department of Statistics. This committee extends its congratulations to the six core faculty from the Division of Biostatistics for successfully running this important program.

However, despite these strengths and successes, there are some concerns, most importantly the growing workload on a small number of faculty members. The field of biostatistics has grown dramatically in recent years driven in part by the expansion of 'big data' experiments in biology made possible by innovations in sequencing and other high-throughput platforms. This expansion has been accompanied by a parallel growth in interest in the Biostatistics program by students and by biological faculty. However, this increase in demand for training and collaboration has not been accompanied by commensurate increases in resources from participating departments. The six core faculty who run the program are clearly overworked. They serve on a huge number of dissertation qualifying exams and committees and together supervise almost all Ph.D. students in the program — this is in addition to performing their regular duties as faculty members in the School of Public Health. The core faculty are concerned, stressed, and worried about the future of the graduate group because of this high workload, the stress associated with the strained resources for the program, the risk of faculty being poached by other institutions, and because two to three of these core faculty expect to retire in the next five years.

However, beyond the core faculty simply saying "no" to their many service requests, the solution to this faculty resource issue may not simply be in hiring new faculty to eventually replace senior faculty since that would not address the workload issue. Fundamentally, this program has shifted over the years from being a truly interdisciplinary graduate group to becoming a focused program primarily within the
Division of Biostatistics within the School of Public Health. While the Department of Statistics does provide some space (although limited) and GSI support, that department has strategically moved away from “biostatistics” over the years in terms of the research interests of existing faculty and new hires. In short, the Department of Statistics is no longer the strong partner in the Graduate Group in Biostatistics that it once was. Further, within the School of Public Health, there appears to have been limited interest in expanding the Division of Biostatistics by way of hiring new faculty. Thus, currently and into the foreseeable future, the Graduate Group in Biostatistics is de facto a program administered almost solely by the six core faculty within the Division of Biostatistics. But the workload for that effort, including the FTE requirement, does not appear to be adequately supported by the School of Public Health, likely in part because the School of Public Health is not obliged to fully support any graduate group. And of course, as per the way the University assigns resources, no graduate group can expect direct FTE support from the University. Thus, it appears that the University needs to find a way to better support this important program for it to survive and flourish in the long term. This may require a fundamental reconfiguration of the Graduate Group in Biostatistics so that it aligns better with the interests of a more formal supportable infrastructure within the University.

Part of the challenge is a resource issue. Also, there appears to be a need for better clarity of the program plans for its long-term evolution and of the participating faculty’s expectations of one another in terms of workload. Thus, it would be helpful to develop both a formal strategic plan and a set of programmatic bylaws for this graduate group. This would also be an important component of any lobbying efforts of the group to gain more resources on campus, and even to clarify the identity of this group — some of the students seemed to be unaware that the Graduate Group in Biostatistics and the Division of Biostatistics were different entities.

There were also concerns expressed over space. Currently, there is some space (two small rooms with a few chairs and tables) set aside just for students in the Graduate Group in Biostatistics, but students reasonably felt that this space was woefully inadequate in terms of quality and square footage. Related perhaps to this lack of physical infrastructure and the role such infrastructure can play in providing a cohesive environment that promotes synergy and collaboration, the GC felt that students did not synergize as much as we have seen in other graduate groups. We suggest formal retreats would be helpful (for students and faculty), and it was suggested by students that the graduate group should support a student-run formal research seminar series. Certainly, it seems that the student body could be encouraged to be more directly involved in administering the program — and provided with the physical and financial resources for doing so. Existing campus resources, e.g., funds available at Graduate Assembly, should be exploited for such purposes.

Finally, we note that while the demographic of student body in this program is well represented between the sexes (e.g., since 2008, women make up over 50% of the study body), there are concerns over the racial/ethnic composition of the student body. In particular, between 2008 and 2012, no African American students were admitted, one Hispanic student was admitted, one Native American student was admitted, and two Asian students were admitted. Meanwhile the proportion of admitted white students ranged from 40% in 2009 to 100% in 2010. While the total number of admits is small (e.g., in 2010 three students were admitted), and we were not able to review comparable statistics from competing institutions, these statistics are low by campus standards. The GC understands that the group must address several core issues that affect its long-term prospects first, but we find these statistics
Recommendations

Biostatistics is clearly an important and thriving program on the Berkeley campus. Demand by incoming students and for its graduates are both strong, but University resources for this program are relatively weak in relation to the workload associated with maintaining this program and providing the related services to the many constituents on campus who have needs in the general area of biostatistics. As such, the program is inhibited by a lack of investment by the partner departments. New faculty FTE should be hired and additional space and financial resources should be provided. An opportunity to address these long-term issues may present itself during the next formal reviews of the School of Public Health and the Department of Statistics, which are expected in the next couple of years. The Graduate Council believes the relation between these departments and the Biostatistics Graduate Group should be a consideration during those department reviews. In the near-term, we have the following recommendations for the faculty in the program.

1. The Graduate Group in Biostatistics should develop its own long-term strategic plan for evolution and sustainability. Specific issues to address include the relationship between the group and its partner departments/units, namely the School of Public Health and the Department of Statistics, and assessment of the status of the program in relation to the resources available to support the program. One particular issue to be considered in this strategic planning is the optimal size of the current student population, given today’s faculty resources, and how that capacity would change with anticipated retirements, on the one hand, and with investment from the partner departments, on the other hand.

2. Develop a set of bylaws that at least: outlines the expectations of all participating faculty; formalizes mechanisms of communication between faculty and students for dealing with issues that arise; outlines steps to encourage student involvement in running the program; fosters a sense of community; and provides mechanisms for orderly change in the Executive Committee participation.

3. Individual core faculty cannot likely sustain the program at its current size or maintain their service load with the resources presently available. These faculty should act collectively to bring about the necessary change to better align current resources with the program size and its service role on campus.

4. While addressing these larger issues, the graduate group must consider the issue of under-represented minorities and the disparity in admission rates between whites, Asians and other populations. We understand that there are structural issues that are more proximate, but this issue cannot be lost in the process of addressing them.

5. Explore mechanisms of providing support for retreats and other student-led activities, e.g., from the Graduate Assembly and other sources on campus that are available to graduate programs.
Professor Arthur Reingold, Chair  
Graduate Group in Epidemiology

Dear Chair Cole,

At its meeting on May 5, 2014, the Graduate Council discussed the report on the Graduate Group in Epidemiology, which the Council endorsed. I am attaching a copy for your information and that of your faculty colleagues and graduate students.

Thank you for submitting materials about the group. Recommendations for the group’s consideration are listed in the report. We would like a response to these recommendations, following appropriate consultation, by December 1, 2014.

Thank you for your co-operation with the Graduate Council.

Sincerely,

Mark Stacey  
Chair, Graduate Council

cc:   Elizabeth Deakin, Chair, Berkeley Division of the Academic Senate  
      Andrew Szeri, Vice Provost, Graduate Studies  
      Stefano Bertozzi, Dean, School of Public Health  
      Linda Song, Associate Director, Academic Senate  
      Diane Hill, Assistant Dean, Graduate Division  
      Anya Grant, Analyst, Office of the Vice Provost-Teaching, Learning, Academic Planning & Facilities  
      Noam Manor, Research Analyst, Office of Planning and Analysis  
      Janene Martinez, Student Services Advisor, Graduate Group in Epidemiology
Graduate Group in Epidemiology  
Graduate Council  
May 2014  

A. The Review  
The Graduate Council review team, comprised of Professor Tarek Zohdi (chair) and Professor Larry Karp, were joined by Graduate Council Chair Mark Stacey and Associate Dean Susan Muller and met with Epidemiology students and faculty on April 18, 2014. In general terms, the graduate group is harmonious and well organized, with an exceptional graduate program. Extramural support is quite high. Several of the senior members of the graduate group are well known nationally and internationally, and the department is considered one of the best programs in the country. Additionally, it has several stellar young faculty. The program was very well-prepared for the review.

B. Background  
Epidemiology is the study of the distribution of health, disease and injury in the population and the factors responsible for the observed distribution. UC Berkeley awarded its first PhD in epidemiology in 1954, and since then has awarded a total of 292 PhDs in epidemiology. The program is housed within the School of Public Health and strongly collaborates with groups therein, in particular Biostatistics.

C. Program Strengths  
The program is well run, with the students providing glowing reviews. Their candid comments matched very closely to those of the faculty. The program has an exceptional record of student placement in academia and in service to society. The program funds all of the students it admits.

D. Issues of Concern  
There are concerns, however.

(1) The lack of group-specific space has left the students feeling disconnected from each other and from the faculty (other than their respective advisors).
(2) There is rapid progress in modern computational tools involving complex biostatistics. The students indicated that there is a dire need for help in applying these tools to their research in epidemiology.
(3) There is a student need for a higher level Epidemiology methodology course.
(4) The Epidemiology program needs to engage the younger faculty more vigorously in the administration of the program.
(5) Peer-to-peer student advising has been successful, but it is informal and largely the results of the efforts of one proactive senior PhD student.

E. Recommendations
In order to address the above concerns, the Graduate Council has the following specific recommendations for the graduate group.

(1) A structured program for peer-to-peer student advising should be developed to provide junior students with guidance on the program in general and preparation for exams in particular. This could take the form of assigning a senior student in the group as a mentor or the establishment of an advising group of senior students. We encourage the group to work with the students to develop an effective and sustainable structure.

(2) We understand that the Division of Biostatistics in the School of Public Health is in the process of making a three-year appointment of an individual with the expertise to address the needs of Epidemiology students. We encourage the Epidemiology Graduate Group to coordinate resources with Biostatistics so that their students can make effective use of this resource. While this appointment may address the near-term, the long-term need in this area should not be forgotten and the group should work with the Division of Biostatistics, and perhaps others in the School of Public Health, to find a permanent solution.

(3) A higher level Epidemiology methodology course should be developed.

(4) The Epidemiology program needs to engage their faculty more broadly in the administration of the program. Currently, it is energetically driven, admirably so, by Professor Arthur Reingold. However, the program needs to fully engage a broader set of faculty in all levels of faculty governance in the long term, such as in (a) admissions decisions (b) funding allocation and (c) teaching assignments. As part of this effort, the group should develop by-laws for the running of the group, including documenting the leadership structure for the group, and submit them to the Graduate Council by December 2014 (see http://www.grad.berkeley.edu/program_proposal/de_bylaws.shtml for a template).
Professor Ann Keller, Chair  
Graduate Group in Health Services and Policy Analysis

Dear Chair Keller,

At its meeting on May 5, 2014, the Graduate Council discussed the report on the Graduate Group in Health Services and Policy Analysis, which the Council endorsed. I am attaching a copy for your information and that of your faculty colleagues and graduate students.

Thank you for submitting materials about the group. Recommendations for the group’s consideration are listed in the report. We would like a response to these recommendations, following appropriate consultation, by December 1, 2014.

Thank you for your co-operation with the Graduate Council.

Sincerely,

Mark Stacey  
Chair, Graduate Council

cc: Elizabeth Deakin, Chair, Berkeley Division of the Academic Senate  
Andrew Szeri, Vice Provost, Graduate Studies  
Stefano Bertozzi, Dean, School of Public Health  
Linda Song, Associate Director, Academic Senate  
Diane Hill, Assistant Dean, Graduate Division  
Anya Grant, Analyst, Office of the Vice Provost-Teaching, Learning, Academic Planning & Facilities  
Noam Manor, Research Analyst, Office of Planning and Analysis  
Ghada Haddad, Program Manager, Health Services and Policy Analysis
Graduate Group in Health Services and Policy Analysis (HSPA)
Graduate Council
May 2014

A. The Review
Joined by Chair Mark Stacey and Graduate Division Associate Dean Susan Muller, the Graduate Council review team, consisting of Professor Larry Karp as chair, Professor Tarek Zohdi, and student representative Kimberly McNair, met with HSPA students and faculty on April 11, 2014. The Health Services and Policy Analysis Group prepares students for research, teaching, and public service, dealing with health issues in the U.S. and globally. The group draws heavily on faculty from the School of Public Health, and has core faculty from demography, economics, agricultural and resource economics, political science and the Haas School of Business. It is also associated with the medical school at UCSF. The group is highly ranked, competing for graduate applicants with other top-ten programs, including Michigan, Harvard, Johns Hopkins, UNC, and Yale. The group prepared an admirably detailed and complete self-evaluation for this review.

B. Background
The group has recently added a fourth specialization, in population health, to the existing three tracks in economics, political science, and the sociology of organizations. The group admits on average five to six students a year. In addition to the PhD program, students have the opportunity to earn a terminal Master’s degree in the affiliated social science disciplines. Students are accepted and initially supported financially by the department instead of by individual faculty members. Students are assigned advisors upon entry, and at the end of their first year have the opportunity to switch or to add additional advisors.

C. Program Strengths
The program attracts top quality students. The students who spoke to us are enthusiastic about the program. Graduates from the program obtain good jobs, approximately half of these in academia. The faculty consists of distinguished scholars and shows flexibility and adaptability, e.g., in creating the fourth field, and in responding to problems that arise, e.g., related to student access to some courses.

D. Issues of Concern
We noted the following issues.

(i) Some students had problems gaining entry to, or feeling a part of, particular required courses, e.g., in the sociology of organizations.

(ii) The four-semester sequence on theory and methods taken by all HSPA students is currently not an efficient use of students’ time.

(iii) Although students do well in the job market, the process that prepares them for the market is ad hoc and inadequate for some students.

(iv) There is uncertainty about the actual list of core faculty.
(v) Information about fellowship opportunities could be disseminated more clearly.
(vi) The HSPA website is confusing.
(vii) An entering class of five to six students spread over four fields potentially leads to student isolation.
(viii) Space constraints limit the development of professional and social networks amongst the students, and also likely between the faculty and students.

E. Recommendations

HSPA faculty has presumably decided that it is efficient to have four tracks despite the small cohort size. Balkanization seems a likely consequence of this decision, requiring special effort to maintain cohesion and coherence in the group. To a large extent, we think the group has done a good job in meeting these challenges, and we hope that the following recommendations further this effort. The group has negligible or zero ability to improve the space problem. The space constraints, and the resulting risk that students in different tracks are isolated from their colleagues, make it both more difficult and more important that the group address the other recommendations below.

1) The faculty should identify and remedy the cause of students’ difficulty in obtaining access to some classes. If this problem arises because instructors in those courses are unfamiliar with HSPA, then the remedy is to raise the profile of HSPA and to foster relations across faculty. If the problem arises from the instructors’ concern that HSPA students have inadequate preparation for their course, then the remedy is to ensure that the students do in fact have adequate preparation. This has not been an issue in the economics track, where students are required to pass a Math Camp before taking the economics courses. Although an equally formal approach would perhaps not work for the other tracks, the faculty should consider developing a core of common standards. That core might be supplemented by a reading list given to students during the summer before they begin the program, and functioning like a self-guided Math Camp.

2) Students found parts of the four-semester sequence useful and some components to be of little value. We recommend that the faculty put together a list of objectives for this sequence and appoint a student committee to examine and respond to this list. The student response should include both their views about the appropriateness of the items on the list (e.g., what should go and what should be added) and on how objectives on the list could be better met. This process potentially will result in real improvements and will foster communication.

3) Student and faculty representatives had markedly different views about the nature of job market preparation currently in place. We recommend that the
process be formalized, with the same key ingredients for students in all four tracks, and for students entering both academic and non-academic job markets. One possibility is that the key ingredients include a formal job market talk and mock interviews. The job market talk should simulate the experience of an actual job market talk, with tough questioning. The group should strive to develop a culture in which attendance at the job market talks is “essentially” mandatory for all graduate students across all four tracks in the group (or at least those who have advanced to candidacy). Of course, strong attendance by faculty is critical. The mock interviews should contain faculty across the four tracks.

4) The group should try to improve communication both within the group and across the campus. The website provides a critical portal for both types of communication. The current website is confusing and incomplete; we understand that it is in the process of revision. The group should also develop a graduate handbook, posted on the website, that enunciates clearly the requirements for each of the four tracks. Students should help to determine the information this handbook contains, and the handbook should be kept up to date. There should be a list-serve that enables faculty and students to notify all their colleagues of funding opportunities they encounter. A separate list-serve should notify group members of all seminars, with prominence given to job market talks.
Professor Richard Stephens, Program Chair and Head Graduate Advisor
Graduate Group in Infectious Diseases and Immunity

Dear Chair Stephens,

At its meeting on October 5, 2015, the Graduate Council discussed the report on the Graduate Group in Infectious Diseases and Immunity, which the Council endorsed. I am attaching a copy for your information and that of your faculty colleagues and graduate students.

Thank you for submitting materials about the group. Recommendations for the group’s consideration are listed in the report. We would like a response to these recommendations, following appropriate consultation, by April 25, 2016.

Thank you for your co-operation with the Graduate Council.

Sincerely,

Lisa Alvarez-Cohen
Chair, Graduate Council

cc: Benjamin Hermalin, Chair, Berkeley Division of the Academic Senate
Fiona Doyle, Dean, Graduate Division
Stefano Bertozzi, Dean, School of Public Health
Andrea Green Rush, Executive Director, Academic Senate
Linda Song, Assistant Dean, Graduate Division
Teresa Liu, Graduate Student Services Advisor, Graduate Group in Science and Mathematics Education
Anya Grant, Analyst, Office of the Vice Provost-Strategic Academic and Facilities Planning
Noam Manor, Research Analyst, Office of Planning and Analysis
Program Review: Graduate Group in Infectious Disease and Immunity (IDI)

Graduate Council

October, 2015

Introduction

The Graduate Group in Infectious Disease and Immunity (IDI) was established in 1996 as an interdisciplinary PhD training program combining basic scientific research in infectious disease with the fundamentals of public health. The IDI graduate group is housed in the Division of Infectious Diseases and Vaccinology in the School of Public Health. There are currently 29 faculty affiliated with the group drawing from Molecular and Cell Biology, Chemistry, Public Health, Optometry, Civil Engineering, Bioengineering, Plant and Microbial Biology, and Environmental Science, Policy, and Management. The program accepts three to four graduate students per year from a pool of 50 or more. Students are required to take a core curriculum that includes infectious disease biology, immunology, epidemiology, biostatistics, and research design, all with a focus on human infectious diseases of global significance. The IDI hosts weekly research seminars for students, faculty and postdocs. Students also take a graduate seminar on research design that covers grantsmanship, writing, and speaking skills. At the time of review the program had 16 PhD students. Time to degree was five to six years. The review took place on April 20, 2015, and consisted of separate meetings with graduate student representatives and faculty, including the Chair Stephens, Vice Chair Riley, and Professor Stanley. Associate Dean Jill Stoner and Chair Alvarez Cohen-participated as honored guests from the Graduate Division and Graduate Council, respectively.

Program Strengths

The IDI Graduate Group is a competitive, nationally recognized program that is at the leading edge of global health issues. There is widespread faculty interest from across campus. The program has a clear governance structure, established bylaws, and encourages student participation. Professor Robert Stephens has chaired the program for the last five years providing leadership and continuity. The 2012 recruitment of Assistant Professor Sarah Stanley was widely seen by students and faculty as a major boon for the program. The graduate students generally expressed satisfaction with the program, and commented on the good esprit de corps. Placement of program graduates in academic and research positions is very high, averaging over 90% since 1996. Both faculty and students felt that laboratory, office, and classroom space was excellent since moving into the new Li Ka Shing building. The faculty and staff made good progress over the last five years in addressing concerns raised during the previous review. Specific changes are listed below:

1. Stipends were raised and have been equalized within the program for GSI and GSR appointments and pre- and post- qualifying exam students.
2. Administrative issues and financial management problems have been addressed by staff replacements.

3. The graduate group seminar was revitalized and an annual on-campus “retreat” has been initiated in an effort to develop a more cohesive social and academic environment.

Areas for Concern/Improvement

1. Graduate student funding: Funding challenges were cited as the primary factor limiting the size of the program as well as the choice of mentors for students. This was seen by faculty and students as a significant hurdle to graduate education. Among the 29 faculty listed as participants in IDI, only seven currently sponsored students in their labs; two of the students were co-sponsored by two faculty members, and half of the students were sponsored by the program chair and co-chair (Professor Riley). Students stated that only three to four laboratories were open to taking IDI students because of lack of financial support for these students. The students commented on disparities in funding among students from different programs within the same laboratories. Although the stipend for IDI students had been raised twice in the last three years it was lower (at $29,500 for 2014) than all but two of their peer institutions (University of Washington and Washington University).

2. Program size: There was a general desire by the faculty to grow the program with regard to student numbers. Faculty and students agreed that the program is unique and highly sought after, and that there were sufficient job opportunities for graduates. However, the lack of student funding available, particularly during the first year, was repeatedly given as the reason for the current size of the graduate group. There were seven core faculty in the program at the time of review with a strong desire to increase this number. Increasing the size of the core faculty was viewed as important for filling intellectual gaps in the program as well as drawing more active researchers and mentors into the program.

Recommendations

1. Graduate student funding is clearly a big hurdle for the future growth potential of the IDI graduate group. The core faculty are encouraged to continue discussions with faculty and units on campus that participate in IDI as well as seek help from the campus for fundraising, potentially as part of the Chancellor’s new Global Campus initiative.

2. The IDI Graduate Group is a clear leader in this emerging area and with the occupancy of the new Li Ka Shing center they have excellent facilities available. We recommend that the IDI Graduate Group work to increase the size of the core faculty by one to two FTE. The new faculty should fill the intellectual gaps identified by the
faculty and students, have active research programs, and be willing to mentor IDI students in their laboratories.
March 19, 2010

Professor John Swartzberg  
Director, Graduate Group in Health and Medical Sciences  
570 University Hall  
MC 1190

Dear Director Swartzberg,

At its meeting on March 8, 2010, the Graduate Council discussed the report on the Graduate Group in Health and Medical Sciences. The Council endorsed the report, which I am attaching for your information and that of your faculty colleagues and graduate students.

Thank you for submitting materials about the Group. Recommendations for the Group’s consideration are listed at the end of the report. We would like a response to the recommendations, following appropriate consultation, by October 1, 2010.

Thank you for your co-operation with the Graduate Council.

Sincerely,

Ronald Cohen  
Chair, Graduate Council

cc: Christopher Kutz, Berkeley Division of the Academic Senate  
    Sandy Ellison, Office of Planning and Analysis  
    Diane Hill, Graduate Division  
    Anya Grant, Office of the Vice Provost-Academic Planning & Facilities  
    Jessea Greenman, Graduate Student Affairs Officer
Review of the Graduate Group in Health and Medical Sciences
Graduate Council
March 8, 2010

Reviewers: Jeff Romm (Chair), Gian Garriga, Pamela Berkeley, Ronald Cohen, and Susan Muller

Faculty Interviewees: John Swartzberg, Colette Auerswald, and Douglas Jitte

Student Interviewees: Thomas Blair, Nicole Wojtal, Aaron Losey, Jaclyn Shaw, and Christopher Vercammen-Grandjean

Overview
The Graduate Group in Health and Medical Sciences was founded in 1971 to provide medical education that drew upon faculty resources of the Berkeley campus. Its Program in Health and Medical Sciences was embedded within Berkeley’s School of Public Health in 1993 and functions as part of the UCB-UCSF Joint Medical Program (JMP). In recent years, the Group became part of the UC-wide Program in Medical Education (PRIME), a UCOP initiative to better address the medical needs of California’s underserved populations. The Berkeley medical program has specific responsibilities within PRIME for professional education directed toward underserved urban communities in Northern California. Programs on other campuses have different problem designations.

The Group’s mission is to educate doctors who will lead the medical profession toward more effective engagements in the situational contexts and consequences of medical practice. It offers a medical education that spans the contextual as well as individualized constructs of health, illness and treatment. It provides broad access to relevant courses, requires in-depth clinical experience, and develops research capacities in directions framed by situational realities. The span of learning includes public health, biological sciences, humanities, and the social and behavioral sciences. The Program’s unique strength is in integration of these diverse sources of knowledge to solve real-world problems, particularly in underserved communities.

The Program in Health and Medical Sciences admits about sixteen students a year, or 48 over its three-year length. All students are admitted first by the UCSF Medical School, then apply for admission to the Program. Those in the Program typically are in the top quartile of UCSF admits. UCSF provides what faculty and students describe as “conventional” medical education, emphasizing transfer of the specialized content of professional medicine; the Program emphasizes the context and cultures of medical practice, integrative problem solving, and research that emerges from this source of knowledge and method. Berkeley awards an M.S. after three years, UCSF the M.D. after five.

Approximately fifty Berkeley faculty are members of the Group, as are some UCSF faculty and community clinicians in the Joint Medical Program. The faculty serve three converging streams of coursework. The research stream builds capacities in problem identification, research design, methods, execution, analysis, interpretation and publication. Student research projects spread across the humanities (e.g., ethics, culture), the behavioral sciences (e.g., psychology,
organization), natural sciences (e.g., epidemiology, ecology), and various combinations of these to fit the circumstances of the selected problem.

The second stream is described as ‘Contextually Integrated Case Based Curriculum,” (CICBC). This is a staged sequence of 77 cases that drive student-led inquiry into concrete problems. The cases are taken up in learning groups of eight students and a faculty guide each. The sequence continues over the three years of the program and is a transformative process that emphasizes self-driven learning, problem-solving, contextual adaptation, integration and cooperation.

The third stream is clinical practice, in which students engage and act upon the array of problems that communities face. These experiences inform research directions and build adaptive, integrative, and innovative qualities for effective community medical services.

Graduates of the program award satisfaction ratings that are among the highest on the Berkeley campus.

The Graduate Council last reviewed the Program in 1998. Review comments helped to provoke the development of the CICBC, Group bylaws, and strengthened Executive Committee and program coordination.

Assessment
This is a remarkable program. Faculty and students alike share its large vision, social commitment, enthusiasm, intelligence, motivation, adaptability, constructiveness, and energy. Group responses to the 1998 review are indicative. The Group took general comments and moved to transformative actions in curriculum and governance that went above and beyond most campus expectations. The CICBC model and execution should be of interest, as it is nationally, to other graduate groups. The research stream is worth exploring with other Master’s programs that have a core research component. The same may be true for the clinical stream, which is perhaps more developed in health and medicine than in other Berkeley programs seeking vital relations with communities they are intended to serve.

Coordination is at the heart of the Program’s success. It is essential for the viability of a program that moves faculty and students within and between two campuses, each with its own rhythms of course schedules and distributions of clinical responsibilities. This program has outstanding faculty and staff coordinators. They sustain the collective focus in the CICBC and research streams, regular Group gatherings, and flawless management of logistics and communications. One hundred percent of Program graduate surveys gave the top rating for satisfaction with staff and services.

The Program has space problems - in configuration, footage, and security of allocations. Most faculty and students are on the move, so they share spaces in a kind of tag-team regime that can at times compress people rather tightly (or collegially, as one student put it). Classroom assignments, which occur at the School level, don’t necessarily fit the timing and configuration needs of self-learning groups of people on complex schedules. Six groups are in process each semester.
The current spatial upheaval in the west campus health and medical sciences is one source of the problem. It may also offer an opportunity to obtain adequate footage for the Program and to arrange it in ways that serve circular rather than squared patterns of relationship.

The Program relies upon ‘hub’ computer capacities that are intended to provide common predictable access to the full range of knowledge bases on which students and faculty depend. These capacities have declined relative to demand and opportunity, and no longer support the needs of the program. Computer and space facilities received poor assessments from faculty and students alike.

Financial burdens and stipend concerns are those common in most Berkeley professional programs. About sixty percent of the students are self-financed. Stipends are substantially less than in comparable institutions. Students are investing in public service careers they may not be able to afford.

**Recommendations**

We found no fault in the Program itself. Those associated with it are real innovators and problem-solvers, staying well ahead of the curve to the extent that the campus and state contexts allow. The following are for campus consideration, as ways to secure and enhance a marvelous, and rather secret, program that appears to be leading medical research and practice in new directions.

1. Provide adequate designated space and spatial design commensurate with the vitality and needs of the Program.

2. Secure the resources needed to upgrade the computer ‘hub’ to capacity commensurate with the knowledge opportunities and access the program requires to maintain its excellence.

3. Include specific consideration of the financial needs of public service-oriented medical students in the more general analysis of finance for professional students at Berkeley.

4. Open opportunities for exchange among graduate groups about curriculum concepts and methods, styles of governance, modes of coordination, formations of collegiality, and approaches to cooperation with communities their programs are intended to serve. Perhaps few on the campus know of Berkeley’s distinctive and distinguished medical program. The same must be true of other programs. The potential benefits of sharing sources of vitality seem worth the facilitation.
Appendix 11: Competencies
# General MPH Competencies

**EVIDENCE AND KNOWLEDGE: Apply evidence-based principles and existing knowledge to critical evaluation and decision-making in public health.**

- Correctly use and define basic epidemiology terms.
- Discuss concepts of prevention at all levels, including health promotion, screening and vaccination.
- Demonstrate knowledge of the biological basis of health and disease.
- Critically evaluate the strengths & limitations of published studies and epidemiologic reports.
- Demonstrate knowledge of the major causes and trends of morbidity and mortality in the U.S.

**RESEARCH: Design a research study related to public health.**

- State a public health problem and formulate a research question and hypothesis.
- Identify appropriate data sources for the purpose of describing a public health problem.
- Explain the strengths and limitations of various study designs (i.e. qualitative, observational, quasi-experimental and experimental) used to assess health and disease across populations.
- Explain and choose appropriate statistical tests when addressing a research question using data.
- Demonstrate ability to manage research data, analyze data using a software package (e.g., Excel, R, Stata, or SAS) and interpret results.

**ETHICS AND SOCIAL JUSTICE: Demonstrate ethics, values, and professional practices in public health decision-making, including social accountability and community stewardship.**

- Explain ethical concepts in health care, public health policy, and public health research, including the obligation to respect each individual’s autonomy.
- Identify social determinants of health.
- Demonstrate an understanding of the organization of people in hierarchies through policies, economic systems, and social categories (such as race, socioeconomic status, gender, and sexuality); develop the capacity to recognize and respond to health and illness as the downstream effects of these broad power structures (structural competency).
- Explain how to develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served.
- Understand and identify the interpersonal power dynamics that exist in our relationships with populations we study, research, and serve.
- Be able to listen, learn, and engage respectfully with the values and priorities of communities and individuals that are different from our own.
- Explain the concepts of globalization and sustainable development and their relationship to population health.
<table>
<thead>
<tr>
<th>ENVIRONMENT: Describe effects of environmental factors on human health locally and globally.</th>
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<tr>
<td>Describe how social and political factors and policies influence environmental quality and communities differentially locally and globally.</td>
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<tr>
<td>Explain the term &quot;exposure&quot; and identify pathways through which individuals and communities can be exposed to environmental agents and factors.</td>
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<td>Recognize patterns of disease potentially related to environmental factors.</td>
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<td>Show how standards for air or water are used to define what is acceptable in environmental and occupational health, and interpret such standards.</td>
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<tr>
<td>Discuss major policy and intervention strategies to reduce environmental exposures and identify those that can be applied &quot;upstream&quot; on a pathway.</td>
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<td>Identify impacts of climate change and major options for mitigation and adaptation to climate change.</td>
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<tr>
<th>COMMUNITY ENGAGEMENT AND INTERVENTION: Identify and engage critical stakeholders for the planning, implementation and evaluation of public health programs, policies and interventions.</th>
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<tbody>
<tr>
<td>Define a public health problem and develop an appropriate project to address the problem.</td>
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<tr>
<td>Compare and contrast approaches at various levels (intrapersonal, interpersonal, organizational, community, societal, etc.) to improve a public health problem.</td>
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<tr>
<td>Apply methods of advocacy, such as coalition-building, persuasive communications (including via evolving technologies like social media), negotiating with stakeholders, etc. to influence public health outcomes</td>
</tr>
<tr>
<td>Know how to plan, execute, monitor and evaluate projects, including creating and staying within timelines and budgets.</td>
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<tr>
<th>LEADERSHIP AND PROFESSIONALISM: Understand how to influence, motivate and facilitate a group of people to work toward and achieve a common goal or vision, with cultural and institutional humility.</th>
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<tr>
<td>Demonstrate interpersonal skills and self-awareness to cultivate inclusive environments and establish and sustain professional relationships.</td>
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<td>Demonstrate ability to work in a collaborative manner in a team setting.</td>
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<td>Demonstrate initiative, strategic thinking, and problem solving skills.</td>
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<tr>
<td>Apply systems thinking tools to a public health issue.</td>
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<tr>
<td>Describe the formal and informal decision-making structures and power relationships within an organization. Be able to identify stakeholders and decisions makers. Demonstrate confidence and competence to influence change.</td>
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<tr>
<td>Effectively lead meetings and demonstrate group facilitation skills.</td>
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</table>
### Demonstrate professional quality presentation and group facilitation skills, and effective call to action.

### Communicate effectively verbally and in writing with a wide range of people in varying positions and organizations.

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<tr>
<th>HEALTH POLICY ANALYSIS: Understand the role that major systems and policies play in population health and healthcare.</th>
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<tbody>
<tr>
<td>Describe the policymaking process and the respective roles of government and markets in influencing health and healthcare.</td>
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<tr>
<td>Explain the institutional, cultural, economic, and political foundations of the US healthcare system and of population health.</td>
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<tr>
<td>Articulate pivotal issues in the national debate on health care reform and cost trends in the USA.</td>
</tr>
<tr>
<td>Identify socio-economic determinants of access to health insurance and health care -- and how this impacts marginalized communities.</td>
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<tr>
<td>Describe the main components and issues in the organization and payment methods for health services delivery.</td>
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Environmental Health Sciences MPH

- Explain mechanisms of toxicity and interpret toxicological and genomic data of chemical agents for health effects of environmental and occupational exposures.
- Apply the principles of epidemiology to assess evidence of health effects related to physical, chemical and biologic agents in the environment and workplace.
- Describe major policy issues, institutions and authorities in Environmental and Occupational Health and develop pertinent analyses that reflect EHS.
- Describe how humans are exposed to chemical, biological, and physical agents in the environmental and workplace and how exposures are measured.
- Collect, manage and analyze environmental data, calculate dose and exposure, (and) present analyses.
- Identify physical, chemical and biologic hazards in the environmental and workplace, and recommend prevention or mitigation strategies.
- Apply risk assessment, global burden of disease and other methods to synthesize data for policy contexts.
- Define environmental justice and how it relates to environmental health.

Epidemiology MPH

- Demonstrate understanding of formulating a research question, study design, obtaining or collecting epidemiologic data, and data analysis.
- Collaborate with investigators and statistical colleagues in the collection and analysis of data from public health studies.
- Identify potential sources of bias and confounding in study design, and develop analytic and design strategies to minimize these effects.
- Implement methods of data cleaning and documentation for epidemiologic data sets.
- Use and interpret appropriate descriptive and regression analysis techniques for continuous, binary, count and censored-time-to-event outcomes to analyze data from public health studies.
- Determine the sample size needed for a study.
- Develop written and oral presentations based on analyses of data for public health audiences.
- Use appropriate regression analysis techniques for continuous, binary, count and censored time to event outcomes to analyze independent data from medical and other public health studies.
Epidemiology/Biostatistics MPH

- Demonstrate methodological expertise in selecting and formulating a research hypothesis, study design, obtaining or collecting epidemiologic data, and data analysis and interpreting/presenting in written and oral forms.
- Collaborate with both investigators and statistical colleagues in the analysis of data from biomedical and public health studies applying knowledge of summary evidence using systematic review or meta-analysis.
- Implement methods of data management and cleaning documentation for epidemiologic data sets, including using SAS, R, and/or Stata.
- Use appropriate regression analysis techniques for continuous, binary, count and censored time to event outcomes to analyze data from medical and other public health studies.
- Conduct epidemiologic analyses for linear, logistic, categorical, and continuous data, Cox, and Poisson regression, including multivariate and longitudinal models.
- Provide expertise in data analysis and statistical methods.
- Interpret study findings including critically identifying strengths and limitations of individual studies.
- Demonstrate ability to clearly write grant proposals and results of research studies.

Health and Social Behavior MPH

- Apply behavioral and social science theories in the planning, implementation, and/or evaluation of health promotion intervention programs.
- Develop a research or grant proposal that examines the impact of social and structural factors on a population’s health.
- Compare and contrast approaches to measuring disparities.
- Develop a plan to monitor and evaluate the reach, fidelity, quality, impact and outcome of public health interventions.
- Identify individual, organizational, and community concerns, assets, resources and deficits for social and behavioral science interventions.
- Demonstrate how to use a range of strategies for effecting change from individual programs, behavioral economics, policy, and communication.
- Identify, assess and think critically about determinants of community and population health, including cultural, social and bio-behavioral factors contributing to health related behaviors.
- Develop and implement strategies in health promotion advocacy and intervention.
- Apply theoretical and methodological perspectives in analyzing the behavioral, cultural and ethical dimensions of a community health problem.
- Develop and articulate policy options for the achievement of health promotion and disease prevention objectives within a broad community or population health context.
- Critically analyze and evaluate the nature and process by which research informs practice and practice influences research in community and population health.
Health Policy and Management MPH

- Use knowledge of the structures, stakeholders, political system and environmental context of health and health care to formulate solutions for health policy problems.
- Describe and apply the basic language and concepts that underpin managerial decision-making (financial, operations, organizational behavior, strategy).
- Assess a health care management situation, develop alternative courses of action, and make appropriate managerial decisions consonant with that assessment, and aligned with recommendations from the management literature.
- Explain the structure, organization, policy-making, delivery and financing of the U.S. health care system, and how these features affect system performance in terms of efficiency, quality, equity, and effectiveness.
- Apply management principles and systems thinking to planning, organizing, leading and controlling health care enterprises.
- Apply skills in financial accounting and analysis to healthcare administration decisions across multiple sectors.
- Apply principles of health economics in analyzing the behavior of healthcare market stakeholders.
- Apply policy analysis skills to agenda setting and policy implementation with a firm understanding of available points of access in the policy making process.

Infectious Diseases and Vaccinology MPH

- Describe the viral, bacterial, fungal, and parasitological agents of infectious diseases of human infectious diseases of global importance.
- Explain the biological (cellular, molecular, microbiologic, and immunologic) and epidemiological determinants of infectious diseases and how they influence disease manifestation clinically at the individual level and distribution/dissemination at the population level.
- Identify the local, state, federal, and international agencies responsible for infectious disease surveillance and control and explain their roles and missions.
- Describe both conventional and molecular laboratory tests applied to identify and subtype microbial pathogens, as well as to test microbial drug resistance.
- Identify current public health problems in communicable diseases and describe how the social, behavioral, environmental, and administrative/policy components of public health affect infectious disease distributions.
- Demonstrate the use of biostatistical methods and software (STAT, SAS, SPSS, or R) applied to analyze infectious disease surveillance data.
Appendix. MPH Competencies by Program - 2.2.16

**Interdisciplinary MPH**

- **EVIDENCE AND KNOWLEDGE**: Apply evidence-based principles and existing knowledge to critical evaluation and decision-making in public health.
- **RESEARCH**: Design a research study related to public health.
- **ETHICS AND SOCIAL JUSTICE**: Demonstrate ethics, values, and professional practices in public health decision-making, including social accountability and community stewardship.
- **ENVIRONMENT**: Describe effects of environmental factors on human health locally and globally.
- **COMMUNITY ENGAGEMENT AND INTERVENTION**: Identify and engage critical stakeholders for the planning, implementation and evaluation of public health programs, policies and interventions.
- **LEADERSHIP AND PROFESSIONALISM**: Understand how to influence, motivate and facilitate a group of people to work toward and achieve a common goal or vision, with cultural and institutional humility.
- **HEALTH POLICY ANALYSIS**: Understand the role that major systems and policies play in population health and healthcare.

**Maternal and Child Health MPH**

- Discuss the major health and social problems facing MCAH populations from demographic, health, social, political and community perspectives, as well as the scientific basis for these concerns and strategies to address them.
- Describe the historical roots and current structure of MCH services in the United States, including Title V legislation, and be able to discuss the core values and strategic objectives that necessitate a special focus on MCAH populations to promote equity in health care (a focus on prevention, individuals and populations, cultural competence, family-centered and community-based systems of services, elimination of health disparities, and evidence-based practice).
- Identify the major sources of information related to MCAH populations, assess their strengths and limitations, and use population data to assist in determining the needs of a population for the purposes of designing programs, formulating policy, and conducting research or training.
- Learn basic principles and applications of quantitative and qualitative research and epidemiology for addressing MCH problems and demonstrate expertise in these skills by completing a capstone research project.
- Demonstrate skills in combining and applying public health principles and techniques across disciplines to solve complex problems within the context of family-centered, comprehensive, culturally competent, community-based maternal and child health programs and systems.
Public Health Nutrition MPH

- Evaluate nutrition research and interpret the implications for public health policies and programs.
- Plan and evaluate the nutrition component of health services, programs, and projects, including nutritional assessment.
- Participate in making policy related to health and nutrition within services, programs, and projects.
- Select, plan, prepare, and evaluate teaching aids and materials that disseminate nutrition information to professional and nonprofessional audiences through various media.
- Analyze and formulate public policy related to health and nutrition.
- Interpret food and nutrition legislation and regulations for professionals and consumers.
- Apply the theories and skills of community organization in an effort to improve food systems at the international, national, and local levels.
- Be able to critically analyze issues in public health nutrition, including reports in the lay press and journal articles.
Biostatistics MA and PhD

MA Competencies

Students pursuing an MA degree in Biostatistics will be expected, upon completion of the program, to be well-versed in the following areas:

- Fundamental statistical methods, including statistical estimation, hypothesis testing, regression analysis, analysis of variance and longitudinal data.
- Algorithms and computer applications.
- Analysis of multivariate data -- categorical and continuous -- with particular emphasis on epidemiology.
- Interpretation of survival analysis data and issues, including knowledge of life table methodology, competing causes of death, medical follow-up studies, parametric models and nonparametric methods.
- Computational biology methods including gene mapping, microarray data analysis and other topics in genomics.
- Methods of analysis using vital and health statistics, census data, rates and adjusted rates.

PhD Competencies

Students pursuing a PhD degree in Biostatistics, upon completion of the program, will be able to:

- Use contemporary statistical methods for estimation, testing, prediction and classification.
- Interact with statistical and scientific colleagues to identify gaps and limitations of current statistical methods.
- Effectively use published statistical and scientific literature.
- Develop new statistical methods and software to implement them.
- Use probability, statistical theory and simulation to study and compare the properties of statistical methods.
- Prepare statistical sections of grant applications.
- Prepare manuscripts for publication in peer-reviewed journals.
- Prepare oral and poster presentations incorporating statistical methods and results for technical and general audiences.
• Evaluate the use of statistics in the research of other statisticians and scientists.

• Collaborate with public health researchers.

• Supervise the statistical analyses of students and research assistants.
Environmental Health Sciences MS and PhD

EHS Educational Competencies

The EHS program promotes understanding of the human health impacts of physical, biological, and chemical agents, and explores the means to assess and control exposures to hazardous substances in the general environment and the workplace.

MS Competencies

The MS program emphasizes interdisciplinary training in EHS. Upon completion of the program, MS graduates will be prepared to:

- Describe how chemical agents are tested for acute, sub-chronic and chronic health effects, including reproductive, developmental and carcinogenic effects, and interpret toxicological data in terms of relevance to human health.

- Describe how humans are exposed to chemical, physical, and biological agents in the workplace and the general environment.

- Describe how exposures are quantitatively assessed and controlled through administrative procedures, personal protective equipment, and engineering technologies.

- Utilize epidemiological data to assess the nature and degree of impact of hazardous agents on the health of human populations.

- Analyze risk management decisions, demonstrating the scientific components of risk assessment and the policy context in which risk management decisions are made.

- Identify areas of uncertainty in the exposure and risk assessment processes.

- Identify significant gaps in the current knowledge base concerning health effects of environmental agents.

- Identify the most important disease burdens and their major environmental risk factors.

- Describe current legislation and regulation regarding environmental health issues.

- Develop and conduct research projects.

- Organize information and data, prepare technical reports and give oral presentations on environmental contaminants and their impacts on human health.
Global Health and Environment MS Competencies

After completing the EHS MPH program, a student will be able to:

Research and Science

- Environment and Health – Describe human health effects of environmental and occupational hazards and their significance.
- Toxicity – Explain mechanisms of toxicology, interpret toxicological data, and assess the adequacy of testing of chemical agents for health effects.
- Exposure – Describe how human are exposed to chemical, physical, and biological agents in the environment and workplaces and how such exposures are estimated or measured.
- Epidemiology and biostatistics – Interpret epidemiological data to assess evidence for health effects and identify factors that affect susceptibility to exposures.
- Community environment – Describe the built environment and identify related health concerns and opportunities.
- Global climate change – Explain climate change and likely direct and indirect impacts on the environment and health.

Impact Assessment

- Applied Technical Assessment – Apply varied methods (e.g., risk assessment, global burden of disease methods using disability-adjusted life years, spatial analysis, health impact assessment, alternatives assessment, green design, etc.) to analyze environmental health data for decision contexts.

Environmental Health Policy

- H. Environmental Health Policy -- Describe major institutions, authorities and programs for occupational and environmental health policy and develop analyses that reflect environmental health sciences and are appropriate to their policy context.
- Global Climate Change Policy -- Define major approaches to achieve climate change mitigation and adaptation in California and internationally.

Professional Practice

- J. Communication skills – Communicate effectively with diverse audiences, organize information to prepare effective written reports, and present cogent, well substantiated arguments for actions to address environmental health concerns.
- K. Environmental health practice – Plan and implement approaches to assess, prevent, and control environmental hazards.
Appendix. Academic Degree Competencies by Program - 2.11.16

Cross-Cutting

- Equity and justice – Define environmental justice and how it relates to environmental health.

International Development

- Economic Development – Describe international approaches to improving development in low and middle income countries.

PhD Competencies

The PhD program is designed to prepare students for careers as independent researchers and educators in the field of EHS or one of its subspecialties. Each program is individualized according to the student’s background and research interest. Emphasis is placed on the development and formulation of research hypotheses and a significant original contribution to knowledge.

In addition to meeting the competencies of the MS program noted above, PhD graduates will be able to:

- Clarify critical gaps in scientific knowledge regarding environmental health problems.
- Conceive, develop and conduct original research in EHS or one of its disciplines.
- Develop and demonstrate written and oral communications skills by publishing scientific papers and presenting papers at meetings, symposia and other venues.
- Demonstrate competence in university-level teaching of EHS.
Epidemiology MS and PhD

MS Competencies

Upon satisfactory completion of the MS curriculum with a concentration in Epidemiology, graduates will be able to demonstrate the following competencies:

- Describe the nature of disease distributions in populations and the factors that influence these distributions.
- Explain and discuss the strengths and weaknesses of the key study designs used in epidemiological research, i.e., cross-sectional, ecological, case-control, cohort, and experimental (field trials) designs, and the analytic approaches and techniques applicable to each design.
- Analyze and address a given epidemiologic question, select the most appropriate study design and develop a detailed study proposal.
- Utilize biostatistical concepts and methods appropriate to epidemiological research.
- Prepare, manage, and analyze epidemiologic data sets using appropriate computer hardware and software packages and applications.
- Critically evaluate the research questions, methods, analyses, and findings of epidemiological research reports and presentations.

PhD Competencies

Upon satisfactory completion of the PhD curriculum with a concentration in Epidemiology, graduates will be able to demonstrate the following competencies.

- Independently identify study questions that will advance scientific knowledge about a topic of public health significance.
- Use appropriate statistical methods, including multivariate models to analyze data from epidemiologic studies using cross-sectional, case-control, or cohort designs.
- Critically review scientific manuscripts and research proposals.
- Independently design and implement studies addressing epidemiologic problems.
- Develop a research proposal that states a study question, presents a scientific and public health rationale for its significance and specifies a detailed methodology for carrying out an epidemiologic study to answer the question.
- Design study management, data collection, and data management protocols.
- Communicate the results orally and in writing in such a way that non-epidemiologically trained practitioners or the general public can understand their applicability.
- Present oral and written reports on such studies.
Appendix. Academic Degree Competencies by Program - 2.11.16

**Health Policy PhD**

- Acquire knowledge of the context of health and health care systems, institutions, actors, and environment.
- Apply or develop theoretical and conceptual models relevant to health policy and services research.
- Pose relevant and important research questions, evaluate them, and formulate solutions to health problems, practice, and policy.
- Use or develop a conceptual model to specify study constructs for a health policy and services research question and develop variables that reliably and validly measure these constructs.
- Describe the strengths and weaknesses of study designs to appropriately address health policy and services research questions.
- Sample and collect primary health and health care data and/or assemble and manage existing data from public and private sources.
- Execute and document procedures that ensure the reproducibility of the science, the responsible use of resources, and the ethical treatment of research subjects.
- Demonstrate proficiency in the appropriate application of analytical techniques to evaluate health policy and services research questions.
- Work collaboratively in teams within disciplines, across disciplines, and/or with stakeholders.
- Effectively communicate the process, findings, and implications of health policy and services research through multiple modalities to scientific peers and other stakeholders.
- Knowledge translation to policy and practice.
Infectious Diseases and Immunity PhD

Students completing the Infectious Diseases and Immunity PhD curriculum should be able to:

- Describe the viral, bacterial, fungal, and parasitological agents of infectious diseases of humans.

- Explain the manifestations of infectious diseases and the biological, molecular, cellular and immunological mechanisms of infection and disease.

- Demonstrate advanced knowledge of molecular biology, microbiology, immunology, biochemistry, and cell biology.

- Identify the local, state, federal and international agencies responsible for infectious disease surveillance and control and explain their roles and missions.

- Conduct classical and molecular laboratory methods.

- Identify current public health problems in communicable diseases and describe how the social, behavioral, environmental and administrative/policy components of public health affect infectious disease distributions.

- Demonstrate use of biostatistics and epidemiology in infectious disease.

- Critically evaluate biological and experimental designs for infectious disease.

- Organize, analyze and present scientific data in a lucid manner through oral and written communications.

- Teach coursework in an area relating to infectious diseases.

- Plan, conduct, and publish original research in the area of infectious diseases and immunity.
Joint Medical Program: MS in Health and Medical Sciences

Students completing the Joint Medical Program should be able to:

- Demonstrate professionalism (respect, compassion, accountability, dependability, and integrity in all actions) and maintain appropriate boundaries in interacting with peers, health professionals, research faculty, research subjects, and staff. Balance autonomy and the need for supervision in research activities.
- Demonstrate sensitivity to aspects of diversity in others and awareness of how cultural beliefs and practices (including one’s own) can influence professional relationships.
- Use information technology and appropriate sources to locate scholarly evidence for conducting research and collecting medical information. Appraise and summarize information located.
- Define research questions and apply scientific evidence and systematic review to answer research questions.
- Apply knowledge of study design and statistical, epidemiologic, or analytic methods to conduct or appraise and disseminate biomedical, social science and population health research. Identify and use appropriate methodological terms in biomedical research, population health, statistical methods, and epidemiology.
- Maintain confidentiality in data collection and storage including adhering to all institutional, regulatory, professional and ethical standards for handling data, including HIPAA protected patient information. Define and manage conflicts of interest in research projects.
- Use statistical and other technological tools to analyze data to answer research questions. Navigate technology systems to enhance one’s own learning.
- Develop and demonstrate academic expertise in one’s area of study, through the ability to synthesize the academic literature, incorporate appropriate research methods and data into scholarly writing, and contextualization of one’s own project within the published literature. Understand the principals of authorship and intellectual property in all presentations, papers, research, and use of references.
- Demonstrate the skills required for research project development and management, including working with faculty and community content experts in one’s area of study, a research mentor and team, and meeting institutional deadlines, including but not limited to IRB deadlines.
- Demonstrate skills required for funding scholarly activities, including completing applications for intramural and/or extramural research funding and completing all requirements of funding sources.
Appendix 12: Research Strengths of the School by Division
Research Strengths of the School of Public Health

**Biostatistics (BIO):** The research program of the Division of BIO is based on a strong backbone of theory in statistical inference for complex data in semi-parametric models. The division is also recognized as one of the leaders in the theory and methods related to causal inference, as well as for its strengths in computational biology, statistical computing, methods for Big Data, and infectious disease modeling. The division collaborates with many other programs on Berkeley campus (e.g., Center for Effective Global Action, Center for Politics of Development, and Berkeley Initiative for Transparency in the Social Sciences Center) and participates in extensive clinical research and intervention planning (e.g., with the Malaria Elimination Initiative) at UCSF. It also provides opportunities for students to engage in domestic and global health research, including in the treatment and prevention of HIV infections and other infectious diseases, neuroscience, acute trauma, environmental exposure and childhood development, and statistical issues in tracking fatalities in war zones.

**Community Health and Human Development (CHDD):** CHHD conducts population- and community-based health research across the life course – from pregnancy through childhood from adolescence to senescence, both locally, domestically, and globally. It conducts observational and experimental field and laboratory studies using both advanced qualitative and quantitative methodologies. The major strength of CHHD is that it goes beyond observational and experimental studies to implement interventions. It is involved in developing community interventions to improve the nutrition and physical activity of young and old, and in reducing alcohol and smoking through education and intervention programs; environmental chemical exposures; unwanted pregnancy; adverse birth outcomes; and infant and maternal morbidity and mortality. These interventions are based on rigorous analysis of the societal and ethical issues at stake in the division’s work. CHHD uses innovative technologies such as eHealth and employing the media to accomplish its ultimate goal: to improve health outcomes across the life course by mobilizing communities, providers, and policymakers to reduce health disparities and address the social determinants that affect health.

**Environmental Health Sciences (EHS):** The major research strengths of the EHS Division are the assessments of a wide variety of environmental exposures – from cellular to global – designed to identify new hazards, quantify risk, and evaluate interventions to reduce exposures. In particular, EHS research focuses on exposures that affect vulnerable populations in underserved communities in the US, low resource settings abroad, and manufacturing and low wage workers. Internationally, EHS is engaged in studies of environmental determinants of parasitic infections in developing countries using mathematical modeling, ecologic theory, and environmental epidemiology to inform sustainable strategies to reduce transmission. Faculty of this division conduct randomized exposure studies of indoor pollution (biomass smoke) in Guatemala and Malawi, as well as observational studies of the relationship between tuberculosis, biomass smoke, and kerosene heating in Nepal and India. One novel area of research is “exposomics,” which examines factors that contribute to chronic human
diseases related to endogenous and exogenous exposures and is based on measurements of biospecimens, using metabolomics, adductomics, and receptor-based biomarkers.

**Epidemiology (EPI):** The EPI Division has particular strength in five areas: social epidemiology / determinants of health and health disparities; the epidemiology of infectious diseases; genetic epidemiology; the effects of environmental chemicals on the health of children; and nutritional epidemiology. Beyond these subject areas, the division has, together with its colleagues in biostatistics, great strength in causal inference methods. In all of these areas, the EPI faculty has well-funded research programs, both in the US and in foreign countries, including large Center grants and projects funded by NIH, the Gates Foundation, CDC, the Paige Family Foundation, and other sources. Many of these projects involve close collaboration with investigators at UCSF, Kaiser-Permanente, and other research organizations and universities in the SF Bay area and internationally, as well as collaborations with faculty in other divisions of the School of Public Health and other departments and schools at UC Berkeley. This collection of research projects and the extramural funds that support it are also an invaluable resource with regard to the research training and mentoring of students, especially masters and doctoral students in epidemiology and related disciplines.

**Health Policy and Management (HPM):** Research in the HPM Division focuses on innovations in the delivery and financing of health care and the social determinants of health. Key areas include: (1) Research on organizational innovations through the Center for Health Organization and Innovation Research (CHOIR), such as Accountable Care Organizations (ACOs) and patient-centered “medical homes;” (2) Research at the Berkeley Center for Health Technology (BCHT) on how regulatory review, insurance design, product pricing, provider payment, and consumer cost sharing can impede innovation or, if re-designed appropriately, foster innovation; (3) Research on effective policy and regulation related to market structure, via the Petris Center; and (4) Evaluation research on health policies and cultural practices that promote population health in developing countries.

**Infectious Diseases and Vaccinology (IDV):** The Division of IDV, together with EHS, forms the public health biology research core for the School of Public Health. Its major strengths are its internationally-recognized basic and translational laboratory-based graduate-level and postdoctoral research programs focused on infectious diseases of global importance: dengue, drug-resistant infections, foodborne diseases, influenza, tuberculosis, and sexually-transmitted infections. It is also a leader in the area of infectious disease molecular epidemiology, whose didactic research model has been exported so far to 5 countries. Recently, the division has begun to apply new knowledge derived from microbiome research to address emerging public health problems engendered from the interaction of infectious diseases with chronic conditions, including obesity, diabetes, chronic kidney disease, cancer, and old age. The IDV division has active collaborative research activities with other divisions of the School as well as other departments on campus that lack laboratory resources, and it has served as a laboratory-based research training center for scholars from more than 15 countries.
Appendix 13: Current Contracts and Grants
## Active Contract and Grant Awards
*(n = 199, total value = $233,098,133)*

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<th>Lead PI</th>
<th>Sponsor</th>
<th>Title</th>
<th>Amount</th>
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<td>UC Davis</td>
<td>The Effect of Water, Sanitation, Hygiene, and Nutrition Interventions During The First Two Years of Life On Anemia and Micronutrient Status</td>
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<td>Aduro Biotech</td>
<td>Proof-of-Concept for a CDN-Adjuvanted NS1-Based Dengue Vaccine Candidate</td>
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<td>Metabolomics based Discovery of Small Molecule Biomarkers for Noninvasive Dengue</td>
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<td>Columbia University</td>
<td>Diagnostic/prognostic Indicators of Severe Dengue Disease and Protection in Mice and Humans</td>
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<td>La Jolla Institute for Allergy and Immunology</td>
<td>Human Immune Signatures of Dengue Virus and Mycobacterium Tuberculosis Exposure in Infection, Disease and Vaccination</td>
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<td>Effect of Nanoviricides on Dengue Virus Infection</td>
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<td>Epidemiology, Transmission, and Phylogenetics of Influenza in a Tropical Country</td>
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<td>Serological Analyses of Clinical Samples from Denvax Vaccine Trials</td>
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<td>UBS Optimus Foundation</td>
<td>Camino Verde: A Randomised Controlled Cluster Trial to Reduce Dengue Risk in Nicaragua through Evidence-Based Community Mobilisation</td>
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<td>Fighting Infections through Research, Science and Technology (FIRST)</td>
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<td>Perinatal Hormonal Biomarkers and Risk of Testicular Germ Cell Tumors</td>
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<td>Role of Fetal Growth in Pediatric Phabdomyosarcoma</td>
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<td>Environmental and Molecular Epidemiology of Childhood Leukemia</td>
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<td>Genetic Susceptibility to Ependymoma and Interaction with Perinatal Risk Factors</td>
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<td>Long-term Effects of Early-Life Arsenic Exposure on Immunity</td>
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<td>International Chemical Exposure Study among Mexican Immigrants</td>
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<td>Global Health Fellows and Scholars Research Training</td>
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<td>Investigation of Ocular Disease and Household Fuels in Kaski District, Nepal</td>
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<td>RCT of BMI Screening: Effects on Obesity, Disparities, and Body Satisfaction</td>
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<td>The Comparative Impact of Patient Activation and Engagement on Improving Patient-Centered Outcomes of Care in Accountable Care Organizations</td>
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<td>The CYGNET Study: Environmental and Genetic Determinants of Maturation</td>
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<td>Early Adversity Shapes Adolescent Risk Behavior Trajectories in Mexican Americans</td>
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<td>New Serological Measures of Infectious Disease Transmission Intensity</td>
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**Pending Contract and Grant Proposals**

*(n = 184, total value = $157,752,827)*

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<tr>
<td>Helmet Use And Head/Neck Injuries: A Three-Dimensional Finite Element Head Model Approach</td>
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<td>Transportation Injury Mapping System (TIMS) Linear Referencing System and Mobile Devices Accessibility Improvements 2016-2017</td>
<td>198,950</td>
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<td>Incorporate Data on Pedestrian and Bicycle Fatalities, Improve Usability and Promote the Updated California Active Transportation Safety Information Pages (CATSIP) Website</td>
<td>97,500</td>
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<td>Review of Switrs Usage by Local Agencies and Pilot Model for Incorporating Switrs modifications in Tims 2015-2016</td>
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<td>City and County of San Francisco Vision Zero Education &amp; Communications Program</td>
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<td>Pasadena, City of Engineering Services for the &quot;Safer Streets&quot; Pasadena Project</td>
<td>73,000</td>
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<td>Holmes, Seth UC San Francisco Race-Based Health Disparities as an Educational Problem for the Health Professions</td>
<td>92,115</td>
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<tr>
<td>Greenwall Foundation Investigate the ethical challenges of providing clinical care in the context of growing social inequalities.</td>
<td>380,237</td>
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<td>Training for Unequal Care: Medical Students, Social Inequality, and Care in America</td>
<td>335,542</td>
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<td>Hubbard, Alan UC Davis UC Consortium for Chemical Exposure and Fibrosis</td>
<td>432,774</td>
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<tr>
<td>UC San Francisco Pragmatic, Randomized Optimal Platelet and Plasma Ratios (PROPR) Amendment 4 to Multicampus Subaward 6844sc &quot;Systems Biology of Coagulation and Trauma-Induced Coagulopathy&quot;</td>
<td>131,555</td>
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<td>&quot;Systems Biology of Coagulation and Trauma-Induced Coagulopathy&quot;</td>
<td>200,002</td>
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<td>Stanley, Sarah NIH National Institutes of Health - Miscellaneous The Role of Lipid Droplets in Immunity to M. Tuberculosis Infection</td>
<td>428,343</td>
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<td>American Asthma Foundation Metabolic Regulation of Macrophage in the Pathogenesis of Asthma</td>
<td>300,000</td>
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<td>Dahl, Ronald E NIH National Institute of Mental Health Applying Gamification Principles for HIV Prevention and Maternal Health in Africa</td>
<td>720,280</td>
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<td>Oxendine, Jeffrey Public Health Institute Activating Multisector Leadership for a Culture of Health</td>
<td>119,319</td>
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<td>Stanford University</td>
<td>Health Careers Opportunity Program</td>
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<td>Van Der Laan, Mark</td>
<td>Bill &amp; Melinda Gates Foundation</td>
<td>HBGDK! Targeted Learning Platform</td>
<td>556,560</td>
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<td>Kaiser Permanente Division of Research</td>
<td>Causal Analyses Of Electronic Health Record Data for Assessing the Comparative Effectiveness of Treatment Regimens</td>
<td>90,360</td>
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<td>Coloma, Josefina</td>
<td>University of Michigan</td>
<td>Dynamics of Dengue Transmission Under Environmental Change: Roads and Urbanicity</td>
<td>618,821</td>
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<td>Hammond, S Katharine</td>
<td>Boston University</td>
<td>mHealth for Parental Smoking Cessation after Emergency Pediatric Care</td>
<td>256,720</td>
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<td>NIH National Institutes of Health - Miscellaneous</td>
<td>Triple Quadrupole GC-MS/MS</td>
<td>174,559</td>
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<td>Pacific Institute for Research &amp; Evaluation</td>
<td>Chemical characterization of three types of e-cigarettes and uses demographics</td>
<td>59,265</td>
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<td>Ozer, Emily</td>
<td>UC San Francisco</td>
<td>Building Community Capacity to Address Violence</td>
<td>433,248</td>
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<td>Spencer Foundation</td>
<td>Enhancing Measurement of Youth Civic Empowerment</td>
<td>47,791</td>
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<td>Robinson, James C</td>
<td>NIH National Institutes of Health - Miscellaneous</td>
<td>The Effects of Insurance Benefit Design Innovations on Patient Health</td>
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<td>Bradshaw, Patrick Terrence</td>
<td>NIH National Cancer Institute</td>
<td>Hypothetical Lifestyle Interventions and Survival among Women with Breast Cancer</td>
<td>385,117</td>
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<td></td>
<td>University of North Carolina at Chapel Hill</td>
<td>Life Stage Targeting to Reduce Overweight- and Obesity-Associated Chronic Disease</td>
<td>87,017</td>
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<td>Noth, Elizabeth</td>
<td>NIH National Institutes of Health - Miscellaneous</td>
<td>Reducing Spatial Uncertainty in Air Pollution Exposures for Preterm Birth</td>
<td>456,580</td>
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<td>Delcroix, Melaine</td>
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<td>Role of monocytes in the maintenance of Mycobacterium tuberculosis-induced granulomas</td>
<td>426,050</td>
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<td>El-Askari, Elaine</td>
<td>UC Los Angeles</td>
<td>Promoting Infectious Disease Knowledge and Preparedness among Key Stakeholders in California</td>
<td>375,000</td>
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<td>Shortell, Stephen M</td>
<td>Dartmouth College</td>
<td>Understanding How Accountable Care Affects Disparities in Patient-Centered Outcomes</td>
<td>90,349</td>
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<td></td>
<td>System-Level Health Services and Policy Research on Health Disparities</td>
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<td>Cornell University</td>
<td>Understanding Healthcare Fragmentation and its Impact on Healthcare Costs</td>
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<td>Rittenhouse, Diane</td>
<td>California Department of Public Health</td>
<td>Accountable Communities for Health: Data and Information Sharing</td>
<td>195,455</td>
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<td>Grembek, Offer</td>
<td>Chen Ryan Associates</td>
<td>California State Bicycle and Pedestrian Plan</td>
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<td>Guidance to Improve Pedestrian and Bicycle Safety at Intersections</td>
<td>80,086</td>
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<td>PricewaterhouseCoopers LLP</td>
<td>Support the Mission and Related Activities of the FHWA’s Office of Safety</td>
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<td>French Institute of Science and Technology for Transport, Development and Networks</td>
<td>TBD</td>
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<td>Sagiv, Sharon</td>
<td>NIH National Institutes of Health - Miscellaneous</td>
<td>Prenatal Exposure to Phthalates and Neurodevelopment in Children</td>
<td>156,874</td>
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<td>Petersen, Maya</td>
<td>UC San Francisco</td>
<td>Simplified Isoniazid Preventive Therapy (SPIRIT) Strategy to Reduce TB Burden</td>
<td>154,449</td>
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<td>Whitehead, Todd</td>
<td>Alex's Lemonade Stand Foundation</td>
<td>Prenatal Stress, Telomere Biology, and Fetal Programming of Childhood Acute Lymphoblastic Leukemia</td>
<td>150,000</td>
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<td>Schwarzman, Megan</td>
<td>EPA Environmental Protection Agency</td>
<td>Greener Solutions: An Interdisciplinary Safer Design Partnership</td>
<td>120,409</td>
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<td>Prata, Ndola</td>
<td>Society of Family Planning</td>
<td>National Census of Ethiopian Midwives: Midwifery Training, Patients’ Rights, and Provision of Abortion and Contraceptive Care Services</td>
<td>120,000</td>
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<td>Dudoit, Sandrine</td>
<td>Simons Foundation</td>
<td>A Novel Strategy to Prioritize Non-coding Regulatory Variants Linked to ASD</td>
<td>102,585</td>
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<td>Castaneda, Xochitl</td>
<td>UC Davis</td>
<td>Occupational Health and Safety Awareness and Education for Latino Immigrants</td>
<td>100,000</td>
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<td>Reingold, Arthur L</td>
<td>NSF National Science Foundation</td>
<td>Conference on Advancing Science for Policy through Interdisciplinary Research in Regulation (ASPIRR)</td>
<td>49,759</td>
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<td>Public Health Foundation Enterprises, Inc.</td>
<td>California Emerging Infections Program (CEIP)</td>
<td>50,044</td>
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<td>Nuru-Jeter, Amani M</td>
<td>UC San Francisco</td>
<td>PROMISE: Participatory Research On Multilevel InterventionS to Eliminate disparities</td>
<td>85,369</td>
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<td>Deardorff, Julianna</td>
<td>Kaiser Permanente Division of Research</td>
<td>Environment, Cytokines, and Breast Cancer Susceptibility across the Lifespan</td>
<td>73,501</td>
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<td>Sensabaugh, George F</td>
<td>University of Vermont</td>
<td>Staphylococcus Chromogenes and Bovine Mastitis: Application of Multilocus Sequence Typing to Identify Clonal Associations with Pathogenicity</td>
<td>61,033</td>
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<td>Name</td>
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<td>Project Description</td>
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<td>Scheffler, Richard</td>
<td>National Institute for Health Care Management Foundation</td>
<td>Impact of Health Plan Concentration: Evidence from Covered California</td>
<td>50,000</td>
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<td>Benjamin R Handel</td>
<td>DHHS Agency for Healthcare Research and Quality</td>
<td>Influence of the Provider-Patient Relationship on Patient Health-Related Behavior and Outcomes</td>
<td>42,750</td>
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<td>Bush, Diane</td>
<td>CPWR- The Center for Construction Research and Training</td>
<td>OSH Education in Post-secondary Career Technical Education (CTE) Construction Programs -- Supplementary Funding for CTE Program Site Visits</td>
<td>30,000</td>
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<td>Catalano, Ralph A</td>
<td>UC Irvine</td>
<td>Parental Job Displacement, Pregnancy Loss, and Birth Outcomes</td>
<td>29,608</td>
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<td>Pies, Cheri A</td>
<td>Kaiser Permanente Division of Research</td>
<td>Best Babies Zone Multi-Sector Advisory Group Meeting</td>
<td>25,700</td>
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<td>Keller, Ann</td>
<td>Dirksen Congressional Center</td>
<td>Partisanship in Support for Federally Supported Science-For-Policy</td>
<td>3,500</td>
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<td>UC Humanities Research Institute</td>
<td>Variable Ethics: The Impact of the Legal and Regulatory Task Environment on Biomedical IRB Performance</td>
<td>20,000</td>
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<td>Stock, Laura</td>
<td>UC San Francisco</td>
<td>Impact of Safe Patient Handling Legislation on MSD Prevention in Nurses</td>
<td>16,003</td>
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<td>Madsen, Kristine</td>
<td>UC Los Angeles</td>
<td>Multilevel Obesity Prevention Intervention in Preschools</td>
<td>15,700</td>
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<td>Garlin, Amy</td>
<td>Association of American Medical Colleges</td>
<td>Structural Competence Realization Project East Bay (SCRPE)</td>
<td>4,798</td>
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Appendix 14: Faculty Bio-Sketches
Name: Barbara Abrams

Position Title(s): Professor of Epidemiology, Maternal & Child Health, and Public Health Nutrition

EDUCATION/TRAINING

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tr>
<td>Simmons College, Boston</td>
<td>BS</td>
<td>1974</td>
<td>Nutrition &amp; Dietetics</td>
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<tr>
<td>UC, Berkeley</td>
<td>MPH</td>
<td>1975</td>
<td>Nutrition</td>
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<td>UC, Berkeley</td>
<td>MS</td>
<td>1983</td>
<td>Epidemiology</td>
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<tr>
<td>UC, Berkeley</td>
<td>DrPH</td>
<td>1985</td>
<td>Nutrition</td>
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Positions
1998-present - UC, Berkeley School of Public Health Epidemiology-Biostatistics MPH Program (Co-chair)
2007-present - UC, Berkeley School of Public Health MPH-MSW Program (Co-chair)
2004-2005 - UC, Berkeley School of Public Health (Associate Dean for Student Affairs)

Current Professional Memberships & Affiliations
American Institute for Nutrition
American Public Health Association
International Society for Developmental Origins of Health
Society for Epidemiologic Research
Society for Pediatric and Perinatal Epidemiology
American College of Obstetrics and Gynecology (educational affiliate)

Recent Honors & Awards
2006 - Elected to Honorary Membership, the Golden Key International Honor Society
2011 - Elected to the Institute of Medicine, National Academy of Sciences

Service
Committee for Reexamination of IOM Pregnancy Weight Guidelines, Board on Children and Families, National Research Council/Institute of Medicine, Washington DC.
External Advisory Committee, Master of Public Health Program, University of Pennsylvania

Recent Publications
Name: Jennifer Ahern

Position Title(s): Associate Professor, Epidemiology Division

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tr>
<td>Brown U. - Providence, RI</td>
<td>BA</td>
<td>1997</td>
<td>Human Biology</td>
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<tr>
<td>UC, Berkeley</td>
<td>MPH</td>
<td>2000</td>
<td>Epidemiology &amp; Biostatistics</td>
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<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>2007</td>
<td>Epidemiology</td>
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Positions
2014-present - UC, Berkeley School of Public Health Associate Professor with tenure

Current Professional Memberships & Affiliations
2001-present - Society for Epidemiologic Research
2000-present - American Public Health Association

Recent Honors & Awards
2013-2015 - UC, Berkeley School of Public Health Committee on Teaching Excellence Honoree
2014-present - UC, Berkeley Chancellor’s Professorship

Service
2008-2014 - School of Public Health MPH Management Committee
2010-2012, 2013-2015 - School of Public Health Faculty Council
2010-2011 - School of Public Health UCB-UCSF Partnership Taskforce
2014-2015 - School of Public Health Strategic Plan, Business and Administration (Co-Chair)
2014-present - School of Public Health Communications Advisory Board
2016-present - UCB Committee for Protection of Human Subjects (CPhS-1) Committee Member

Recent Publications
- **Ahern J**, Worthen M, Masters J, Lippman S, Ozer E, Moos R. The challenges of Afghanistan and Iraq veterans' transition from military to civilian life and approaches to reconnection. PLOS ONE 2015; 10(7); e0128599.
**Name:** Colette Auerswald  
**Position Title(s):** Associate Professor of Clinical Pediatrics

### EDUCATION/TRAINING

<table>
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<th>Institution &amp; Location</th>
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<th>Field of Study</th>
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<tr>
<td>Harvard College, Boston</td>
<td>AB</td>
<td>1985</td>
<td>Social Studies</td>
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<tr>
<td>UC, Berkeley</td>
<td>MS</td>
<td>1989</td>
<td>Health &amp; Medical Sciences</td>
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<tr>
<td>UC, San Francisco</td>
<td>MD</td>
<td>1992</td>
<td>Medicine</td>
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### Positions
- 2006-2009 – Assistant Adjunct Professor, UC-Berkeley School of Public Health
- 2009-2013 – Associate Professor of Clinical Pediatrics, Department of Pediatrics, UCSF
- 2005-present – Director of Masters of Science Program, UCB-UCSF Joint Medical Program, UCB School of Public Health
- 2013-present – UC, Berkeley School of Public Health Associate Professor of Clinical Pediatrics
- 2013-present – UC, San Francisco Department of Pediatrics, Associate Adjunct Professor

### Recent Honors & Awards
- 2010 - Member, Special Emphasis Panel, "Social Networks and Health" (NIH)
- 2011 - Member, Special Emphasis Panel, "Orphans and HIV" (NIH)
- 2012 - Roger Tonkin Visiting Professorship, University of British Columbia Children's Hospital, Vancouver, Canada
- 2012 - U. of British Columbia Children’s Hospital, Vancouver, Canada, Roger Tonkin Visiting Professor
- 2013-2014 – Committee on Teaching Excellence Awards, School of Public Health

### Service
- 2011-present – Member, Awards Committee, Society for Adolescent Medicine and Health
- 2014-present – Member, Nominations Committee, Society for Adolescent Medicine and Health

### Recent Publications
Name: John Balmes
Position Title(s): Professor-in-Residence, Environmental Health Sciences Division

EDUCATION/TRAINING

<table>
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<th>Institution &amp; Location</th>
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<th>Field of Study</th>
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<tr>
<td>U. of Illinois, Urbana</td>
<td>BA</td>
<td>1972</td>
<td>Medicine</td>
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<tr>
<td>CUNY Mt Sinai Med Schl</td>
<td>MD</td>
<td>1976</td>
<td>Pulmonary Medicine</td>
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<tr>
<td>Yale University</td>
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<td>1981</td>
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Positions
1992-present - San Francisco General Hospital Division of Occupational & Environmental Medicine (Chief)
2002-present - Northern California Center for Occupational & Environmental Health (COEH) (Director)
2008-present - California Air Resources Board (Member)
2014-present - UC, Berkeley-UCSF Joint Medical Board (Director)

Current Professional Memberships & Affiliations
- American Thoracic Society
- American College of Occupational and Environmental Medicine
- American College of Chest Physicians
- Society of Occupational and Environmental Health
- European Respiratory Society
- International Society for Environmental Epidemiology
- American Board of Internal Medicine
- Board Certified, Pulmonary Medicine

Recent Honors & Awards
2010 - Rutherford T. Johnstone Award for Significant Contributions to Furthering of Occupational and Environmental Medicine, Western Occupational and Environmental Medicine Association
2012 - Robert M. Zweig Memorial Award for Outstanding Contributions in Air Pollution Health Effects Research, South Coast Air Quality Management District

Service
2009-2010 - Society for Adolescent Medicine and Health (Program Committee)
2010-2011 - Reproductive Health Committee
2011-present - Society for Adolescent Medicine and Health (Awards Committee)

Recent Publications
Name: Lisa Barcellos
Position Title(s): Associate Professor, Epidemiology Division

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
<th>Degree</th>
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<th>Field of Study</th>
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<tr>
<td>CSU, Sacramento</td>
<td>BA</td>
<td>1988</td>
<td>Biological Sciences</td>
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<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1996</td>
<td>Immunology</td>
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<td>MPH</td>
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<td>Epidemiology</td>
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Positions
- 2003-2008 - UC, Berkeley School of Public Health Division of Epidemiology (Assistant Professor)
- 2008-present - UC, Berkeley School of Public Health Division of Epidemiology (Associate Professor)
- Current - Graduate Program in Computational Biology (Faculty Member)
- Current - Joint Medical Program (UC Berkeley-San Francisco) (Faculty Member)
- Current - Graduate Program in Vision Science, School of Optometry (Faculty Member)
- Current - California Institute for Quantitative Biosciences (QB3) (Affiliate Faculty)

Current Professional Memberships & Affiliations
- American Public Health Association
- American Sociological Association
- International Psycho-Oncology Society
- American Society of Preventive Oncology
- Society for Behavioral Medicine Research
- American Society of Human Genetics
- Academy of Management

Recent Honors & Awards
- 2010 - UC, Berkeley Graduate Assembly Faculty Mentoring Award
- 2010-2011 - UC, Berkeley Presidential Chair Teaching Fellowship
- 2013-2014 - Peder Sather Grant for Collaborative Research (Berkeley-Norway)
- 2014-2015 - UC Berkeley Presidential Chair Fellows Curriculum Enrichment Grant Recipient

Service
- 2009-2015 - School of Public Health, Faculty Council
- 2008-2010 - School of Public Health, Gender Equity Task Force
- 2013-present - School of Public Health Committee on Teaching Excellence, Chair
- 2013-present - School of Public Health, Strategic Planning Task Force, Education Strategy Co-Head
- 2014-present - School of Public Health, Educational Policy and Curriculum Committee, Chair
- 2014-present - School of Public Health, Cancer Epidemiology Faculty Search Committee, Chair
- 2014-present - Computational Biology Program, Head Graduate Advisor
- Current - RWJ Foundation, Scholars in Health Policy Research Program (Executive Committee)

Recent Publications
Name: Michael Bates  
Position Title(s): Adjunct Professor, Epidemiology & Environmental Health Sciences Divisions

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<th>Institution &amp; Location</th>
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<th>Field of Study</th>
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<td>U. of Canterbury, N. Zealand</td>
<td>BSc(Hons)</td>
<td>1972</td>
<td>Chemistry</td>
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<td>U. of Surrey, England</td>
<td>MSc</td>
<td>1975</td>
<td>Toxicology</td>
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<td>UC, Berkeley</td>
<td>MPH</td>
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<td>Environ. Health Sciences</td>
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<td>UC, Berkeley</td>
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**Positions**
2003-present – UC Berkeley School of Public Health Epidemiology & EHS Divisions (Adjunct Professor)  
2005-present – UC Berkeley School of Public Health Global & Environment Program (Associate Director)

**Current Professional Memberships & Affiliations**
International Society for Environmental Epidemiology

**Service**
2010-present. Director STEER summer undergraduate research internship program  
2008-present. Director of the Targeted Research Training (TRT) Program, Northern California Education and Research Center.

**Recent Publications**
**Name:** Stefano Bertozzi  
**Position Title(s):** Dean & Professor of Health Policy & Management

### EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<th>Field of Study</th>
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<td>MIT, Cambridge, MA</td>
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<tr>
<td>MIT, Cambridge, MA</td>
<td>PhD</td>
<td>1991</td>
<td>Health Policy &amp; Management</td>
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### Positions
- 2009-present - Instituto Nacional de Salud Pública, Cuernavaca, México (Honorary Research Professor)
- 2009-present - University of Washington, Seattle (Affiliated Professor)
- 2009-2013- Bill & Melinda Gate Foundation (HIV Director & Senior Fellow)
- 2013-present - UC, Berkeley School of Public Health (Dean & Professor of Health Policy & Management)

### Current Professional Memberships & Affiliations
- International AIDS Economics Network
- International Health Economics Association
- American Economics Association

### Recent Honors & Awards
- **Service**
  - 2012-present - Global Health Advisory Board, Duke University
  - 2011-present - Scientific Advisory Board, PEPFAR
  - 2012-present - Council, Office of AIDS Research, NIH
  - 2011-present - Economics Reference Group, World Bank & UNAIDS
  - 2011-present - WHO HIV Advisory Committee
  - 2011-present - Board, Global Fund to Fight AIDS, Malaria and Tuberculosis

### Recent Publications
Name: Joan Bloom
Position Title(s): Professor & Associate Dean for Student Affairs

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>UC, San Francisco</td>
<td>BS</td>
<td>1960</td>
<td>Nursing</td>
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<tr>
<td>UC, San Francisco</td>
<td>MS</td>
<td>1961</td>
<td>Community Health Nursing</td>
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<tr>
<td>Stanford University</td>
<td>MA</td>
<td>1973</td>
<td>Sociology</td>
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<tr>
<td>Stanford University</td>
<td>PhD</td>
<td>1973</td>
<td>Sociology of Education</td>
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Positions
2012-present – Professor of Public Health & Associate Dean for Student Affairs, School of Public Health

Current Professional Memberships & Affiliations
Current - American Public Health Association
Current - American Sociological Association
Current - International Psycho-Oncology Society
Current - American Society of Preventive Oncology
Current - Society for Behavioral Medicine Research
Current - Academy of Management
2010-present - RWJ Foundation, Scholars in Health Policy Research Program (Executive Committee)

Recent Honors & Awards
2007 – UC, Berkeley School of Public Health Alfred W. Childs Distinguished Services for Faculty Award
2008 - UC, Berkeley School of Public Health Zak Sabry Mentorship Award
2008 - UC, Berkeley SPH Golden Apple Award for Excellence in DrPH Student Mentorship
2009 - Joanne Horning You Can Make a Difference Award, Susan G. Komen for the Cure, SF Bay Area
2010 - Kaiser Permanente Endowed Chair for Health Policy and Management
2016- Fellow, American Psycho-Oncology Society

Service
Inception-present - Editorial Board, Journal of Cancer Survivorship (Editorial Board)
1991-present - International Journal of Psycho-Oncology (Editorial Board)
2004-present - SPH PhD Group Degree in Health Policy (Chair)
2012-present Ad Hoc Member of NIH/CSR & NCI Grant Review (2-3 per year) (prior to that member of study section)
Current - UC, Berkeley Committee for Protection of Human Subjects (back-up)
2012-current Associate Dean of Student Affairs, School of Public Health
2012-current Co-Director Doctor of Public Health Program.

Recent Publications (among 158Prof)
- Shirazi M, Bloom JR, Shirazi A, Popal, R Bloom, JR. Afghan Immigrant Women's Knowledge and Behaviors around Breast Cancer Screening, Psycho-Oncology, 22(8)2013. PMCID.
Asa Bradman

Position Title(s)
Associate Researcher, Division of Epidemiology; Adjunct Associate Professor, Environmental Health Sciences

EDUCATION/TRAINING

<table>
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<tr>
<td>UC Berkeley</td>
<td>BSc</td>
<td>1984</td>
<td>Conservation and Resource Studies</td>
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<tr>
<td>UC Berkeley</td>
<td>MSc</td>
<td>1989</td>
<td>Energy and Resources</td>
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<td>UC Berkeley</td>
<td>PhD</td>
<td>1997</td>
<td>Environmental Health Sciences</td>
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Positions
2015-present – UC Berkeley School of Public Health, Environmental Health Sciences (Associate Adj. Professor)
1998-present – UC Berkeley School of Public Health, Center for Environmental Research and Children’s Health (CERCH) (Associate Director)
1994-1997 – California Department of Health Services Emeryville, Childhood Lead Poisoning Prevention Branch (Research Scientist II)

Current Professional Memberships & Affiliations
2006-present – Scientific Advisory Council, National Center for Healthy Homes
2007-present – Chair, Scientific Guidance Panel, CA Biomonitoring (appointed by Govs. Schwazenegger and Brown)

Recent Honors & Awards
2012 – IPM Innovators Award, Ca. Department of Pesticide Regulation
2008 – US EPA Children’s Environmental Health Excellence Award, with US EPA NERL
2006 – Switzer Leadership Grant Mentor, 2005-2006, Switzer Foundation, San Francisco, CA
2001 – Center project honored by Chancellor Berdahl award for Community/ University Partnership, UC Berkeley

Service
Co-founder and Associate Director for Exposure, Center for Environmental Research and Children’s Health (CERCH) at UC Berkeley
Director, CERCH Exposure Assessment Study
Co-Director, CHAMACOS Laboratory Core

Recent Publications
**Name**  
Patrick T. Bradshaw  

**Position Title(s)**  
Assistant Professor

---

**EDUCATION/TRAINING**

<table>
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<th>Institution &amp; Location</th>
<th>Degree</th>
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<tbody>
<tr>
<td>Florida State University, Tallahassee, FL</td>
<td>B.A.</td>
<td>12/93</td>
<td>Economics</td>
</tr>
<tr>
<td>Florida State University, Tallahassee, FL</td>
<td>M.S.</td>
<td>12/96</td>
<td>Economics</td>
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<tr>
<td>University of Florida, Gainesville, FL</td>
<td>M.S. in Stat.</td>
<td>12/01</td>
<td>Statistics</td>
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<tr>
<td>University of North Carolina, Chapel Hill, NC</td>
<td>Ph.D.</td>
<td>07/09</td>
<td>Epidemiology</td>
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<tr>
<td>University of North Carolina, Chapel Hill, NC</td>
<td>Postdoc</td>
<td>11/11</td>
<td>Epidemiology</td>
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**Positions**

2001-2004  Instructor/Research Associate/Biostatistician; Department of Pediatrics; University of Texas Health Science Center at San Antonio; San Antonio, TX

2006-2010  Research Assistant; Lineberger Comprehensive Cancer Center; University of North Carolina at Chapel Hill (UNC-CH); Chapel Hill, NC

2009-2011  Postdoctoral Fellow; Department of Epidemiology; UNC-CH; Chapel Hill, NC

2011-2015  Assistant Professor; Department of Nutrition; UNC-CH; Chapel Hill, NC

2015-present  Assistant Professor; Division of Epidemiology; School of Public Health; The University of California, Berkeley; Berkeley, CA

**Current Professional Memberships & Affiliations**

- Society for Epidemiologic Research

**Recent Honors & Awards**

- 2005-2009  NIH Predoctoral Trainee, Diet and Cancer Training Grant/Cancer Epidemiology Training Grant
- 2009-2010  NIH Postdoctoral Fellow, Cardiovascular Disease Epidemiology Training Grant
- 2010-2011  Susan G. Komen for the Cure Postdoctoral Fellowship.
- 2011-2015  Marilyn Gentry Fellowship, American Institute for Cancer Research

**Service**

- 2015-present  Member, Educational Policy & Curriculum Committee, School of Public Health; The University of California, Berkeley

**Recent Publications**

Name: Timothy T. Brown  
Position Title(s): Adjunct Associate Professor of Health Economics

EDUCATION/TRAINING

<table>
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<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tr>
<td>CSU, Hayward</td>
<td>BS</td>
<td>1987</td>
<td>Business Administration</td>
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<tr>
<td>CSU, Hayward</td>
<td>MA</td>
<td>1991</td>
<td>Economics</td>
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<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1999</td>
<td>Hlth. Services &amp; Policy Anal.</td>
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Positions
- 2014 – Present  Associate Director for Research, Berkeley Center for Health Technology; Associate Adjunct Professor of Health Economics, School of Public Health, University of California, Berkeley.
- 2011 – 2014  Associate Director for Research, Berkeley Center for Health Technology; Assistant Adjunct Professor of Health Economics, School of Public Health, University of California, Berkeley.
- 2008 – 2011 Associate Director for Research and Train, Nicholas C. Petris Center on Health Care Markets and Consumer Welfare; Assistant Adjunct Professor of Health Economics, School of Public Health, University of California, Berkeley.
- 2007 – 2008 Associate Director for Research and Training, Nicholas C. Petris Center on Health Care Markets and Consumer Welfare, School of Public Health, University of California, Berkeley.
- 2004 – 2007 Associate Director for Research, Nicholas C. Petris Center on Health Care Markets and Consumer Welfare, School of Public Health, University of California, Berkeley.
- 2003 – 2004  Senior Researcher and Acting Director, Nicholas C. Petris Center on Health Care Markets and Consumer Welfare, School of Public Health, University of California, Berkeley.

Current Professional Memberships & Affiliations
- AcademyHealth

Recent Honors & Awards
- Spring 2014, 2015 - School of Public Health Award for Teaching Excellence

Service
- 2012-2014, 2016 UC Berkeley School of Public Health, Health Policy & Management Admissions Committee
- 2012-present UC Berkeley School of Public Health Undergraduate Management Committee

Selected Recent Publications (of 42 publications)
Name: Gertrude Case Buehring
Position Title(s): Professor of Virology, Infectious Diseases & Immunity

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<tr>
<td>Stanford University</td>
<td>BA</td>
<td>1962</td>
<td>Biology</td>
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<tr>
<td>Doctors Hospital</td>
<td>CLS License</td>
<td>1964</td>
<td>Clinical Laboratory Science</td>
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<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1972</td>
<td>Genetics</td>
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Positions
1973-present - UC, Berkeley School of Public Health (Assistant to now Full Professor)
2010-2013 - University of California, Berkeley School of Public Health (Associate Dean for Academic Affairs)

Current Professional Memberships & Affiliations
American Association for Cancer Research
American Society for Microbiology
Society for In Vitro Biology

Recent Honors & Awards
2011-2013 – Distinguished Lecturer, American Society for Microbiology
2015 – Zak Sabry Mentorship Award, School of Public Health
2015 – Lifetime Achievement Award, Society for In Vitro Biology

Recent Service
2013-16 - Academic Personnel Advisory Committee, School of Public Health

2009-10 Chair, UC Berkeley Committee for Laboratory and Environmental Biosafety

2009-16 Executive Committee, Graduate Group in Endocrinology

2015-16 Campus Academic Personnel Office: ad hoc committee to review Coordinator of Public Programs appointments and promotions

Selected Recent Publications
Name: Ralph Catalano

Position Title(s):
Professor of Public Health

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<tr>
<td>Boston College</td>
<td>BA</td>
<td>1968</td>
<td>Political Science</td>
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<tr>
<td>Syracuse University</td>
<td>MRP</td>
<td>1970</td>
<td>Regional Planning</td>
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<tr>
<td>Syracuse University</td>
<td>PhD</td>
<td>1972</td>
<td>Social Science</td>
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Positions
1989-present - UC, Berkeley School of Public Health (Professor of Public Health)
2004-present - UC Berkeley Robert Wood Johnson Health & Society Scholars Program (Director)
2013-2014 - UC Berkeley, School of Public Health (Executive Associate Dean)

Current Professional Memberships & Affiliations
2006 – 2008 - National Institutes of Health - Mental Health Services Research Grant Review Committee

Service
2002- 2008 - Board of Regents, Samuel Merritt College

Recent Publications
Name: John Colford

Position Title(s):
Professor of Epidemiology

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<tr>
<td>Santa Clara U.</td>
<td>BS</td>
<td>1981</td>
<td>Chemistry</td>
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<tr>
<td>Johns Hopkins U.</td>
<td>MD</td>
<td>1985</td>
<td>Medicine</td>
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<td>UC, Berkeley</td>
<td>MPH</td>
<td>1992</td>
<td>Epidemiology</td>
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<td>UC, Berkeley</td>
<td>PhD</td>
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Positions
2007-present - UC, Berkeley School of Public Health (Professor of Epidemiology)

Current Professional Memberships & Affiliations
American Medical Association
American Epidemiological Association

Recent Honors & Awards
2006 – UC, Berkeley School of Public Health Zak Sabry Mentoring Award

Service
2005-2011 - US Environmental Protection Agency Science Advisory Board
2010-present - World Bank External Proposal Reviewer

Recent Publications
NAME
Ronald E. Dahl, M.D.

POSITION TITLE
Professor, Community Health & Human Development
School of Public Health

EDUCATION/TRAINING

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<th>INSTITUTION AND LOCATION</th>
<th>DEGREE</th>
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<th>FIELD OF STUDY</th>
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<tr>
<td>Pennsylvania State University, University Park, PA</td>
<td>B.S.</td>
<td>5/79</td>
<td>Biophysics</td>
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<tr>
<td>Pennsylvania State University, University Park, PA</td>
<td>B.A.</td>
<td>5/79</td>
<td>Liberal Arts</td>
</tr>
<tr>
<td>University of Pittsburgh, Pittsburgh, PA</td>
<td>M.D.</td>
<td>5/84</td>
<td>Medicine</td>
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<tr>
<td>University of Pittsburgh, Pittsburgh, PA</td>
<td></td>
<td>5/84</td>
<td>Neuroendocrinology Research</td>
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<tr>
<td>Duke University, Durham, NC</td>
<td></td>
<td>6/87</td>
<td>Pediatrics (Residency)</td>
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B. Positions and Honors
1987 – 2010 Assistant/Associate/Professor of Psychiatry, Pediatrics, & Psychology University of Pittsburgh, PA
2010 – Professor, Community Health and Human Development and Joint Medical Program, University of California,
Berkeley, Berkeley, CA
2012 – Director, Institute for Human Development, University of California, Berkeley, Berkeley, CA
2001 – Fellow, American Academy of Pediatrics
2002 – Fellow, American Academy of Sleep Medicine
2004 – 2010 Staunton Professorship (Endowed Chair) University of Pittsburgh
2005 – Fellow of the Academy, New York Academy of Sciences
2011 – Fellow, Association for Psychological Science
2011 – Founding Editor, Developmental Cognitive Neuroscience
2015 – 2017 President, Society for Research on Child Development (SRCD)

C. Full List of Published Work:
http://scholar.google.com/citations?hl=en&user=zfCmRZkAAAAJ&view_op=list_works&sortby=pubdate

D. Current Research Support
P50 MH096889: 6/17/2013 - 4/30/2018
Fragmented Early Life Environmental and Emotional/Cognitive Vulnerabilities
Cultural Beliefs and Practices Impacting Teenage Sleep
R01MH099007: 8/12/2013-6/30/2018
Pubertal Maturation and Motivational Influences on Frontolimbic Systems
R01DA035300: 2/15/2014-1/31/2019
Early Adversity Shapes Adolescent Risk Behavior Trajectories in Mexican Americans
MCHB UA6MC27378: 09/01/14 – 08/31/17
Advancing Transdisciplinary Developmental Research on Adolescent Health

E. Service (UC, Berkeley)
2011-2013 UC, Berkeley School of Public Health Research Committee (Chair)
2011-present UC Berkeley School of Public Health Interdisciplinary MPH Faculty Advisory Group (Member)
2011-2014 UC Berkeley Behavior Change Research Network (Co-Organizer)
2001-2014 Psychology & Education Program Committee (building planning with Vice-Provost Koshland)
2011-present UC, Berkeley Affective Science Training Committee (Member)
2012-present Greater Good Science Center Faculty Board (Member) & Fellowship Review Committee (Member)
2014-present UC, Berkeley School of Public Health Student Activities Committee (Co-Chair)
2012-present Director, Institute of Human Development (ORU) UC Berkeley
Name: Julianna Deardorff
Position Title(s): Associate Professor, Community Health & Human Development

EDUCATION/TRAINING

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<tr>
<td>UC, Los Angeles</td>
<td>BA</td>
<td>1992</td>
<td>English Literature</td>
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<tr>
<td>Arizona State U., Tempe</td>
<td>MA</td>
<td>2000</td>
<td>Clinical Psychology</td>
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<tr>
<td>Arizona State U., Tempe</td>
<td>PhD</td>
<td>2004</td>
<td>Clinical Psychology</td>
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Positions
2014-present - UC, Berkeley School of Public Health Associate Professor with tenure

Current Professional Memberships & Affiliations
Current - California Board of Psychology (License # PSY 21519)

Recent Honors & Awards
2009-2011 - UC, Berkeley King Sweesy & Robert Womack Endowed Chair in Medical Research & Public Health
2010-present - UCB-UCSF Robert Wood Johnson Health and Society Scholars program Faculty Affiliate
2012-2013 - UC, Berkeley Hellman Family Faculty Fund Award
2013 - Community Breast Cancer Research Award, Zero Breast Cancer, San Rafael, CA.
2014-present - Bixby Global Reproductive Health Center Faculty Affiliate

Service
2009-2010 - CA Dept PH, KaiserDivision of Research, Zero Breast Cancer, Dissemination of Individual Biomarker Results to Community (Team Member)
2012-present - UC, Berkeley McNair Scholars program (Mentor)
2012-present - UC, Berkeley SPH n-campus/Online Professional MPH Program Admission Committee (Member)
2014-present - UC, Berkeley SPH Communications Advisory Board (Member)
2014-present - UC, Berkeley SPH Health DrPH Program (Ad hoc Admissions Review)
2013-present - UC, Berkeley SPH Committee on Teaching Excellence (Member)
2014-2016 - Faculty Advisory Committee (FAC), School of Public Health (Elected Member)

Recent Publications
Name: William H. Dow  
Position Title(s): Henry J. Kaiser Professor of Health Economics

EDUCATION/TRAINING

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<tr>
<td>Cornell U., Ithaca, NY</td>
<td>BA</td>
<td>1991</td>
<td>Economics</td>
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<td>Yale U., New Haven, CT</td>
<td>MA</td>
<td>1992</td>
<td>Economics</td>
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<tr>
<td>Yale U., New Haven, CT</td>
<td>PhD</td>
<td>1995</td>
<td>Economics</td>
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Positions
2005-2006 - Council of Economic Advisers, The White House (Senior Economist)  
2010-present - UC, Berkeley, School of Public Health (Professor)  
2014-2015 - UC Berkeley School of Public Health (Associate Dean for Research)

Current Professional Memberships & Affiliations
Research Associate, National Bureau of Economic Research

Recent Honors & Awards
2008-present - Henry J. Kaiser Endowed Professorship

Service
2005-present - Berkeley Population Center (Associate Director)  
2006-2012 - UC, Berkeley SPH Health Services & Policy Analysis (HSPA) PhD program (Chair)  
2009-2013 - John Muir Health System, Physician Network Board of Directors (Member)  
2012-2014 - UC, Berkeley, SPH Health Policy and Management Division (Head)  
2013-present - Director, UC-Berkeley Center on the Economics and Demography of Aging

Recent Publications
Name: Sandrine Dudoit

Position Title(s):
Professor, SPH Division of Biostatistics & Department of Statistics

EDUCATION/TRAINING

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<tr>
<td>Carleton U Ottawa, Canada</td>
<td>BS</td>
<td>1992</td>
<td>Mathematics</td>
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<tr>
<td>Carleton U Ottawa, Canada</td>
<td>MS</td>
<td>1994</td>
<td>Mathematics</td>
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<td>UC, Berkeley</td>
<td>PhD</td>
<td>1999</td>
<td>Statistics</td>
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Positions
2010-present - UC, Berkeley SPHS Biostatistics Division (Professor)
2010-present - UC, Berkeley Department of Statistics (Professor)

Current Professional Memberships & Affiliations
Institute of Mathematical Statistics
International Biometric Society Western North America Region
American Statistical Association

Recent Honors & Awards
2014 - Elected Member, International Statistical Institute
2014 - Thomson Reuters Highly Cited Researcher
2014 - UC Berkeley School of Public Health Committee on Teaching Excellence Teaching Award
2010 - Fellow, American Statistical Association

Service
2006-present - Annals of Applied Statistics (Associate Editor)
2006-present – Biology Direct (Associate Editor)
2010-present - UC, Berkeley Graduate Council (Member)
2011-present - UC, Berkeley Graduate Council Administrative Committee (Member)
2012-2013 - UC, Berkeley Computational Biology Initiative Faculty Search Committee (Member)
2012-2014 - UC, Berkeley Department of Statistics Development & Alumni Relations Committee (Member)
2013 - UC, Berkeley School of Public Health Biostatistics Faculty Search Committee (Chair)
2014-present - UC, Berkeley Department of Statistics Academic Personnel Committee (Member)

Recent Publications
Name: Ellen Eisen

Position Title(s): Adjunct Professor & Head of Environmental Health Sciences Division

**EDUCATION/TRAINING**

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<tr>
<td>U. of Michigan, Ann Arbor</td>
<td>BS</td>
<td>1971</td>
<td>Mathematics</td>
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<tr>
<td>Harvard U., Cambridge, MA</td>
<td>MS</td>
<td>1978</td>
<td>Biostatistics</td>
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<tr>
<td>Harvard U., Cambridge, MA</td>
<td>DSc</td>
<td>1982</td>
<td>Biostats &amp; Occupational Hlth</td>
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**Positions**

2007-present - UC Berkeley School of Public Environmental Health Sciences Division (Adjunct Professor)

2014-present - UC Berkeley School of Public Environmental Health Sciences Division (Division Head)

**Current Professional Memberships & Affiliations**

- International Commission on Occupational Health
- Society for Epidemiologic Research

**Recent Honors & Awards**

- 2010- City of Shanghai for accomplishment on chronic reduction of pulmonary function (Received Certificate)
- 2010 - Keystone, Colorado. NIOSH conference on Nanomaterials and Worker Health (Invited Speaker)
- 2013 - UC, Berkeley Environmental Health Science Symposium (Invited Speaker)
- 2014 - International Symposium on Epidemiology in Occupational Health, Chicago IL (Invited Keynote Speaker)

**Service**

- 2012-2015 - Institute of Medicine, National Academy of Science Committee on Aerospace Medicine & Medicine of Extreme Environment
- 2013 - International Agency for Research on Cancer (IARC), Advisory Group
- 2014-2015 - Institute of Medicine, National Academy of Science Committee on Gulf War and Health
- 2015-present – Editorial Board, American Journal of Epidemiology

**Recent Publications**

- Costello S, Picciotto S, Rehkoph D, **Eisen EA**. Racial and Gender Differences in the Risk of ischemic Heart Disease and the Healthy Worker Survivor Effect among Autoworkers. Oec Environ Med 2014 (In Press).
BIOGRAPHICAL SKETCH

NAME: Brenda Eskenazi

INSTITUTION AND LOCATION | DEGREE | Completion Date | FIELD OF STUDY
--- | --- | --- | ---
Queens College, City University of New York | BA | 1971 | Psychology
Queens College, City University of New York | MA | 1974 | Psychology
Graduate School and University Center, City University of New York | PhD | 1979 | Neuropsychology
Yale University, School of Public Health | Post-Doc | 1981 | Epidemiology/Toxicology

Professional Experience
- 1983-1984 Assistant Professor in Environmental Health, Yale School of Medicine
- 1984-1986 Assistant Professor in Maternal and Child Health and Epidemiology, SPH, UC Berkeley
- 1986-1989 Acting Asst. Professor in Maternal and Child Health/Epidemiology, SPH, UC Berkeley
- 1989-1995 Associate Professor in Maternal and Child Health and Epidemiology, SPH, UC Berkeley
- 1997-2000 Chair, Maternal and Child Health, SPH, UC Berkeley
- 1994-present Member, Graduate Group in Environmental Health Sciences, SPH, UC Berkeley
- 1995-present Professor in Maternal and Child Health, and in Epidemiology, SPH, UC Berkeley
- 1998-present Director, Center for Environmental Research and Children’s Health, UC Berkeley
- 2012-present Chair, Division of Community Health and Human Development, UC Berkeley

Honors
- 1995 Fogarty Senior International Fellowship
- 1996 Fellow, American College of Epidemiology
- 2008 Jennifer and Brian Maxwell Endowed Chair
- 2012 John R. Goldsmith Award, International Society for Environmental Epidemiology, Lifetime Achievement
- 2014 Inducted into Collegium Ramazzini for top 150 people in the world in Occupational and Environmental Health.

C. Contributions to Science

Complete List of Published Work in MyBibliography:
Name: Lia Fernald  
Position Title(s): Professor, Community Health & Human Development

EDUCATION/TRAINING

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<th>Field of Study</th>
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<tr>
<td>Swarthmore College, PA</td>
<td>BA</td>
<td>1994</td>
<td>Biological Anthropology</td>
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<tr>
<td>U.C. Berkeley (Haas)</td>
<td>MBA</td>
<td>2000</td>
<td>Health Care Management</td>
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Positions
2005-2009 - UC, Berkeley SPH Community Health & Human Development (Assistant Professor)
2009-2014 - UC, Berkeley SPH Community Health & Human Development (Associate Professor)
2014-present - UC, Berkeley SPH Community Health & Human Development (Professor)
2015-present – UC, Berkeley SPH Associate Dean for Research

Current Professional Memberships & Affiliations
American Public Health Association, American Society of Nutritional Sciences, New York Academy of Sciences, Society for International Nutrition Research, Society for Research in Child Development

Recent Honors & Awards
2006-2008 Martin Sisters’ Endowed Chair, University of California, Berkeley
2009 Young Investigator’s Research Award, Association of Schools of Public Health

Service
2008-2012 Journal of Community Health (Editorial Board)
2010-2014 Public Health Nutrition (Associate Editor)
2010-present National Institutes of Health (NIH) Reviewer
2010-present International Child Health and Nutrition Knowledge Network
2011-present Steering Committee, Global Child Development Group

Recent Publications (of 75 total peer-reviewed publications)
Name: Darlene D. Francis

Position Title(s): Associate Professor, SPH-Community Health & Human Development & Helen Wills Neuroscience Institute

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>Carleton University, Ottawa, CANADA</td>
<td>BS</td>
<td>1992</td>
<td>Biology &amp; Psychology</td>
</tr>
<tr>
<td>McGill University, Montreal, CANADA</td>
<td>PhD</td>
<td>2000</td>
<td>Neurological Sciences</td>
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Positions

- **2000-2003** Postdoctoral Fellow; Center for Behavioral Neuroscience (CBN), Emory University, Atlanta, Georgia
- **2003-2004** Research Associate; Neuroscience Division, Yerkes Research Center, Emory University, Atlanta, Georgia
- **2005-2012** Assistant Professor; UC Berkeley, School of Public Health & Helen Wills Neuroscience Institute, Berkeley, California
- **2012-Present** Associate Professor; UC Berkeley, School of Public Health & Helen Wills Neuroscience Institute, Berkeley, California

Recent Publications

- Beery, AK and Francis, DD (2011) Adaptive significance of natural variations in maternal care in rats: a translational perspective. Journal: *Neuroscience and Biobehavioral Reviews* 35(7); 1552-61
Name: Brent D. Fulton
Position Title(s): Assistant Adjunct Professor of Health Economics & Policy

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>UC, Los Angeles</td>
<td>MBA</td>
<td>1997</td>
<td>Strategy &amp; Finance</td>
</tr>
<tr>
<td>Pardee RAND Grad. School</td>
<td>PhD</td>
<td>2006</td>
<td>Public Policy Analysis</td>
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**Positions**
2011-present - UC, Berkeley School of Public Health (Assistant Adjunct Professor of Health Economics & Policy)
2011-present - Nicholas C. Petris Center on Health Care Markets and Consumer Welfare and Global Center for Health Economics and Policy Research (Associate Director)
2009-2014 - UC, Berkeley School of Public Health (Assistant Research Economist)
2006-2009 - UC, Berkeley School of Public Health (Health Services Researcher)

**Recent Honors & Awards**
Spring, 2014, 2015 - UC, Berkeley School of Public Health Award for Teaching Excellence

**Service**
2012-present - UC, Berkeley School of Public Health Undergraduate Management Committee (Member)
2013-present - Faculty Task Force, California Health Benefits Review Program (Member)

**Recent Publications**
- Karaca-Mandic P, **Fulton BD**, Hollingshead A, Scheffler RM. States with stronger health insurance rate review authority experienced lower premiums in the individual market in 2010-13. *Health Affairs* 34(8); 2015: 1358-1367.
- **Fulton BD**, Scheffler RM, Hinshaw SP. State variation in increased ADHD prevalence: links to NCLB school accountability and state medication laws. *Psychiatric Services* 66(10); 2015: 1074-1082.
Name: Sylvia Guendelman

Position Title(s): Professor, Community Health & Human Development and Maternal & Child Health

EDUCATION/TRAINING

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tr>
<td>CSU, Hayward</td>
<td>BA</td>
<td>1971</td>
<td>Sociology</td>
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<tr>
<td>UC, Berkeley</td>
<td>MSW</td>
<td>1974</td>
<td>Social Welfare</td>
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<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1979</td>
<td>Social Welfare</td>
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Positions
2004-present - UC, Berkeley School of Public Health (Professor in CHHD & Maternal & Child Health)
2000-present - UC, Berkeley School of Public Health Maternal & Child Health Program (Chair)

Current Professional Memberships & Affiliations
American Public Health Association
Association of Teachers of Maternal and Child Health

Recent Honors & Awards
2004 - Rockefeller Resident Scholar, Bellagio, Italy
2000-2007 - World Health Organization’s Regional Panel on Reproductive Health for the Americas (Chair)

Service
1995-present - Maternal and Child Health Journal (Editorial Board Member)
2000-2014 - UC Berkeley School of Public Health MPH Management Committee (Member)
2004-present - UC Berkeley School of Public Health CHHD Division Steering Committee (Member)
2006-2007 - UC Berkeley School of Public Health Faculty Council (Chair)
2006-2009 - UC Berkeley Chancellor’s Advisory Committee on Student Mental Health (Member)
2010-present - California Health Benefits Review Program (Task Force Member)
2010 and 2015– Inter-conceptual Care Council Project, ACOG District IX, California (Member)
2010 - Huckleberry Youth Programs Wellness Academy (Advisory Board Member)

Recent Publications
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<th>Institution &amp; Location</th>
<th>Degree (if applicable)</th>
<th>Year</th>
<th>Field of Study</th>
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<tr>
<td>Yale U., New Haven, CT</td>
<td>BA</td>
<td>1982</td>
<td>Philosophy</td>
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<tr>
<td>Yale U., New Haven, CT</td>
<td>MD/MA</td>
<td>1989</td>
<td>NIH MSTP</td>
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<td>Yale U., New Haven, CT</td>
<td>PhD</td>
<td>1994</td>
<td>Philosophy</td>
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<tr>
<td>UCLA Medical Center/VA Medical Center</td>
<td>Intern Psychiatry</td>
<td>1990</td>
<td>Medicine</td>
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<tr>
<td>UCLA Neuropsychiatric Institute, Resident, Psychiatry</td>
<td>Fellowship</td>
<td>1990-93</td>
<td>Psychiatry</td>
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**Positions**
- 2013-present- UC, Berkeley School of Public Health UCB/UCSF Joint Medical Program (Professor of Bioethics & Med. Humanities)
- 2006-2013 - UC, Berkeley School of Public Health UCB/UCSF Joint Medical Program (Associate Professor of Bioethics & Med. Humanities)

**Recent Honors & Awards**
- 2011- Outstanding Mentor of the Year, UCB-UCSF Joint Medical Program
- 2010 - UC, Berkeley SPH Golden Apple Award—Outstanding Teacher of the Year, DrPH Program
- 2009 - University of Chicago “Six Leading Thinkers on Empathy, with Jean Decety, Frans De Waal, Allan Young, Sue Carter, Nancy Eisenberg

**Recent Service**
- 2012-2013 - San Francisco Federal Reserve Community Development Division (Visiting Scholar)
- 2012 - UC Berkeley Center for Child and Youth Policy, UC Berkeley (Advisory Board Member)
- 2012 - University of Chicago, Wisdom Research Grant (Invited Consultant)
- 2010-2011- ASPH Global Health Competency Workgroup (Member)
- 2003-present - *Journal of Clinical Ethics* (Editorial Board)

**Recent Publications**
- Halpern, J., Jutte, D., Colby, J. and Boyce, W.T. “Social Dominance, School Bullying and Child Health: What are our Ethical Obligations to the Very Young?” *Pediatrics, Special Section on Pediatric Ethics*. April 2014.
**Name:**  
Katharine Hammond  
**Position Title(s):**  
Professor of Public Health

**EDUCATION/TRAINING**

<table>
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<th>Institution &amp; Location</th>
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<tr>
<td>Oberlin College, Ohio</td>
<td>BA</td>
<td>1971</td>
<td>Chemistry</td>
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<tr>
<td>Brandeis U., MA</td>
<td>PhD</td>
<td>1976</td>
<td>Chemistry</td>
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<tr>
<td>Harvard SPH</td>
<td>MS</td>
<td>1981</td>
<td>Environmental Health Sciences</td>
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**Positions**

1994-present - UC, Berkeley School of Public Health Environmental Health Sciences Division (Professor)  
2013-present - UC, Berkeley Industrial Hygiene Program (Director)  
2006-2012 - UC, Berkeley School of Public Health Environmental Health Sciences Division (Chair)

**Current Professional Memberships & Affiliations**

- American Industrial Hygiene Association  
- American Conference of Governmental Industrial Hygienists  
- American Public Health Association  
- International Society of Exposure Science  
- International Society for Environmental Epidemiology  
- American Chemical Society

**Recent Honors & Awards**

2008 - Dr. William Cahan Distinguished Professor Award, Flight Attendants Medical Research Institute  
2008 - Henry F. Smyth Award, Academy of Industrial Hygiene, American Industrial Hygiene Association

**Service**

2011- present – UCB SPH Environmental Health Sciences Graduate Group (Equity & Inclusion Advisor)  
2012 – present - Journal of Environmental Science and Environmental Epidemiology (Associate Editor)  
2013-present - UCB Tobacco-Free Berkeley Committee (Member)  
2013-present - CA Tobacco-Related Disease Research Program Thirdhand Smoke Consortium (Advisory Board)  
2014-present – UCB Coordinator of Public Programs Committee (Chair)  
2014-present – UCB SPH Environmental Health Sciences Division Search Committee (Member)  
2014-present – UCB SPH Faculty Council (Member)  
2014- Nat’l. Toxicology Program, Peer Review Panel for Report on Carcinogens Monograph on Trichloroethylene  
2014-present - Exposome and Mixtures Working Group for Children’s Environmental Health Centers (Co-Chair)

**Recent Publications**

Name: Eva Harris
Position Title(s): Professor, Infectious Diseases & Vaccinology

EDUCATION/TRAINING

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<tr>
<td>Harvard U., Cambridge</td>
<td>BA</td>
<td>1987</td>
<td>Biochemical Sciences</td>
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<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1993</td>
<td>Molecular &amp; Cell Biology</td>
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Positions
1998-present - UC, Berkeley School of Public Health Infectious Diseases & Vaccinology Division (Professor)
2007-present - UC, Berkeley School of Public Health Center for Global Public Health (Director)

Current Professional Memberships & Affiliations
American Society for Microbiology
American Society of Tropical Medicine and Hygiene
American Society for Virology
American Society of Tropical Medicine and Hygiene (Councilor, Member)

Recent Honors & Awards
2012 - Global Citizen Award, United Nations Association, East Bay Chapter

Service
2010-present - UC Berkeley Facilitating International Research Task Force (Member)
2010-present - UC Global Health Institute Board of Directors (Member)
2012 - NIH Transformative R01 Study Section (Editor)
2012-2014 - Novartis Institute of Tropical Diseases (Scientific Advisory Board)
2013-present - Panamerican Dengue Research Network (President, Scientific Committee)
2013-present - NIH CRFS Study Section (Standing Member)
2013-present - NIH Models of Infectious Disease Agent Study (MIDAS – Steering Committee)
2014-2015 - Scientific Advisory Board, Sanofi Pasteur (Member)
2014 - NIH NIAID Council, NIH (Ad hoc Member)
2014-present - Scientific Advisory Board, SMART Infectious Diseases Program (Member)

Recent Publications
Name
Denise Herd

Position Title(s)
Associate Professor of Behavioral Sciences

EDUCATION/TRAINING

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<tr>
<td>UC Berkeley</td>
<td>BA</td>
<td>1972</td>
<td>Anthropology</td>
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<tr>
<td>SF State University</td>
<td>MA</td>
<td>1978</td>
<td>Anthropology</td>
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<tr>
<td>UC San Francisco</td>
<td>PhD</td>
<td>1985</td>
<td>Medical Anthropology</td>
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Positions
1993 - present – UC Berkeley School of Public Health (Associate Professor)
2005-2009 – UC Berkeley School of Public Health (Associate Dean of Students)
2002-2005 – UC Berkeley School of Public Health (Associate Dean of Public Health Practice)
1987-1993 – UC Berkeley School of Public Health (Assistant Professor)
1981-1987 – Medical Research Institute of San Francisco (Research Analyst)

Current Professional Memberships & Affiliations
2013-present – Chair Search Committee, Diversity and Health Disparities
2012-present – Member, Epidemiology, Prevention, and Behavior Research Review Subcommittee, National Institute on Alcohol Abuse and Alcoholism
2011-present – UC Berkeley Equity and Inclusion Advisory Board Member
2011-present – DrPH Management Committee

Recent Honors & Awards
2014 – Leon Henkin Citation for Distinguished Service
2014 – Teaching Excellence Award, School of Public Health
2013 – Teaching Excellence Award, School of Public Health

Service
Alcohol and Drug Study Group
American Anthropological Association
Kettil Bruun Society for Epidemiological and Social Study of Alcohol
Society for the Study of Social Problems

Recent Publications
- **Herd, D.** and Berman, J. Mobilizing for Change, Activism and Alcohol Policy Issues in Inner City Communities, Social Movement Studies, 2014, August.
Name: Nina Holland
Position Title(s): Adjunct Professor, Environmental Health Sciences

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<tr>
<td>Novosibirsk U., Russia</td>
<td>MS</td>
<td>1972</td>
<td>Biology</td>
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<tr>
<td>Acad. of Sciences, Ukraine</td>
<td>PhD</td>
<td>1977</td>
<td>Genetics</td>
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Positions
1995-present - UC, Berkeley School of Public Environment Health Sciences Division (Adjunct Professor)
2003-present – Children’s Environmental Health Laboratory (Director)
2003-present - UC, Berkeley School of Public Health Biorepository (Director)

Current Professional Memberships & Affiliations
Environmental Mutagens and Genomics Society
American Society of Human Genetics
Genetic and Environmental Toxicology Association of Northern California (GETA)
Society of Toxicology
American Public Health Association
Epigenomics Society

Service
1997-present - International Project on Micronucleus Studies in Humans (HUMN) Committee (Board Member)
2001-present - UC, Berkeley Committee for Regents & Chancellors Scholarship (Member)
2003-2008 - UC, Berkeley Committee on Environmental Health and Safety (Member)
2008-present - UC, Berkeley Committee for Protection of Human Subjects (Member)
2005-present - NIH study sections and special panels (Reviewer)
2005-present – EHS Admissions Committee (Member)
2013-present- Pregnancy and Childhood Epigenetics (PACE) International Consortium (Member)

Teaching
1994-current - PH256, Molecular&Genetic Epidemiology and Public Health
2005-2009 - Reproductive Toxicology of Industrial Chemicals
2002-present – EHS doctoral and master seminars

Recent Publications


Name: Seth M. Holmes
Position Title(s): Associate Professor, Public Health & Medical Anthropology

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<th>Field of Study</th>
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<tr>
<td>U. of Washington, Seattle</td>
<td>BS</td>
<td>1997</td>
<td>Ecology &amp; Spanish</td>
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<tr>
<td>UCSF &amp; UC, Berkeley</td>
<td>PhD</td>
<td>2006</td>
<td>Medical Anthropology</td>
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<tr>
<td>UCSF</td>
<td>MD</td>
<td>2007</td>
<td>Medicine</td>
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<tr>
<td>Univ of Pennsylvania</td>
<td></td>
<td>2009</td>
<td>Internal Medicine Residency</td>
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Positions
2009-2011 – Columbia University, Robert Wood Johnson Health & Society Scholar
2010-2011- Harvard University, Department of Global Health and Social Medicine, Teaching Fellow
2011-2015 - UC, Berkeley School of Public Health Martin Sisters Endowed Chair (Assistant Professor)
2015-present – UC, Berkeley School of Public Health and Program in Medical Anthropology (Associate Professor)
2012-present - UC, Berkeley Center for Social Medicine (Founding Chair)
2012-present - UCB-UCSF PhD/MD Track in Medical Anthropology (Co-Director)

Current Professional Memberships & Affiliations
American Anthropological Association
Society for Medical Anthropology
Society for the Humanities and Social Sciences and Medicine
National Physicians Alliance
American Physician Scientist Association
American Public Health Association

Recent Honors & Awards
2013 - New Millennium Book Award, Society for Medical Anthropology
2013 - Anthropology of Work Book Award, Society for the Anthropology of Work
2014 - Margaret Mead Award, American Anthropological Association and Society for Applied Anthropology
2014 - Humanist Sociology Book Award, Association for Humanist Sociology
2014 - Out for Sustainability Award, Out for Sustainability Summit
2015 – James M. Blaut Award, Cultural and Political Ecology Specialty Group, Assn. of American Geographers

Service
2014-present - UC, Berkeley, School of Public Health Student Affairs Committee (Member)
2013-present - UC, Berkeley School of Public Committee on Qualitative Methods (Chair)
2012-present – Haas Institute for a Fair and Inclusive Society, Health Disparities and Diversity Cluster (Member)
2011-present - UC Berkeley School of Public Health Committee on Multicultural Opportunities (Member)
2012-present - UC Berkeley School of Public Health HSB MPH Admissions Committee (Member)
2013-present - UC Berkeley Medical Anthropology PhD Program Admissions Committee (Member)
2013-2014 – UC Berkeley Health Disparities & Diversity Faculty Search Committee (Member)
2012-2013 - UC Berkeley Health Disparities & Diversity Faculty Search Committee (Member)

Recent Publications
Name: Alan Hubbard  
Position Title(s): Professor and Head of Biostatistics

EDUCATION/TRAINING

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<th>Field of Study</th>
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<tr>
<td>UC, Santa Barbara</td>
<td>BA</td>
<td>1985</td>
<td>Geology</td>
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<tr>
<td>Virginia Polytechnic U.</td>
<td>MS</td>
<td>1990</td>
<td>Geology &amp; Paleontology</td>
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<td>UC, Berkeley</td>
<td>PhD</td>
<td>1998</td>
<td>Biostatistics</td>
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Positions
2006-present - UC, Berkeley School of Public Health Biostatistics Division (Professor)

Current Professional Memberships & Affiliations
American Statistical Association

Service
Current – Head of Division of Biostatistics
2013-14 - UC, Berkeley SPH CITRIS Big Ideas Competition: Information Technology for Society (Judge)
Current - International Journal of Biostatists (Editor-in-Chief)
Current - Statistical Applications in Genetics and Molecular Biology (Associate Editor)
Current - PLOSOne (Associate Editor)

Recent Publications
Name: Susan L. Ivey
Position Title(s): Adjunct Professor, UCB/UCSF Joint Medical Program

EDUCATION/TRAINING

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<th>Field of Study</th>
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<tr>
<td>USC</td>
<td>BA</td>
<td>1975</td>
<td>Psychology</td>
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<tr>
<td>Univ California, Irvine</td>
<td>BS/BA</td>
<td>1975</td>
<td>Biol. Sciences/Chemistry</td>
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<tr>
<td>St. Georges U., Grenada</td>
<td>MD</td>
<td>1981</td>
<td>Medicine</td>
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<tr>
<td>University of CT, Farmington</td>
<td>PGY1-3</td>
<td>1984</td>
<td>Int Med/Family Med</td>
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<tr>
<td>George Washington U, D.C.</td>
<td>MHSA</td>
<td>1995</td>
<td>Health Policy/Health Services</td>
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<tr>
<td>Univ California, Berkeley</td>
<td>Post-doctoral fellow</td>
<td>1997</td>
<td>Research</td>
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Positions
Current - UC, Berkeley School of Public Health and UCB/UCSF Joint Medical Program (Full Professor, Adjunct)
Current - UC, Berkeley School of Public Health and UCB/UCSF Joint Medical Program (Associate Director, Master’s Curriculum for JMP medical students)
Current - UC, Berkeley SPH, Health Research for Action Center (HRA) (Director of Research)

Current Professional Memberships & Affiliations
American Medical Women's Association
American Academy of Family Physicians
Commission to End Health Care Disparities

Recent Honors & Awards
2011-2013 - Gelfand Lecture scholar, Phi Delta Epsilon pre-medical fraternity, UC Berkeley Iota chapter
2014 - UC Berkeley School of Public Health Award for Teaching Excellence, Spring 2014
2015 - UC Berkeley School of Public Health Award for Teaching Excellence, Fall 2014
2015 - UC Berkeley School of Public Health Award for Teaching Excellence, Spring 2015

Service
2009 - Global Medical Brigades (Volunteer Physician, Honduras)
2011-2013 - Vietnam Tooth Project (Volunteer Physician and lead researcher, Vietnam)

Recent Publications (in reverse chronologic order)
Name: William Jagust
Position Title(s): Professor of Public Health & Neuroscience and Associate Dean for Academic Affairs

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<tr>
<td>Reed Coll., Portland, OR</td>
<td>BA</td>
<td>1974</td>
<td>Psychology</td>
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<tr>
<td>SUNY, Stony Brook</td>
<td>MD</td>
<td>1978</td>
<td>Medicine</td>
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Positions
2004-present - UC, Berkeley School of Public Health (Professor of Public Health & Neuroscience)
2006-present - UCSF Department of Neurology (Adjunct Professor)
2014-present – UC Berkeley School of Public Health (Associate Dean for Academic Affairs)

Current Professional Memberships & Affiliations
Society for Neuroscience
American Academy of Neurology
American Neurological Association

Recent Honors & Awards
2013 - Potamkin Prize for Research in Pick’s Alzheimer’s and Related Disorders

Current Service
Helen Wills Neuroscience Institute (Executive Committee)
Bay Area Alzheimer’s Association (Scientific Advisory Board)
Alzheimer’s Association (Neuroimaging Work Group)
Committee for the Protection of Human Subjects, UC Berkeley
Academic Personnel Committee, UC Berkeley School of Public Health

Recent Publications
Name: Nicholas P. Jewell
Position Title(s): Professor of Biostatistics and Statistics

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<th>Year</th>
<th>Field of Study</th>
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<tr>
<td>U. of Edinburgh, Scotland</td>
<td>BSc (Hons)</td>
<td>1973</td>
<td>Applied Mathematics</td>
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<tr>
<td>U. of Edinburgh, Scotland</td>
<td>PhD</td>
<td>1976</td>
<td>Mathematics</td>
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Positions
1979-1981 – Princeton University, Assistant Professor, Department of Statistics
1981-present - UC Berkeley, School of Public Health Biostatistics Division & Department of Statistics
1994-2000 – UC Berkeley, Vice Provost, Office of the Chancellor
2007-2008 – University of California, Vice Provost for Academic Personnel, Office of the President
2010-2013 - UC Berkeley Faculty Club Board (President)

Current Professional Memberships & Affiliations
American Association for the Advancement of Science, Fellow; President (Section U) 2014-2017
Institute of Mathematical Statistics, Fellow
American Statistical Association, Fellow; President, Section on Statistics in Epidemiology, 2009-2012
Biometric Society, President, Western North American Region, 1990-1992

Recent Honors & Awards
2012 - Harvard University, Marvin Zelen Leadership Award in Statistical Science
2013- UC, Berkeley Faculty Senate Award for Outstanding Service to the Berkeley Campus
2013- Centers for Disease Control & Prevention, Statistical Science Award & Keynote Speaker
2014 - 3rd Joint Biostatistical Symposium, Chengdu, China - Keynote Speaker

Recent Service
2007-2010 - Ohio State, Mathematical Biosciences Institute (Board of Scientific Governors)
2010-2012 - NIEHS National Toxicology Program (Board of Scientific Counselors)
2011-2014 - UC Berkeley School of Public Health Biostatistics Division (Chair)
2013-present - Human Rights Data Analysis Group [HRDAG] (Science Committee)

Recent Publications
Name: Ann Keller  
Position Title(s): Associate Professor of Health Policy & Management

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<tr>
<td>Indiana University</td>
<td>BA</td>
<td>1991</td>
<td>Mathematics &amp; Political Science</td>
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<tr>
<td>UC, Berkeley</td>
<td>MA</td>
<td>1993</td>
<td>Political Science</td>
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<td>UC, Berkeley</td>
<td>PhD</td>
<td>2001</td>
<td>Political Science</td>
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Positions
2011-present - UC, Berkeley SPH Health Policy & Management Division (Associate Professor)

Current Professional Memberships & Affiliations
American Political Science Association

Recent Honors & Awards
2006-2008 - UC, Berkeley School Public Health Martin Sisters Endowed Chair
2011- American Political Science Association Science, Technology & Environmental Politics Section: Science in Environmental Policy: The Politics of Objective Advice given the Don K. Price Award for the Best Book in Science and Technology Politics published in the last three years.

Service
2012-present - UC, Berkeley SPH Health Services & Policy Analysis PhD Program (Director)
2012-present – UCB/UCSF RWJ Scholars in Health Policy Research Program (Associate Director)
2012-present - UCB SPH/Goldman School for PP Joint MPP/MPH Program (SPH Director)
Current - UC, Berkeley Energy & Resource Group (Faculty Affiliate)
Current - UCB/UCSF/UCD Center for Occupational & Environmental Health (Member)

Recent Publications
Name: Amy Kyle
Position Title(s): Associate Research Professor Environmental Health Sciences

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
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<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>Harvard College, Cambridge</td>
<td>BA</td>
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<td>UC, Berkeley</td>
<td>PhD</td>
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<td>Environ. Health Sciences</td>
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Positions
2009-present - UC, Berkeley SPH Environmental Health Sciences Division (Associate Research Professor)
2004-present - UC, Berkeley SPH Environmental Health Sciences Division (Associate Research Scientist)

Current Professional Memberships & Affiliations
International Society for Environmental Epidemiology
American Public Health Association

Recent Honors & Awards
2013 - California Safe Schools, LA Pearl August Humanitarian (For service to community groups seeking environmental justice and protecting children in California)

Service
2011-2013 - Western Collaborative Group on Children’s Environmental Health (Organizer)
2012 - Reviewed & commented on proposed rules on cumulative impacts developed by State of New York
2013 - With Environmental Law Clinic at Golden Gate University, conducted review of current research on impacts of manganese in drinking water for impacted community
2014-present - National Children’s Collaborative Working Group on Engagement, Translation, Outreach, Communication, & Communities (Chair)

Recent Publications
• Jason Su, Rachel Morello-Frosch, Bill M. Jesdale, Amy D. Kyle, Michael Jerrett. 2009. An index for assessing demographic inequalities in cumulative environmental hazards with application to Los Angeles, California. Environmental Science and Technology 43(20):7626-34. PMID: 19921871
• Rachel Morello-Frosch, Miriam Zuk, Michael Jerrett, Bhavna Shamasunder, Amy D Kyle. 2011. Understanding the cumulative impacts of inequalities in environmental health: implications for policy. Health Affairs (Millwood) 30: 8790.
**Name:** Barbara Laraia  
**Position Title(s):** Associate Professor, Community Health & Human Development

### EDUCATION/TRAINING

<table>
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<th>Institution &amp; Location</th>
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<tr>
<td>U. of Illinois</td>
<td>BS</td>
<td>1984</td>
<td>Hospital Dietetics</td>
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<tr>
<td>U. N Carolina, Chapel</td>
<td>MPH</td>
<td>1994</td>
<td>Nutrition</td>
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<tr>
<td>Hill</td>
<td>PhD</td>
<td>1999</td>
<td>Nutrition</td>
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### Positions
- 2011-present - UC, Berkeley SPH Community Health & Human Development (Associate Professor)
- 2011-present - UC, Berkeley School of Public Health Public Health Nutrition Program (Chair)

### Current Professional Memberships & Affiliations
- American Public Health Association
- American Society for Nutrition Sciences
- Population Association of American Society for Epidemiologic Research

### Recent Honors & Awards
- Delta Omega — The Honorary Public Health Society

### Service
- 2006-2011 - Journal of Nutrition Education and Behavior (Board of Editors)
- 2012 - IOM Committee on the Examination of the Adequacy of Food Resources and SNAP Allotments (Member)

### Recent Publications
Name
Lexin Li

Position Title(s)
Associate Professor of Biostatistics

EDUCATION/TRAINING

<table>
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<tr>
<td>Zhejiang University, China</td>
<td>BS</td>
<td>06/1998</td>
<td>Electrical Engineering</td>
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<tr>
<td>University of Minnesota, Twin Cities, MN</td>
<td>MS</td>
<td>06/2002</td>
<td>Statistics</td>
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<tr>
<td>University of Minnesota, Twin Cities, MN</td>
<td>Ph.D</td>
<td>06/2003</td>
<td>Statistics</td>
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<td>University of California, Davis, CA</td>
<td>Postdoctoral</td>
<td>06/2005</td>
<td>Bioinformatics</td>
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Positions
2005-2011 - Assistant Professor, Department of Statistics, North Carolina State University, Raleigh, NC
2011-2014 - Associate Professor, Department of Statistics, North Carolina State University, Raleigh, NC
2014-present - Associate Professor, Division of Biostatistics, University of California, Berkeley, CA

Current Professional Memberships & Affiliations
American Statistical Association

Recent Honors & Awards

Service
2014-present - Associate Editor, Journal of the American Statistical Association
2013-present – Associate Editor, Technometrics

Recent Publications
Name: Fenyong Liu

Position Title(s):
Professor, Infectious Diseases and Vaccinology

EDUCATION/TRAINING

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<tr>
<td>U. Science &amp; Tech.,</td>
<td>BS</td>
<td>1986</td>
<td>Biology</td>
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<td>China</td>
<td>MS</td>
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<td>Biochemistry &amp; Mol. Biology</td>
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<td>U. of Chicago</td>
<td>PhD</td>
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<td>Biochemistry &amp; Mol. Biology</td>
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<td>U. of Chicago</td>
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Positions
2005-present - UC, Berkeley SPH Infectious Diseases & Vaccinology Division (Professor)

Current Professional Memberships & Affiliations
American Association for the Advancement of Science
RNA Society
American Society of Microbiology

Recent Honors & Awards
2007 - Nanjing University, College of Life Sciences (Visiting Distinguished Professor)

Current Service
2004-present - UC Berkeley School of Public Health Research Committee (Member)
2006-present – UC Berkeley Graduate Program in Comparative Biochemistry (Chair)
2007-present - Governance Council, Chinese Society for Virology (Member)
2009-present - UC Berkeley Animal Care & Use Committee [ACUC] (Alternate Member)
2009-present - Journal of Biomedicine and Biotechnology (Editor)
2010-present - Virologica Sinica, China (Editor)
2010-2013 - UC Berkeley Committee on Laboratory & Environmental Safety (Member)
2012 - 9th International Cytomegalovirus Workshop, San Francisco Organizing Committee (Member)
2012-2014 - UC Berkeley School of Public Health Faculty Council (Member)
2012-present – UC Berkeley Acad Senate Com. on Undergrad Scholarships, Honors, & Financial Aid (Member)

Recent Publications
Name: Kimberly MacPherson
Position Title(s): Program Director, Health Policy and Management
Lecturer, Health Policy and Management

EDUCATION/TRAINING

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<tr>
<td>UC, Davis</td>
<td>BA</td>
<td>1988</td>
<td>Psych &amp; Organization Studies</td>
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<td>UC, Berkeley</td>
<td>MPH</td>
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<td>Health Policy &amp; Management</td>
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<td>UC, Berkeley</td>
<td>MBA</td>
<td>1994</td>
<td>Business Administration</td>
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Positions

2006-present - UC, Berkeley SPH Health Policy & Management Division (Program Director & Lecturer) Oversee management of all of the core HPM master’s programs and teaches 3 required courses per year

2008-present – UC Berkeley SPH-Berkeley Center for Health Technology (Co-Director) Oversee management of BCHT, a research and educational center focused in biomedical innovation and the intersection with the other sectors of health care (e.g. finance, delivery). Core member of research team

2013-present - UC, Berkeley Haas School of Business Health Management Program (Associate Director & Lecturer) - manages all aspects of the program management such as student recruitment and admissions, curricular planning, student advising (academic and career), corporate fundraising, and alumni relations. The Associate Director also formulates program strategies, and directs and controls program budget and other related resources. Teaches 2 MBA elective courses a year.

Teaching

- PH227A – Health Care Finance (Spring 2009-10, Fall 2011, Spring 13, Spring 15, Fall 2015)
- PH 223D Foundations of Health Policy & Management (Fall 2006 – 2012, Fall 2014, Fall 2016)
- PH 223E Capstone Seminar in Health Policy & Management (Spring 2007-2016)
- PH223F Effective Public Health Negotiations (Spring 2008-2012, 2014)
- PH297 Field Placement (MBA/MPH students; 2007-2016)
- PH299 Independent Study (Spring 2008 – Spring 2016)
- MBA 296.15 – Trends in Biotech and Pharma (Spring 2015)
- MBA 296.12 – Commercializing Biotech (Spring 2016)
- MBA 297A – Healthcare in the 21st Century (as of Fall 2016)

Current Professional Memberships & Affiliations

Healthcare Financial Management Association (HFMA)

Service

2012-present – St. Francis Memorial Hospital, San Francisco (member Board of Trustees)
2014-present – Marina Middle School (San Francisco) School Site Council (voting member)
2015-present – Planned Parenthood of N CA Innovation and Technology Advisory Board (Founding member)

Recent Publications

- Payers Test Reference Pricing and Centers of Excellence to Steer Patients to Low-Price and High-Quality Providers. James Robinson and Kim MacPherson; Health Affairs; September 2012
Name: Kristine Madsen

Position Title(s): Associate Professor, Community Health & Human Development

EDUCATION/TRAINING

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<td>UC, Berkeley</td>
<td>BA</td>
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<td>U. of Indiana</td>
<td>MD</td>
<td>2000</td>
<td>Medicine</td>
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<td>U. of Indiana</td>
<td>MPH</td>
<td>2000</td>
<td>Epidemiology</td>
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Positions
2015-present - UC, Berkeley SPH Community Health & Human Development (Associate Professor)
2012-2015 - UC, Berkeley SPH Community Health & Human Development (Assistant Professor)
2006-present – UC, San Francisco Department of Pediatrics (Assistant Adjunct Professor)

Current Professional Memberships & Affiliations
American Academy of Pediatrics (Fellow)
Academic Pediatric Association [formerly Ambulatory Pediatric Association] (Member)
Physicians for Social Responsibility (Member)
Society for Pediatric Research [elected by peer-review] (Invited Member)

Recent Honors & Awards
2012-present - King Sweesy and Robert Womack Endowed Chair in Medical Research and Public Health
2013 - American J. of Prev. Medicine, Childhood Obesity Challenge: 1st prize Active Healthy Families Program

Service
2012 - present - School of Public Health Research Committee (Member)
2012 - Child Obesity Conference Research Track Workgroup (Member)
2012 - AHRQ Report on Comparative Effectiveness of Obesity Treatments (Reviewer)
2012 - American Association for Health Physical Education Recreation & Dance Plenary Committee (Member)
2012 - present - California Safe Routes to School Evaluation Advisory Committee (Member)
2013 – CA Legislature Budget & Finance Comm. (discussing tax on sugar-sweetened beverages (Expert Witness)
2013 - UC, Berkeley SPH DrPH and PH Nutrition MPH Programs (Applicant Reviewer)

Recent Publications
• Thompson HR, Madsen KA. Are Physical Education policies working? A snapshot from an urban school district. *Preventing Chronic Disease*. (In press)
Name
John Marshall

Position Title(s)
Assistant Professor in Residence

EDUCATION/TRAINING

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<td>University of Auckland, New Zealand</td>
<td>BSc</td>
<td>11/99</td>
<td>Biological sciences</td>
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<td>University of Auckland, New Zealand</td>
<td>BTech (Hons)</td>
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<td>Optoelectronics</td>
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<td>University of California, Los Angeles</td>
<td>MS</td>
<td>05/05</td>
<td>Biomathematics</td>
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<td>University of California, Los Angeles</td>
<td>PhD</td>
<td>05/08</td>
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Positions
2008 – UC Los Angeles, based at Malaria Research and Training Center, Mali (Postdoctoral researcher)
2009 – UC Los Angeles, Center for Society & Genetics (Postdoctoral fellow)
2009-2010 – California Institute of Technology, Division of Biology (Postdoctoral scholar)
2010-2012 – Imperial College London, School of Public Health (Research associate)
2012-2014 – Imperial College London, School of Public Health (Medical Research Council research fellow)
2015-present – UC Berkeley, School of Public Health (Assistant Professor of Biostatistics & Epidemiology)

Current Professional Memberships & Affiliations
American Society of Tropical Medicine & Hygiene

Recent Honors & Awards
2012-2015 – Medical Research Council, UK Population Health Scientist Fellowship

Service
Expert advisor for US National Academy of Sciences

Recent Publications
*Equal contribution
Name: Sandra McCoy  
Position Title(s): Assistant Adjunct Professor of Epidemiology

EDUCATION/TRAINING

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<tr>
<td>UC, Berkeley</td>
<td>BA</td>
<td>1999</td>
<td>Molecular &amp; Cell Biology</td>
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<td>U. of Michigan, Ann Arbor</td>
<td>MPH</td>
<td>2002</td>
<td>Epidemiology</td>
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<td>U. of N. Carolina Chapel Hill</td>
<td>PhD</td>
<td>2008</td>
<td>Epidemiology</td>
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Positions
- 2011-present - UC Berkeley SPH Epidemiology Division (Assistant Adjunct Professor)
- 2011-present - Pangaea Global AIDS Foundation Advisory Board (Member)
- 2012-present - UC Berkeley Center for Effective Global Action [CEGA] (Member)

Current Professional Memberships & Affiliations
- International AIDS Society
- International Society for Infectious Diseases
- California Public Health Association - North
- Society for Epidemiologic Research

Recent Honors & Awards
- 2015 Recipient, Instructional Improvement Grant, UC Berkeley, 2015
- 2014 School of Public Health Award for Teaching Excellence Spring 2014
- 2014 Global Health Equity Scholars Junior Faculty Fellow, UC Berkeley
- 2013 Institute of International Studies Junior Faculty Fellowship, UC Berkeley
- 2012 National Institutes of Health Loan Repayment Program: Health Disparities Research

Service
- 2013 - PEPFAR Impact Evaluation Workshop, Harare, Zimbabwe (Faculty)
- 2014 - PEPFAR Impact Evaluation Workshop, Dar es Salaam, Tanzania (Faculty)
- 2015 - Organizing Committee & Presenter, “Overcoming Health Disparities in the Bay Area: focus on HIV and HCV,” San Francisco, CA

Recent Publications
1. Singer AW, Weiser SD, McCoy SI. Does Food Insecurity Undermine Adherence to Antiretroviral Therapy? A Systematic Review. *In Press. AIDS & Behavior. PMID: 25096896*
Name: Catherine Metayer

Position Title(s): Associate Adjunct Professor of Epidemiology and Associate Researcher

EDUCATION/TRAINING

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<tr>
<td>U. of Bordeaux, France</td>
<td>BS</td>
<td>1981</td>
<td>Mathematics</td>
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<tr>
<td>U. of Bordeaux, France</td>
<td>MD</td>
<td>1991</td>
<td>Primary Care Medicine</td>
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<td>Tulane U., New Orleans, LA</td>
<td>PhD</td>
<td>1996</td>
<td>Epidemiology</td>
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Positions

2010-present: Associate Adjunct Professor, UC, Berkeley SPH Epidemiology Division
2013-present: Director (Principal Investigator) and Project Leader, Center for Integrative Research on Childhood Leukemia and the Environment, UC, Berkeley SPH
2013-present: Chair, the Childhood Leukemia International Consortium, UC, Berkeley SPH
2009-present: Principal Investigator & co-Investigator, the Childhood Cancer Record Linkage Project, UC, Berkeley SPH
2009-2013: Co-Director & co-Investigator at the Center for Integrative Research on Childhood Leukemia and the Environment
2003-2013: Co-Director, the California Childhood Leukemia Study
1997-2003: Visiting Associate Scientist /Consultant, National Cancer Institute, Division of cancer Epidemiology and Genetics, Bethesda, MD

Current Professional Memberships & Affiliations: Ordre National des Médecins (National Society of Physicians), France; International Society for Environmental Epidemiology; and International Epidemiology Association

Recent Honors & Awards: University of California Berkeley Recognition and Reward Program Award, 2004

Service: Elected Member of the Teaching and Research Advisory Council (TRAC); Ad-hoc reviewer for scientific journals, professional conferences, and the National Cancer Institute

Recent Publications (selected out of ~100 publications)


Name: Meredith Minkler

Position Title(s): Professor Emerita (recalled) Health and Social Behavior
Professor in the Graduate Group, UC Berkeley

EDUCATION/TRAINING

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<tr>
<td>UC, Berkeley</td>
<td>BA</td>
<td>1968</td>
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<td>UC, Berkeley</td>
<td>MPH</td>
<td>1970</td>
<td>PH Education &amp; Family Plan.</td>
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<td>UC, Berkeley</td>
<td>DrPH</td>
<td>1975</td>
<td>Community Health Education</td>
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Positions
1996-2014 - UC, Berkeley SPH CHHD Division (Professor of Health & Social Behavior)
2008-2012 - UC, Berkeley SPH CHHD Division Health & Social Behavior Program (Director)
2003-2006 - UC, Berkeley School of Public Health DrPH Program (Director)

Current Professional Memberships & Affiliations
Fulbright Specialist
WHO consultant (refining and testing model for community-engaged response to infection prevention and control)
Senior Research Consultant, PolicyLink
Member, American Public Health Association, SOPHE, Assoc. for Social Admin and Community Organization
Editorial Board, Journal of Community Practice; Progress in Community Health Partnerships

Recent Honors & Awards
2013 - Tisch Award for Civic Engagement in Research
2013 – Outstanding Mentor Award, Society for Public Health Education
2012 - Singer Award for Community Leadership, LifeLong Medical Care
2010 - Paul Harris Fellowship, Rotary International, Northern California
2010 - Chancellor’s Award for Research in the Public Interest
2010 - Godfrey M. Hochbaum Distinguished Lecture, U. North Carolina, Chapel Hill

Service
1998-2012 - UC, Berkeley Academic Geriatric Resource Program (Executive Committee)
Current - Center for Collaborative Research for an Equitable California (Governing Board)
Current – Community engagement/pipeline program for Richmond students re. Berkeley Global Campus
Current – Advisory Committee, Labor Occupational Health Program
Current - Faculty Network for Community-based Participatory Research

Recent Publications

Name: Rachel Morello-Frosch
Position Title(s): Professor, School of Public Health and Department of Environmental Science, Policy & Management

EDUCATION/TRAINING

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<td>UC, Berkeley</td>
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<td>UC, Berkeley</td>
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<td>UC, Berkeley</td>
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<td>Environmental Health Sciences</td>
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Positions
2012-present - UC, Berkeley ESPM Society & Environment Division and SPH CHHD Division (Professor)
2010-2013 - UC, Berkeley School of Public Health DrPH Program (Director)

Current Professional Memberships & Affiliations
American Public Health Association
International Society for Environmental Epidemiology
American Association for the Advancement of Science

Recent Honors & Awards
2010 - American Public Health Association Damu Smith Environmental Health Achievement Award
2012 - UC, Berkeley Chancellor’s Award for Research in Public Service

Current Service
UC Berkeley, ESPM, Society and Environment Division, (Chair)
UC, Berkeley Energy and Resources Group (Faculty Affiliate)
UC Berkeley SPH Environmental Health Sciences Graduate Group (Faculty Affiliate)
UC, Berkeley Academic Senate American Cultures Curriculum Review Committee (Member)
UC, Berkeley Department of Environmental Science, Policy & Management (Equity Officer)
Breast Cancer Action (www.bcaction.org), San Francisco, CA (Scientific Advisory Board)
Breast Cancer Fund, San Francisco, CA (Scientific Advisory Panel)
Grist, (Board Chair)
Environmental Health Perspectives (Editorial Review Board)
Environmental Health (Editorial Review Board)

Recent Publications
Name: Mahasin Mujahid
Position Title(s): Assistant Professor of Epidemiology

EDUCATION/TRAINING

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<tr>
<td>Xavier University</td>
<td>BS</td>
<td>2000</td>
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<td>University of Michigan</td>
<td>MS</td>
<td>2003</td>
<td>Biostatistics</td>
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<tr>
<td>University of Michigan</td>
<td>PhD</td>
<td>2007</td>
<td>Epidemiologic Sciences</td>
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Positions
2009-present Assistant Professor, UC Berkeley School of Public Health, Epidemiology Division
2007-2009 Robert Wood Johnson Foundation Heath and Society Scholar Harvard University, School of Public Health
2003-2007 Research Assistant, Center for Social Epidemiology and Population Health, University of Michigan
2003-2005 Research Assistant, Consortium for Health Outcomes Innovation and Cost Effectiveness Studies, University of Michigan

Current Professional Memberships & Affiliations
American Public Health Association
American College of Epidemiology
American Heart Association, Epidemiology and Prevention Council
Society of Epidemiologic Research

Recent Honors & Awards
2015 Fellow of the American Heart Association (FAHA)
2015-2016 UC Berkeley Committee on Teaching Excellence Honoree
2012 UC Berkeley Leon Henkin Citation for Distinguished Service
2012 UC Berkeley Hellman Family Faculty Fellowship
2009-present UC Berkeley SPH Martin Sisters Endowed Chair in Medical Research and Public Health

Service
2015-present UC Berkeley SPH, Epidemiology and Biostatistics MPH Program (Co-Director)
2015-present American Heart Association, Social Determinants of Health Subcommittee (Chair)
2014-present UC Berkeley SPH, Student Advisory Committee (Member)
2013-present American Heart Association (Abstract Reviewer)
2012-present American Heart Association, Ten Day Seminar on the Epidemiology & Prevention of Cardiovascular Disease (Faculty Instructor)
2011-present UC Berkeley, Resident Faculty Program (Resident Faculty)
2010-present UC Berkeley Health Career Opportunities Program (Faculty Mentor)

Selected Publications
Name: Amani Nuru-Jeter
Position Title(s): Associate Professor, Community Health & Human Development and Epidemiology Divisions

EDUCATION/TRAINING

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<tr>
<td>U. Maryland, College Park</td>
<td>BS</td>
<td>1995</td>
<td>Biology</td>
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<td>Johns Hopkins U.</td>
<td>PhD</td>
<td>2003</td>
<td>Health Policy &amp; Management</td>
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Positions
2005-2011 - UC, Berkeley SPH CHHD & Epidemiology Divisions (Assistant Professor)
2011-present - UC, Berkeley SPH CHHD & Epidemiology Divisions (Associate Professor)
2009-present - UC, Berkeley School of Public Health HSPA Division Health Track (Faculty Affiliate)
2012-present - UC, Berkeley Haas Institute for a Fair & Inclusive Society (Faculty Affiliate)
2012-present - UC, Berkeley Population Center (Faculty Affiliate)
2013-present - UC, Berkeley Institute for the Study of Societal Issues (Faculty Affiliate)
2015-present - UC, Berkeley SPH HPM, Behavioral & Community Sciences Track (Core Faculty)

Current Professional Memberships & Affiliations
American Public Health Association
Society of Epidemiologic Research
Population Association of America
American Heart Association

Recent Honors & Awards
2009 - UC, Berkeley Sarlo Distinguished Graduate Student Mentoring Award
2009 - UC, Berkeley Hellman Faculty Fund Award Recipient
2015 - UIC, SPH 7th Annual Minority Health Conference (Keynote Address)
2016 – University of Nebraska, Lincoln Minority Health Conference (Keynote Address)

Service
2013 - UC, System-wide Academic Task Force on the Moreno Report (Presidential Appointment)
2014-present - UC, Berkeley Campus Climate Council (Chancellor’s Appointment)
2012-2015 - UC, Berkeley Academic Senate Diversity, Equity, & Campus Climate Committee (Member)
2014 - UC, Berkeley Committee on Students of Color & Multicultural Engagement (Chancellor’s Appointment)
2012-present - Berkeley, Black Infant Health (Community Advisory Board)
2013-present - Berkeley, Healthy Black Families (Advisory Board)
2013-present - Berkeley Ethnic Health Institute (Advisory Board & Cardiovascular Committee)
2013-present – University Committee on Affirmative Action, Diversity, and Equity (Vice-Chair, 2015/2016)
2015-present - UC, Berkeley SPH Faculty Council

Recent Publications [selected]
Name: Jeffrey Oxendine

Position Title(s):
Lecturer & Associate Dean for Public Health Practice
Director, Center for Health Leadership

EDUCATION/TRAINING

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<tr>
<td>CSU, Chico</td>
<td>BA</td>
<td>1982</td>
<td>Health Care Management</td>
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<td>UC, Berkeley</td>
<td>MPH</td>
<td>1986</td>
<td>Health Policy &amp; Management</td>
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<tr>
<td>UC, Berkeley</td>
<td>MBA</td>
<td>1986</td>
<td>Business Administration</td>
</tr>
</tbody>
</table>

Positions
2008-present – Founder and Director, UC Berkeley Center for Health Leadership
2005-present - UC, Berkeley School of Public Health (Associate Dean for Public Health Practice)
2002-present - UC, Berkeley SPH Lecturer and Executive Director of Center for Public Health Practice

Current Professional Memberships & Affiliations
American Public Health Association
California Association of Health Leaders

Recent Honors & Awards
2008 - UC Berkeley Chancellor’s Award for Distinguished Public Service by a Faculty Member
2010 - California Wellness Foundation Champion for Health Professions Diversity Award
2011 - Founder’s Award, Health Career Connection, 20th Anniversary Recognition
2013 - James Irvine Foundation Leadership Award

Service
1990-present - Health Career Connection (Founder, President, & Board Member)
2007-present - Health The California Health Professions Consortium (Co-Director)
2009-present - The California Health Workforce Alliance (Co-Founder & Co-Director)
2011-present - Health Workforce Development Council, California Workforce Investment Board (Member)
2013 - CA Office of Statewide Health Planning & Development Pathway Subcommittee (Lead Consult)
2013-present - Insure the Uninsured Project (Advisory Board Member)
2013-2015 - Glide Health Services (Advisory Board Member)
2014-present - The California Institute for Applied Neuroscience (Advisory Board Member)
2015-present - The East Bay Health Workforce Partnership, Steering Committee

Recent Publications
Name: Emily June Ozer

Position Title(s):
Professor, Community Health and Human Development; Director, Health and Social Behavior Program

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>Harvard University</td>
<td>BA</td>
<td>1989</td>
<td>Psychology</td>
</tr>
<tr>
<td>UC, Berkeley</td>
<td>MA</td>
<td>1995</td>
<td>Clinical Psychology</td>
</tr>
<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1999</td>
<td>Clinical Psychology</td>
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Positions
2014-present - UC, Berkeley School of Public Health, CHHD Division (Professor)
2009-2014 - UC, Berkeley School of Public Health, CHHD Division (Associate Professor)
2003-2009 - UC, Berkeley School of Public Health, CHHD Division (Assistant Professor)
1/2003-7/2003 – UC, Irvine School of Social Ecology, Psychology and Social Behavior (Assistant Professor)

Current Professional Memberships & Affiliations
Div 27 APA Society for Community for Research and Action
SRCD Society for Research on Child Development
SRA Society for Research on Adolescence

Recent Honors & Awards
2015 - Chancellors’ Award for Research in the Public Interest (UC-Berkeley campus-wide award to one faculty member each year)
2013-present - Teaching Award, UC-Berkeley School of Public Health Committee on Teaching Excellence
2011-2012 - Stanford University Center for Advanced Study of Behavioral Sciences [CASBS] (Fellow)
2007-2012: William T. Grant Foundation Scholars’ Award (awarded to 5 scholars nationally across disciplines who study child or adolescent development).

Selected Campus and School of Public Health Service since 2012
- Faculty Council Chair, UCB SPH (2014-15); Faculty Council Member (2016-17)
- Faculty Chair, Health and Social Behavior MPH program (2012-present)
- Co-Chair, SPH Strategic Plan Working Group on Community Engagement (2013-15)
- Steering and Admissions Committees, MSW-MPH Concurrent Degree Program (2010-present)
- Academic Advisory Board, UCB Labor Occupational Health Program (2012-present)
- SPH representative for new building design for SPH, Education, and Psychology (2012-13; 2015-present)
- Dean’s Search Committee School of Education (2009-2010); Faculty Search Committees, School of Social Welfare (2013-2014); Ad hoc tenure committee (2015).

Selected Recent Publications
**Name:**  Maya Liv Petersen  
**Position Title(s):**  Associate Professor of Biostatistics and Epidemiology

**EDUCATION/TRAINING**

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>Stanford University</td>
<td>BA</td>
<td>1998</td>
<td>Human Biology</td>
</tr>
<tr>
<td>UC, Berkeley</td>
<td>MS</td>
<td>2002</td>
<td>Health &amp; Medical Sciences</td>
</tr>
<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>2007</td>
<td>Biostatistics</td>
</tr>
<tr>
<td>UC, San Francisco</td>
<td>MD</td>
<td>2009</td>
<td>Medicine</td>
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**Positions**

- **2008 - 2015**  Assistant Professor of Biostatistics and Epidemiology, University of California, Berkeley  
- **2011 - present**  co-PI, Sustainable East Africa Research on Community Health [SEARCH] Trial  
- **2014 - present**  co-PI Adaptive Strategies for Preventing & Treating Lapses of Retention in Care (AdaPT-R) Trial  
- **2014 - present**  Faculty- Center for Effective Global Action (CEGA), University of California, Berkeley  
- **2014 - present**  Faculty - Center for Politics of Development (CPD), University of California, Berkeley  
- **2015 - present**  Associate Professor of Biostatistics and Epidemiology, University of California, Berkeley

**Recent Honors & Awards**

- **2011 - Hellman Family Faculty Fund Award**  
- **2011-2014 - Doris Duke Clinical Scientist Development Award**  
- **2014 – American Statistical Association Causality in Statistical Education Prize**

**Service**

- **2010 - present**  Epidemiology (Editorial Board)  
- **2011 - present**  Epidemiological Methods (Editorial Board)  
- **2011 - present**  Journal of Causal Inference (Editor in Chief)  
- **2011- 2013**  Improving Blood Safety & HIV Testing in Brazil. [R01 HL 108704-01] (Statistician- DSMB)  
- **2013 – present**  Berkeley Initiative for Transparency in Social Sciences (Executive Committee)  
- **2014 – present**  Phase II Trial on Rizatriptan for vestibular migraine. [U01 DC013256-01 A1] (Chair- DSMB)

**Recent Publications**

Name
Cheri Pies

Position Title(s)
Clinical Professor, CoE Director

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<tr>
<td>UC Berkeley</td>
<td>BA</td>
<td>1971</td>
<td>Social Science</td>
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<td>Boston University, School of Social Welfare</td>
<td>MSW</td>
<td>1976</td>
<td>Social Welfare</td>
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<td>UC Berkeley</td>
<td>MPH</td>
<td>1985</td>
<td>Maternal &amp; Child Health</td>
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<td>UC Berkeley</td>
<td>DrPH</td>
<td>1993</td>
<td>Health Education</td>
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Positions
2013-present – UC Berkeley School of Public Health, DrPH Program (Director)
2010-present – UC Berkeley School of Public Health, Maternal & Child Health Program (Clinical Professor)
2001-2010 – UC Berkeley School of Public Health (Lecturer)
2001-2012 – UC Berkeley School of Public Health, DrPH Program (Community Co-Director)
1997-2010 – Family, Maternal and Child Health Programs Contra Costa Health Services (Director)
1995-2002 – UC Berkeley School of Public Health, Division of Public Health Biology & Epidemiology (Associate Adjunct Professor)
1995-1997 – UC Berkeley School of Public Health, Maternal & Child Health Program (Associate Director/ Assoc. Adjunct Professor)

Current Professional Memberships & Affiliations
American Public Health Association: Maternal & Child Health Section, Forum on Bioethics, Lesbian/Gay Caucus
Association of teachers of Maternal and Child Health
California Public Health Association - North

Recent Honors & Awards
2010 – MCH 75th Anniversary, MCH Champion Honoree for work in developing and implementing promising practices for addressing health disparities in MCH populations.
2010 – Adeline Hackett Innovation in Public Health Award, Public Health Institute
2006 – Manager of the Year, PH Division, Contra Costa Health Services

Service
2014-present – Board Member, Homeless Prenatal Program, San Francisco
Co-Founder, A Safe Place – Oakland shelter for battered women and children
Board of Directors, National Center for Lesbian Rights
Board of Directors, Reproductive Technologies Project
Board of Directors, Coalition for the Medical Rights of Women

Recent Publications
Name: Daniel Portnoy  
Position Title(s): Professor, SPH - Infectious Diseases & Vaccinology, MCB - Biochemistry, Biophysics, & Structural Biology

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<th>Field of Study</th>
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<tr>
<td>UC, Los Angeles</td>
<td>BA</td>
<td>1978</td>
<td>Bacteriology</td>
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<tr>
<td>U. of Washington, Seattle</td>
<td>PhD</td>
<td>1983</td>
<td>Microbiology &amp; Immunology</td>
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Positions
1997-present - UC, Berkeley School of PH IDV Division, Molecular & Cell Biology BBS Division (Professor)
2003-present - UC, Berkeley MCB Immunology & Pathogenesis Division (Affiliate Faculty)

Current Professional Memberships & Affiliations

Recent Honors & Awards
2014-19 - Edward E. Penhoet Distinguished Chair in Global Public Health and Infectious Diseases, Department of Molecular and Cell Biology & The School of Public Health, UC, Berkeley
2013 - National Academy of Sciences (Elected Member)

Service
2010-present: UC, Berkeley, MCB - BBS Faculty Graduate Advising Committee (Member)
2010-2012: UC, Berkeley School of Public Health Faculty Council (Member)
2012-2013: UC, Berkeley SPH Infect. Diseases & Vaccinology Div. Faculty Search Committee (Chair)
2013 - ISOPOL XVII Organizing Committee (Member)
2013-2014 - UC, Berkeley MCB Search Committee in Emerging & Neglected Diseases (Member)
2013-2014 - Bill & Melinda Gates Foundation Tuberculosis External Advisory Committee (Member)
2012-2015 - Faculty Director, UC Berkeley Center for Emerging and Neglected Diseases

Recent Publications
Name: Malcolm Potts

Position Title(s): Professor

EDUCATION/TRAINING

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<tr>
<td>Cambridge U., England</td>
<td>BA</td>
<td>1959</td>
<td>Natural Sciences</td>
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<tr>
<td>Cambridge U., England</td>
<td>MA</td>
<td>1960</td>
<td>Medicine</td>
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<tr>
<td>Cambridge U., England</td>
<td>PhD</td>
<td>1965</td>
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Positions
1992-present - UC, Berkeley SPH CHHD Division Bixby Endowed Chair in Pop. & Family Planning (Professor)
2013-present - UC, Berkeley OASIS Initiative (Executive Director)

Current Professional Memberships & Affiliations
Royal College Obstetricians and Gynecologists, London (Fellow)
Royal Society of Medicine, London (Fellow)
American Association for the Advancement of Science
International Union for the Scientific Study of Population (Member)
Zoological Society, London (Fellow)
Human Behavior and Evolution Society (Member)

Recent Honors & Awards
2013 - American College of Obstetricians & Gynecologists Samuel Cosgrove, New Orleans (Keynote Lecture)

Service
1969-present - Journal of Biosocial Science (Editorial Board)
1971-1990 – Founding board member, Family Health International President/CEO
1967-1978 – Founding board member, Marie Stopes International
2001-present - Ventures in Health and Development (Founding Board Member & Secretary
2002-present - Citizens Concerned for Parolees (Member)
2006-present - Population & Development International, Bangkok, Thailand (Founding Board Member)

Recent Publications
- Campbell, M., Casterline, J., Graves, A., Hall, T., May, J., Perlman, D., Potts, M., Spiedel JJ., Zulu
- Potts M., Weinrib R.,Campbell, M. Why bold policies for family planning are needed now. Contraception 2013
Name: Ndola Prata

Position Title(s): Associate Professor in Residence, Community Health & Human Development Division

EDUCATION/TRAINING

<table>
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<tr>
<td>U. of Angola, Africa</td>
<td>MD</td>
<td>1989</td>
<td>Medicine</td>
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<tr>
<td>U. of London, England</td>
<td>MS</td>
<td>1996</td>
<td>Medical Demography</td>
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Positions
Current - UC, Berkeley School of Public Health CHHD Division (Associate Professor in Residence)
Current - UC, Berkeley School of Public Fred H. Bixby Endowed Chair in Population Planning
Current - UC, Berkeley School of Public Health Bixby Center for Population, Health & Sustainability (Director)

Current Professional Memberships & Affiliations
American Public Health Association [APHA] (Member)
Population Association of America [PAA] (Member)
African Association of Population Studies [UAPS] (Member)
International Union for the Scientific Study of Population [IUSSP] (Member)

Recent Honors & Awards
2012 - UC Berkeley School of Public Health Teaching Excellence Award
2014 - Robert O. Collins Fellowship (Award to support faculty research in African studies or African languages)

Service
2009-present - UC, Berkeley & UC, San Francisco Joint Medical Program Executive Committee (Member)
2010-present - UC, Berkeley DrPH Program Management Committee (Member)
2011-present - Merck for Mother Advisory Board (Member)
2014-present – IMP Board of Directors (Member)

Recent Publications
Name: Stephen Rappaport  
Position Title(s): Professor-in-Residence, Environmental Health Sciences Division

EDUCATION/TRAINING

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<th>Year</th>
<th>Field of Study</th>
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<tr>
<td>U. of Illinois, Urbana</td>
<td>BS</td>
<td>1969</td>
<td>Chemistry</td>
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<tr>
<td>U N. Carolina, Chapel Hill</td>
<td>PhD</td>
<td>1974</td>
<td>Environ. Science &amp; Engineering</td>
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Positions  
2006-present - UC, Berkeley SPH Environmental Health Sciences Division (Professor-in-Residence)  
2006-present - UC, Berkeley SPH Center for Exposure Biology (Director)

Current Professional Memberships & Affiliations  
American Association for Cancer Research  
American Society for Exposure Science  
British Occupational Hygiene Society  
American Academy of Industrial Hygiene  
American Conference of Governmental Industrial Hygienists  
Alpha Chi Sigma (Professional Chemistry)

Recent Honors & Awards

Service  
1995-present - *Biomarkers: Biochem. Indicators of Exposure, Response & Susceptibility to Chemicals* (Ed. Board)  
2004-present - *Occupational and Environmental Medicine* (Editorial Board)

Recent Publications

Name: Arthur Reingold
Position Title(s): Professor of Epidemiology, Edward Penhoet Distinguished Chair in Global PH & Infectious Diseases Emeritus

EDUCATION/TRAINING

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<th>Field of Study</th>
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<tr>
<td>U. of Chicago, IL</td>
<td>BA</td>
<td>1970</td>
<td>Medicine</td>
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<tr>
<td>U. of Chicago, IL</td>
<td>MD</td>
<td>1976</td>
<td>Medicine</td>
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Positions
1987-present - UC, Berkeley School of Public Health (Professor of Epidemiology)
1989-present - UC, San Francisco Departments of Epidemiology & Biostatistics and Medicine (Professor)
2008-2014 - UC, Berkeley School of Public Health (Associate Dean for Research)
2009-2014 - Edward Penhoet Distinguished Chair in Global PH & Infectious Diseases

Current Professional Memberships & Affiliations
- Society for Epidemiologic Research (President, 2009-2010)
- Infectious Disease Society of America (Fellow)
- American Epidemiological Society
- American College of Epidemiology (Fellow)
- AAAS (Fellow)
- Institute of Medicine (Member)
- American Epidemiologic Society (President, 2015-2016)

Recent Honors & Awards

Service
- 2000-present UC, Berkeley School of Public Health Division of Epidemiology (Chair)
- 2011 – 2013 Institute of Medicine Committee on Vaccine Priorities (Member)
- 2008 – 2014 WHO Strategic Advisory Group of Experts on Vaccines (SAGE) (Member)
- 2012 – 2014 WHO Chair, Review of the Heterologous Effects of Childhood Vaccines
- 2012 – 2014 WHO, CDC, UNICEF, American Red Cross, & UN Foundation External Review of the Measles Rubella Initiative (Chair)
- 2013-present US Dept. of Health & Human Services Advisory Committee on Immunization Practices (ACIP) (Member)
- 2015-present Institute of Medicine Committee on Elimination of Hepatitis B and Hepatitis C (Member)

Recent Publications
Name
Justin V. Remais

Position Title(s)
Associate Professor

EDUCATION/TRAINING

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<tr>
<td>University of California, Berkeley</td>
<td>B.A.</td>
<td>05/98</td>
<td>Environmental Science</td>
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<tr>
<td>University of California, Berkeley</td>
<td>M.S.</td>
<td>12/02</td>
<td>Civil and Environmental Engineering</td>
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<tr>
<td>University of California, Berkeley</td>
<td>Ph.D.</td>
<td>12/06</td>
<td>Environmental Health</td>
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Positions
07/08 – 03/13  Assistant Professor, Environmental Health, Rollins School of Public Health, Emory University
07/08 – Adjunct Professor, Civil and Environmental Engineering, Georgia Institute of Technology
03/13 – 12/15  Associate Professor, Environmental Health, Rollins School of Public Health, Emory University
12/15 – Associate Professor, Environmental Health Sciences, School of Public Health, University of California, Berkeley

Current Professional Memberships & Affiliations
American Association for the Advancement of Science
American Society of Tropical Medicine and Hygiene
European Geosciences Union

Recent Honors & Awards
Faculty Distinction Award, Global Health Institute, Emory University
Award for Excellence in Teaching, Department of Environmental Health, Emory University
Scholar in Residence, Global Health Institute, Emory University
Fellow, Woodruff Leadership Academy, Emory University

Service
PLoS Neglected Tropical Diseases, associate editor (2015-Present)
Water Quality, Exposure and Health, associate editor (2008-2011)
US NIH Center for Scientific Review, Early Career Reviewer (2014-Present)
Physical Sciences Panel, Research Grants Council of Hong Kong, ad hoc external proposal reviewer (2013)
Wellcome Trust/Dept of Biotechnology India Biomedical Research Fellowship, ad hoc proposal reviewer (2012)

Recent Publications
**Name:** Lee Riley  
**Position Title(s):** Professor and Chair, Division of Infectious Diseases & Vaccinology

### EDUCATION/TRAINING

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<tr>
<td>Stanford U.</td>
<td>BA</td>
<td>1972</td>
<td>Philosophy</td>
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<tr>
<td>UC, San Francisco</td>
<td>MD</td>
<td>1978</td>
<td>Medicine</td>
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### Positions
- 1996-present - UC, Berkeley School of Public Health (Professor of Infectious Diseases & Vaccinology)
- 2008-present - UC, Berkeley School of Public Health Division of Infectious Diseases & Vaccinology (Chair)

### Current Professional Memberships & Affiliations
- Board of Scientific Counselors, appointed by Secretary of HHS Kathleen Sebelius
- American Association for the Advancement of Sciences (Fellow)
- Infectious Disease Society of America (Fellow)
- American Academy of Microbiology (Fellow)

### Recent Honors & Awards
- 2015-present-Special Visiting Researcher Fellowship, Science-without-Borders Program, Brazilian Health Ministry
- 2015-- *Honoris Causa*, Carol Davila University of Medicine and Pharmacy, Bucharest, Romania
- 2015-2020- R01AI117064: Consortium for drug-resistant Gram-negative pathogen detection
- 2012-2017 - Global Health Scholars and Fellows Training Program [Global Health Equity Scholars] (Director)
- 2011-2014--UBS Optimus Foundation award
- 2003- 2013 - UC, Berkeley Fogarty International Center for Global Infectious Disease Program (Director)

### Service
- 2000-present--RWJ Harold Amos Medical Faculty Development Program (National Advisory Committee)
- 2003-2007--Advisory Committee, Fogarty International Center, NIH

### Recent Publications
- Queiroz A, Medina-Cleghorn D, Marjanovic O, Nomura DK, Riley LW. Comparative metabolic profiling of mce1 operon mutant vs wild-type Mycobacterium tuberculosis strains. Pathog Dis. 2015 Nov;73(8).
Name: James Robinson
Position Title(s): Leonard D. Schaeffer Professor of Health Economics

EDUCATION/TRAINING

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
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<tr>
<td>UC, Santa Cruz</td>
<td>BA</td>
<td>1976</td>
<td>Economics &amp; Philosophy</td>
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<tr>
<td>UC, Berkeley</td>
<td>MPH</td>
<td>1981</td>
<td>Health Planning &amp; Policy</td>
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<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1984</td>
<td>Economics</td>
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Positions
Current - UC, Berkeley SPH Leonard D. Schaeffer Professor of Health Economics
Current - UC, Berkeley Center for Health Technology (Director)

Recent Honors & Awards
2011-present - UC, Berkeley SPH Leonard D. Schaeffer Endowed Chair in Health Economics.
2005-2010 - UC, Berkeley SPH Kaiser Permanente Endowed Chair in Health Policy and Management

Service
Current - Integrated Healthcare Association [IHA] (Advisory Board)
Current - Health Affairs (Contributing Editor)
Current – National Institute for Health Care Management (Advisory Board)

Recent Publications


Name: Hector P. Rodriguez

Position Title(s): Associate Professor, Health Policy & Management

EDUCATION/TRAINING

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<tr>
<td>UC, San Diego</td>
<td>BA</td>
<td>1996</td>
<td>Urban Studies &amp; Planning</td>
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<tr>
<td>UC, Berkeley</td>
<td>MPH</td>
<td>1998</td>
<td>Health Policy &amp; Administration</td>
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<tr>
<td>Harvard U Cambridge MA</td>
<td>Ph.D.</td>
<td>2006</td>
<td>Health Policy/Medical Sociology</td>
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Positions
2014-present - UC, Berkeley SPH Health Policy & Management Division (Associate Professor)
2014-present - UC, Berkeley Faculty Group in Health Policy (Chair)
2014-present - UC, Berkeley Center for Healthcare Organizational and Innovation Research (Co-Director)
2015-present – UC, Berkeley California Program on Access to Care (Interim Director)

Current Professional Memberships & Affiliations
AcademyHealth
American Public Health Association
Academy of Management

Recent Honors & Awards
2011 - Association of University Programs in Health Admin. John D. Thompson Prize Young Investigators Prize
2012-2013 - UCLA Health Policy and Management Professor of the Year award recipient

Service
2016-present - American Medical Group Foundation (Board Member)
2015-present – Health Care Management Review (Editorial Board Member)
2015-present - AcademyHealth Education Council (Council Member)
2011-present - California Right Care Initiative (Scientific Advisory Board Member)
2010-present - HealthCare Partners Institute for Applied Research and Education (Board Member)

Recent Publications


Name: Sharon Sagiv  
Position Title(s): Assistant Adjunct Professor of Epidemiology

EDUCATION/TRAINING

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<th>Institution &amp; Location</th>
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<tr>
<td>Franklin &amp; Marshall Coll.</td>
<td>BA</td>
<td>1993</td>
<td>Biology</td>
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<tr>
<td>Boston University</td>
<td>MPH</td>
<td>1998</td>
<td>Epidemiology &amp; Biostatistics</td>
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<tr>
<td>U N. Carolina, Chapel Hill</td>
<td>PhD</td>
<td>2004</td>
<td>Epidemiology</td>
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Positions
2014-present Adjunct Assistant Professor of Epidemiology, UC Berkeley School of Public Health
2010 – 2013 Assistant Professor of Environmental Health, Boston University School of Public Health
2010 – 2010 Instructor of Medicine, Harvard Medical School
2008 - 2010 Research Associate, Environmental Health, Harvard School of Public Health
2005 - 2008 Postdoctoral Research Fellow in Neurodevelopmental Toxicology, Harvard School of Public Health

Current Professional Memberships & Affiliations
2004 - Member, International Society for Environmental Epidemiology
2012 - Member, International Society for Children’s Health and Environment
2014 - Member, International Society for Autism Research

Recent Honors & Awards
2014 School of Public Health Committee on Teaching Excellence Award, UC Berkeley (Grant Writing Seminar)
2007 Travel Award, Harvard School of Public Health

Service
2015 Member, Study Section: NIEHS Pathway to Independence Award K99/R00
2015 Teaching and Research Advisory Council, University of California, Berkeley School of Public Health
2013 Graduate Group, Division of Epidemiology, University of California, Berkeley School of Public Health
2012 Early Stage Faculty Advisory Committee, Boston University Medical Center
2012 Member, Study Section: NIEHS Children's Environmental Health and Disease Prevention Research Centers

Recent Publications
- Sagiv SK, Rifas-Shiman SL, Webster TF, Mora AM, Harris MH, Calafat AM, Ye X, Gillman MW, Oken E.  
  Sociodemographic and perinatal predictors of early pregnancy per- and polyfluoroalkyl substance (PFAS) 
  Prenatal and childhood polybrominated diphenyl ether (PBDE) exposure and attention and executive function at 
  9-12 years of age. Neurotoxicology and Teratology; 2015; 52(Pt B):151-61.
- Sagiv SK, Kalkbrenner AE, Bellinger DC. Of decrements and disorders: assessing impairments in 
  neurodevelopment in prospective studies of environmental toxicant exposures. Environmental Health; 2015; 
- Sagiv SK, Thurston SW, Bellinger DC, Amarasiriwardena C, Korrick SA. Prenatal exposure to mercury and fish 
  consumption during pregnancy and ADHD-related behavior in children. Archives of Pediatric and Adolescent 
- Sagiv SK, Thurston SW, Bellinger DC, Altshul LM, Korrick SA. Neuropsychological measures of attention and 
  impulse control among 8-year-old children exposed prenatally to organochlorines. Environmental Health 
Name: William Satariano

Position Title(s): Professor of Epidemiology and Community Health

EDUCATION/TRAINING

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Santa Clara U.</td>
<td>BA</td>
<td>1968</td>
<td>Sociology</td>
</tr>
<tr>
<td>Purdue U., Lafayette, IN</td>
<td>MS</td>
<td>1970</td>
<td>Sociology</td>
</tr>
<tr>
<td>Purdue U., Lafayette, IN</td>
<td>PhD</td>
<td>1975</td>
<td>Sociology</td>
</tr>
</tbody>
</table>

Positions
1995-present - UCB SPH Epidemiology & CHHD Divisions (Professor of Epidemiology & Community Health)
2009-present - UC, Berkeley SPH MPH/MCP Concurrent Degree Program (Co-Director)

Current Professional Memberships & Affiliations
American Public Health Association
Gerontological Society of America
American College of Epidemiology (Fellow)

Recent Honors & Awards
2010-2015 - UC, Berkeley School of Public Health Berkeley Endowed Chair in Geriatrics
2012 - UC, Berkeley American Cultures Innovation in Teaching Award
2014 - UC, Berkeley American Cultures Impact Award

Service
1988-present - Journal of Aging and Health (Editorial Board)
1998-2002 - UC, Berkeley School of Public Health (Associate Dean for Public Health Practice)
2000-2005 – UC, Berkeley School of Public Health, Health & Social Behavior MPH Program (Director)
2012-present - Journal of Comorbidity (Editorial Board)

Recent Publications
Name: Richard Scheffler

Position Title(s):
Distinguished Professor Health Economics and Public Policy

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
</tr>
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<tbody>
<tr>
<td>Hofstra University</td>
<td>BS</td>
<td>1965</td>
<td>Economics</td>
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<tr>
<td>Brooklyn College</td>
<td>MA</td>
<td>1967</td>
<td>Economics</td>
</tr>
<tr>
<td>New York University</td>
<td>PhD</td>
<td>1971</td>
<td>Economics</td>
</tr>
</tbody>
</table>

Positions
1981-present - UCB SPH HPM Division & Goldman SPP (Professor of Health Economics & Public Policy)
1999-present - UC, Berkeley SPH Endowed Chair, Attorney General of the State of California

Current Professional Memberships & Affiliations
National Institute of Mental Health
U.S. Agency for International Development World Bank
International Health Economics Association
American Economics Association

Recent Honors & Awards
2015 – School of Public Health Committee on Teaching Excellence Award
2015 – Gold Medal from Charles University in Prague, Czech Republic for his continued support of international scientific and educational collaboration
2013 – Chair of Excellence in Economics, Carlos III University of Madrid, Spain
2012 – Fulbright Scholar, Pontificia Universidad Catolica de Chile, Santiago, Chile

Service
2014 - present University Committee on Faculty Welfare - Health Care Task Force
2012 – present UC, Berkeley SPH Berkeley Forum for Improving CA’s Healthcare Delivery System (Co-Director)
2012 Faculty Chair (elected), School of Public Health, University of California, Berkeley
2008–present Executive Committee, Robert Wood Johnson Scholars in Health Policy
2008–present Executive Committee, PhD Program Health Services and Policy Analysis, University of California, Berkeley

Recent Publications
Name: Megan R. Schwarzman

Position Title(s): Assistant Research Scientist & Lecturer, Environmental Health Sciences

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Haverford College, PA</td>
<td>BA</td>
<td>1994</td>
<td>History</td>
</tr>
<tr>
<td>U. of Massachusetts</td>
<td>MD</td>
<td>2000</td>
<td>Medicine</td>
</tr>
<tr>
<td>UC San Francisco</td>
<td>Medical Residency</td>
<td>2003</td>
<td>Family Medicine</td>
</tr>
<tr>
<td>UC, Berkeley</td>
<td>MPH</td>
<td>2007</td>
<td>Environ. Health Sciences</td>
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</tbody>
</table>

Positions
2009-present - UC, Berkeley Center for Green Chemistry (Associate Director of Health & Environment)
2007-present - UC, Berkeley SPH Environmental Health Sciences (Lecturer)
2007-present - UC, Berkeley COEH (Research Scientist)
2005-present - UC, San Francisco Department of Family & Community Medicine (Associate Physician)

Current Professional Memberships & Affiliations
American Board of Family Medicine, Diplomat, 2004, recertified 2014
International Society for Children’s Health & Environment

Recent Honors & Awards

Service
2009-present - CA EPA Dept. of Toxic Substances Control Green Chemistry Initiative Green Ribbon Panel (Appointed Member)
2013-2014 - U.S. Green Building Council (Senior Science Fellow in Materials Health)
2014-present – Biomonitoring California Scientific Guidance Council (Appointed by Speaker of the Assembly)

Recent Publications

Name: Steve Selvin

Position Title(s): Professor of Biostatistics and Epidemiology

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>UC, Riverside</td>
<td>BA</td>
<td>1965</td>
<td>Mathematics</td>
</tr>
<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1970</td>
<td>Biostatistics</td>
</tr>
</tbody>
</table>

Positions
1983-present - UCB School of Public Health (Professor of Biostatistics & Epidemiology)
1992-present - U. of Michigan (Adjunct Professor of Epidemiology)
2005-2012 - Johns Hopkins U. Bloomberg School of Public Health (Professor of Epidemiology/Biostatistics)

Current Professional Memberships & Affiliations
- Society for Epidemiologic Research
- American Statistical Association
- Biometrics Society

Recent Honors & Awards
- 2007 - Association of Schools of Public Health/Pfizer Public Health Academy of Distinguished Teachers
- 2011 - University of California Berkeley Citation

Service
- 1985-2013 - UC, Berkeley SPH Epidemiology/Biostatistics MPH Program (Chair)
- 1983-2010 - UC, Berkeley SPH Division of Biostatistics (Chair)
- 1996-2010 - UC, Berkeley SPH Dean’s Academic Council (Member)
- 1998 - UC, Berkeley SPH MPH Management Committee (Member)
- 2000-2013 - UC, Berkeley Five (5) University-wide Ad hoc Committees (Member)
- 2002-2011 - UC, Berkeley Academic Senate Council of Undergraduate Deans (Member)
- 2002-2013 - UC, Berkeley SPH Undergraduate Major Management Committee (Chair)

Recent Publications
Name: Stephen Shortell

Position Title(s): Blue Cross of California Distinguished Professor of Health Policy and Management

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
</tr>
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<tbody>
<tr>
<td>U. of Notre Dame</td>
<td>BBA</td>
<td>1966</td>
<td>Business Administration</td>
</tr>
<tr>
<td>UC, Los Angeles</td>
<td>MPH</td>
<td>1968</td>
<td>Hospital Administration</td>
</tr>
<tr>
<td>U. of Chicago</td>
<td>MBA</td>
<td>1970</td>
<td>Business Administration</td>
</tr>
<tr>
<td>U. of Chicago</td>
<td>PhD</td>
<td>1972</td>
<td>Behavioral Science</td>
</tr>
</tbody>
</table>

Positions
Current - UCB SPH HPM Division (Blue Cross of CA Distinguished Professor of Health Policy & Admin.)
Current - UCB Haas School of Business (Professor of Organizational Behavior)
Current - UCB SPH Center for Healthcare Organization and Innovation Research (CHOIR) (Director)
2002-2013 - UC, Berkeley School of Public Health (Dean)

Current Professional Memberships & Affiliations
Institute of Medicine, National Academy of Sciences
Academy of Management
American Public Health Association
Academy Health

Recent Honors & Awards
2009 - U. of Iowa School of Public Health Hansen Public Health Leadership Award
2013 - Academy of Management Division of Health Care Management Distinguished Research Scholar Award
2013 - University of California Berkeley Citation
2013 - California Legislature Assembly Resolution
2013 - State of California Senate Certificate of Recognition (May 5, 2013)
2013 - Board of Supervisors, County of Alameda Commendation, (May, 2013)
2013- American Hospital Association/HRET TRUST Healthcare Leadership Excellence Award

Service
2012-present - Gordon and Betty Moore Foundation, Patient Care Management Initiative (Advisor)
2012 - California Health Benefits Exchange Evaluation Plan Advisory Committee (Member)
2013 - Governor Brown’s Get Healthy Initiative Expert Advisory Group (member)
2013 - Berkeley Forum on Improving California’s Health Care Delivery System (Chair)
2013 - Institute of Medicine Interest Group – Health Policy & Health Care Systems Planning Committee
2013 - Academy Health Annual Meeting Planning Committee (Member)
2016 – Advisory Committee – Physician Practice Transformation Initiative
20150- 2016 – School Academic Personnel Committee

Recent Publications
Name
Allan Herries Smith

Position Title(s)
Professor Emeritus of Epidemiology

EDUCATION/TRAINING

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>MM/YY</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>Victoria U. of Wellington, New Zealand</td>
<td>BSc</td>
<td>1964</td>
<td>Mathematics</td>
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<tr>
<td>U. of Otago, New Zealand</td>
<td>B Med Sc</td>
<td>1969</td>
<td>Epidemiology</td>
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<tr>
<td>U. of Otago, New Zealand</td>
<td>MBChB (MD)</td>
<td>1970</td>
<td>Medicine</td>
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<tr>
<td>U. of Otago, New Zealand</td>
<td>PhD</td>
<td>1975</td>
<td>Epidemiology</td>
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</table>

Positions
1983-present – UC Berkeley School of Public Health, Department of Epidemiology (Professor)
1980-1986 – University of North Carolina at Chapel Hill School of Public Health, Department of Epidemiology (Adjunct Associate Professor)
1978-1983 – Wellington Clinical School of Medicine, Department of Community Health (Senior Lecturer)

Current Professional Memberships & Affiliations
1994-1996 – President, International Society for Environmental Epidemiology
1197-1999 – Member, Subcommittee on Arsenic in Drinking Water, National Research Council
1999-2003 Member, National Toxicology Program Board of Scientific Counselors, US Office of Health and Human Services

Recent Honors & Awards
2009 – International Society for Environmental Epidemiology, John R. Goldsmith Award for sustained and outstanding contributions to the knowledge and practice of environmental epidemiology

Service
Founding Director of Arsenic Health Effects Research Program, UC Berkeley School of Public Health
President of the International Society for Environmental Epidemiology (ISSE)
Medical Research Council Training Fellow

Recent Publications
Name: Kirk R. Smith
Position Title(s): Professor of Global Environmental Health

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>UC, Berkeley</td>
<td>BA</td>
<td>1968</td>
<td>Physical Sciences</td>
</tr>
<tr>
<td>UC, Berkeley</td>
<td>MPH</td>
<td>1972</td>
<td>Environmental Health Sciences</td>
</tr>
<tr>
<td>UC, Berkeley</td>
<td>PhD</td>
<td>1977</td>
<td>Biomed. &amp; Environ. Health</td>
</tr>
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</table>

Current Positions
1995-present – UC, Berkeley School of Public Health EHS Division (Professor of Global Environmental Health)
UCB Graduate Group in Environmental Health Sciences (Chair)
UCB Graduate Program in Global Health and Environment (Director)
UCB/UCD/UCSF Center for Occupational & Environmental Health (Assoc. Director for Int’l Programs)

Current Professional Memberships & Affiliations
- American Association for the Advancement of Science
- Asian Society for Environmental Protection
- International Society of Exposure Science
- International Society of Indoor Air Quality & Climate

Selected Honors & Awards
2007- Elected member of US National Academy of Sciences
2009 - Mrigendra-Samjhana Medical Trust, Nepal Lifetime Achievement Award
2009- Heinz Prize in Environment
2010 - Vodafone Innovation Competition: Leader of First Prize Team
2010 - Sri Ramachandra University, Chennai, India Distinguished Visiting Professor
2011 - Indian Institute of Technology Delhi Golden Jubilee Lecture
2012 - The Tyler Prize for Environmental Achievement
2014- Haagen-Smit Clean Air Lifetime Achievement Award, California Air Resources Board

Recent Service on Scientific Advisory Boards
- IOM Roundtable on Environ Health Science, Research, and Medicine: 2015-;
- International Advisory Board, Duke Kunshan University, 2014-;
- Member, WHO Core Group, Indoor Air Quality Guidelines, 2006-2014;
- Chair, International Peer Review Panel, Peking University, 2013;
- Convening Lead Author, Health Chapter, Intergovernmental Panel on Climate - Change (IPCC), Fifth Assessment, 2010-2014, Chair, USNRC/NAS Com on Environ Exposure Sci for the 21st Century, 2010-14;
- Global Comparative Risk Assessment—three expert groups: Ambient air pollution, Household air pollution (chair); SH tobacco smoke 2007-2012;
- Member, Board on Atmospheric Sciences and Climate, NRC/NAS, 2008-2012

Selected Recent Publications
Name: Martyn Smith
Position Title(s): Professor of Toxicology

EDUCATION/TRAINING

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
</tr>
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<tbody>
<tr>
<td>U. of London, England</td>
<td>BS</td>
<td>1977</td>
<td>Biology</td>
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<tr>
<td>Medical College of Saint Bartholomew’s Hospital</td>
<td>PhD</td>
<td>1980</td>
<td>Biochemistry</td>
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</table>

Positions
1992-present - UC, Berkeley School of Public Health EHS Division (Professor of Toxicology)
1987-present - UC, Berkeley School of Public Health NIEHS Superfund Basic Research Program (Director)
2011-present - UC, Berkeley Graduate Group in Molecular Toxicology (Chair)
2012-2014 - UC, Berkeley School of Public Health Berkeley Institute of the Environment (Director)

Current Professional Memberships & Affiliations
- Genetic and Environmental Toxicology Association (GETA) of Northern California
- Society of Toxicology (SOT)
- American Association for Cancer Research (AACR)
- American Association for the Advancement of Science (AAAS)
- American Society of Hematology (ASH)
- Environmental Mutagen Society (EMS)

Recent Honors & Awards
- 2010 - Collegium Ramazzini (Elected Fellow)
- 2014 - Environmental Mutagenesis and Genomics Society Alexander Hollaender Award
- 2014 - American Chemical Society Division of Chemical Toxicology Keynote Address Award

Service
- 2009-present - MRC-HPA Centre for Environment & Health at the University of London (Advisory Board)
- 2010-2014 - International Agency for Research on Cancer, Lyon, France (Scientific Advisory Board)
- 2012 - MRC-NIHR National Phenome Centre, University of London (Advisory Board)

Recent Publications
Name: Sokal-Gutierrez, Karen
Position Title(s): Clinical Professor, UCB-UCSF Joint Medical Program

EDUCATION/TRAINING

<table>
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<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tr>
<td>Yale U., New Haven, CT</td>
<td>BS</td>
<td>1978</td>
<td>Biology</td>
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<tr>
<td>UC, San Francisco</td>
<td>MD</td>
<td>1985</td>
<td>Medicine</td>
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<tr>
<td>UC, Berkeley</td>
<td>MPH</td>
<td>1988</td>
<td>Preventive Medicine &amp; PH</td>
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</table>

Positions
2002-present - UC, Berkeley SPH UCB-UCSF Joint Medical Program (Clinical Professor); Health Research for Action Center (Researcher)

Current Professional Memberships & Affiliations
- Board Certification, American Board of Preventive Medicine
- Specialty Fellowship, American Academy of Pediatrics
- American Academy of Pediatrics: Section on Community Pediatrics, Section on Early Education and Child Care, Section on Oral Health, Section on International Child Health.

Recent Honors & Awards
2012 - UC Berkeley-UCSF Joint Medical Program “Sonrisa” Award for Teaching and Mentorship
2014 - UCSF School of Dentistry Faculty Award for Achievement in Global Oral Health
2014 - UC Berkeley How Students Learn Fellowship
2014 - Jewish Women’s Foundation of New York, Isha Koach award
2014, 2015 - UC Berkeley School of Public Health, Committee on Teaching Excellence Award

Service
- Consortium of Universities of Global Health, Oral Health Special Interest Group, Executive Committee
- Reviewer: The Lancet; Pediatrics; Journal of Developmental and Behavioral Pediatrics; Journal of Health Care for the Poor and Undererved; BMC Pregnancy and Childbirth; Maternal and Child Health Journal; BMC Oral Health; Community Dental Health Journal
- Alta Bates Summit Hospital Ethnic Health Institute: Advisory Board

Recent Publications
Name: Sarah Stanley
Position Title(s): Assistant Professor of Infectious Diseases & Immunity

EDUCATION/TRAINING

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>Trinity U, San Antonio, TX</td>
<td>BS</td>
<td>1997</td>
<td>Chemistry</td>
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<tr>
<td>UC, San Francisco</td>
<td>PhD</td>
<td>2006</td>
<td>Biomedical Sciences</td>
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Positions
2012-present - UC, Berkeley SPH Health Infectious Diseases & Vaccinology Division (Assistant Professor)

Recent Honors & Awards
2014 - Hellman Fellows Fund Award
2014-2017 - Searle Scholar Award

Service
2012-present - Infectious Diseases and Immunity Seminar Series (Organizer)
2013-present – UC, Berkeley Campus Radiation Safety Committee (Member)
2014 - UC, Berkeley School of Public Health Faculty Advisory Council (Member)
2014 - UC, Berkeley Searle Scholars Program (Proposal Reviewer)
2014 - UC, Berkeley MCB Faculty Search Committee for Director of Ctr. For Emerging & Neglected Diseases (Outside Member)

Recent Publications
- Braverman J, Sogi KM, Benjamin D, Nomura DK, Stanley SA. A feed forward loop linking nitric oxide, aerobic glycolysis, and HIF-1α amplifies macrophage activation and IFN-γ based control of M. tuberculosis infection. *Manuscript submitted.*
Name: Richard Stephens  
Position Title(s): Professor, Infectious Diseases & Vaccinology Division

EDUCATION/TRAINING

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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<tbody>
<tr>
<td>UC, Berkeley</td>
<td>BA</td>
<td>1971</td>
<td>Pathobiology</td>
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<tr>
<td>U. of Washington</td>
<td>MSPH</td>
<td>1981</td>
<td>Infectious Diseases</td>
</tr>
<tr>
<td>U. of Washington</td>
<td>PhD</td>
<td>1983</td>
<td></td>
</tr>
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</table>

Positions
2015-present – UC Graduate Division (Professor)  
1995-2015 - UC, Berkeley School of Public Health Infectious Diseases & Vaccinology Division (Professor) 
1997-present - UC, Berkeley Graduate Group in Infectious Diseases & Immunity (Chair)

Current Professional Memberships & Affiliations
American Association for the Advancement of Science (Fellow)  
American Society for Microbiology  
American Academy of Microbiology (Fellow)  
International Society for Chlamydia Disease Research  
American Sexually Transmitted Diseases Association

Service
1995-1999 - UC, Berkeley School of Public Health (Associate Dean)  
1996-2001 - UC, Berkeley School of Public Health DrPH Program (Director)  
1997-2015 - Sexually Transmitted Diseases (Editorial Board)  
1999-present - Cellular Microbiology (Founder & Editor-in-Chief)

Recent Publications


Name: Mark van der Laan
Position Title(s): Professor of Biostatistics and Statistics

EDUCATION/TRAINING

<table>
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<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
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</thead>
<tbody>
<tr>
<td>U. of Utrecht, Netherlands</td>
<td>MS</td>
<td>1990</td>
<td>Statistics</td>
</tr>
<tr>
<td>U. of Utrecht, Netherlands</td>
<td>PhD</td>
<td>1993</td>
<td>Statistics</td>
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</table>

Positions
2000-present - UCB School of Public Health & Department of Statistics (Professor of Biostatistics & Statistics)
2013-2018 - Sustainable East African Research in Community Health [SEARCH] (Investigator & Core Leader)

Current Professional Memberships & Affiliations
International Statistical Institute [ISI]
V.V.S. The Netherlands Society for Statistics and Operations Research
Bernoulli Society for Mathematical Statistics and Probability
American Statistical Association. [ASA]
Institute of Mathematical Statistics [IMS]

Recent Honors & Awards
2009 - Madison U. 10-th Annual Abbott Laboratories Distinguished Lectureship in Pharmaceutical Applications
2009 - Distinguished IMS Lecture Award

Service
2002-present - Statistical Applications in Genetics & Molecular Biology (Associate Editor)
2005-present - Statistics Survey (Associate Editor)
2007-present - Electronic Journal of Statistics (Associate Editor)
2013 - European Meeting of Statisticians Organizing Committee (Member)
2013 - Causal Inference Lake Tahoe Conference Organizing Committee (Member)
2014-present - Journal of Observational Studies (Associate Editor)

Recent Publications
- M.J. van der Laan, R.J.C.M. Starmans (2014), Special Invited Outlook article, ”En- tering the Era of Data Science: Targeted Learning and the Integration of Statistics and Computational Data Analysis,”, to appear in Advances in Statistics.
Name: Luoping Zhang  
Position Title(s): Adjunct Professor, Division of Environmental Health Sciences

### Education/Training

<table>
<thead>
<tr>
<th>Institution &amp; Location</th>
<th>Degree</th>
<th>Year</th>
<th>Field of Study</th>
</tr>
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<tbody>
<tr>
<td>Wuhan University, P.R.C</td>
<td>BS</td>
<td>1982</td>
<td>Physical Chemistry</td>
</tr>
<tr>
<td>Huazhong University, P.R.C</td>
<td>MS</td>
<td>1985</td>
<td>Biochemistry</td>
</tr>
<tr>
<td>Simon Frazier University, Canada</td>
<td>PhD</td>
<td>1993</td>
<td>Biochemical Toxicology</td>
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### Positions

2012-Present — UC Berkeley, SPH Environmental Health Sciences Division (Adjunct Professor & Researcher 4)

### Current Professional Memberships & Affiliations

- Society of Toxicology
- Northern California Society of Toxicology
- American Association of Chinese in Toxicology
- Environmental Mutagenesis and Genomics Society
- American Association for Cancer Research (Molecular Epidemiology Group Member)

### Recent Honors & Awards

- 2016 — Distinguished Chinese Toxicologist Lectureship Award
- 2015, 2014 — School of Public Health Award for Teaching Excellence Spring 2014
- 2000-Present — Huazhong University Honored Professor in the College of Life Science and Technology

### Service

- 2012-Present — OEHHA, CA EPA Carcinogen Identification Committee Gov. Brown Advisory Board Appointee
- 2012-Present — *Environmental and Molecular Mutagenesis* (Editorial Board)
- 2011-2013 — *Journal of Clinical Toxicology* (Editorial Board)
- 2011-2013 — Northern California Society of Toxicology (Board Member)

### Teaching

2007-Present —Practical Toxicology (PH 270C)

### Recent Publications


Appendix 15: Center for Public Health Leadership’s Community Partner Organizations
Internship Sites for the Past 3 Years
Total: 194
Note: Some sites had multiple interns over the 3 years.

Advancing New Standards in Reproductive Health (ANSIRH)
Alameda County Public Health Department
Alameda County Social Services/International Council on Clean Transportation
Alta Bates Medical Center
Alta Bates Medical Group
Alta Bates Summit Medical Center
Atkins Center for Weight and Health, University of California, Berkeley
Bavarian Nordic, Inc. Cancer Immunotherapy Division
Berkeley Media Studies Group
Best Babies Zone (Alameda County of Public Health Department/UC Berkeley)
Blue Shield of California
CA Center for Public Health Advocacy (CCPHA)
Cal EPA OEHHFA
Cal Poly San Luis Obispo
Cali Transplant Network
California Association of Public Hospitals
California Breast Cancer Research Program
California Coalition Against Sexual Assault (CALCASA)
California Department of Health Care Services
California Department of Public Health
California Department of Public Health Sexually Transmitted Disease Control Branch
California Department of Public Health-Office of Health Equity- Policy Unit
California Emerging Infections Program
California Food Policy Advocates
California Healthcare Safety Net Institute
California HIV/AIDS Research Program
California Newsreel
California Partnership to End Domestic Violence
California Perinatal Quality Care Collaborative, Stanford University
California Quality Collaborative
California WIC Association
Cancer Prevention Institute California
Cancer Prevention Institute of California (via MTPCCR)
Cardno ChemRisk
CDC Center for Global Health, Div HIV/AIDS
CDC Division of Global Migration and Quarantine
CDC-Division of Global Migration and Quarantine-US Mexico Unit
California Department of Public Health
CDPH Immunization Branch
CDPH TB Control Branch
CDPH Viral Hep program
CDPH: California Environmental Health Tracking Program
CDPH: Immunization Branch
CDPH: Infectious Diseases Branch, Disease Investigations Section
Kaiser Permanente: Regional Health Education
Kaiser Permanente-Northern California Region
Kuli Kuli
La Clinica de la Raza
Laraia Lab
Lawrence Berkeley National Lab
LifeLong Medical Care
Long Beach Fresh
Luna Maya Birth Center and Midwifery Institute
Manatt Health Solutions
March of Dimes-CA Chapter
Masonic Homes of California
Metabiota, Inc.
Mission Economic Development Agency (MEDA)
National Center for Youth Law
National Institute of Public Health in Mexico
National Resources Defense Council (NRDC)
National Rural Accountable Care Organization
Native American Health Center
Oakland School District Nutrition Services
OEHHA
One Heart World-Wide
Pacific Business Group on Health
Pader Girls Academy
Penumbra, Inc.
People's Relief
Philip R. Lee Institute for Health Policy Studies; UCSF
PINCC
Pivot LTD
Planned Parenthood Shasta Pacific
Policy Link
Prevention Institute
Public Health Foundation Enterprise
Public Health Institute-Champions for Change and Let Girls Lead
Public Health Research Institute, India
Public Science Project
QB3 Genetic Epidemiology and Genomics Lab (GEGL)
Raimi + Associates
RDA
Revolution Foods
Rona Consulting Group
Rutgers University Department of Human Ecology
Safeway Corporate Headquarters
San Francisco Department of Public Health
San Francisco Department of Public Health-Center for Learning & Innovation
San Francisco Department of Public Health-Community Health & Equity Promotion Branch, Community Transformation Initiative
San Francisco General Hospital
Appendix 16: Employment Report
171 students receiving graduate degrees from the School of Public Health in 2015 were asked to complete the online survey May – November 2015.

160 student surveys (94%) were completed for the following programs:

<table>
<thead>
<tr>
<th>Degree</th>
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**For SPH Staff & Faculty Use Only**

Compiled by: Ruthann M. Haffke
Career Services Manager
Email: haffke@berkeley.edu
Phone: 510-642-0431
Employment Plans

Not Seeking Employment

- I have secured FULL TIME employment: 58%
- I have secured PART TIME employment: 3%
- I am not currently seeking employment: 13%
- I am currently seeking employment: 15%
- I have secured SHORT TERM employment and continue to seek a permanent position: 11%

<table>
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<th>Not Seeking Employment</th>
<th>Degree Pursuing</th>
<th>Total</th>
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<td>Continuing education in medical school, law school, PhD program or other</td>
<td>PhD 7, RD 4, MD 3, DO 1, DrPH 1</td>
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Employment Sector for All Employed Respondents
(Full, Part, & Short Term Employment)

Health Care System (Hospital/HMO/Clinic) 34%
Research (University/Institute) 21%
Nonprofit (CBO, National Assoc., or NGO) 13%
Consulting Firm 9%
Private Corporation 6%
State Health Agency 6%
Federal Health Agency 3%
Industrial/Manufacturing 2%
County/City Health Agency 3%
Biotech/Pharma 2%
Government (except Health Agencies) 1%
Employment Sector for Employed MPH Only
(Full, Part, & Short Term Employment)

Health Care System (Hospital/HMO/Clinic) 39%
Nonprofit (CBO, National Assoc, or NGO) 16%
Research (University/Institute) 15%
Consulting Firm 9%
State Health Agency 5%
Federal Health Agency (3%)
County/City Health Agency (3%)
Biotech/Pharma (3%)
Industrial/Manufacturing (2%)
Government (except Health Agencies) (1%)
Private Corporation (4%)
Federal Health Agency (3%)
County/City Health Agency (3%)
Biotech/Pharma (3%)
Industrial/Manufacturing (2%)
Government (except Health Agencies) (1%)
Private Corporation (4%)
State Health Agency (5%)
Consulting Firm (9%)
Research (University/Institute) (15%)
Nonprofit (CBO, National Assoc, or NGO) (16%)
Health Care System (Hospital/HMO/Clinic) (39%)
Geographical Area Where Graduates Are Working

- San Francisco Bay Area: 75%
- Eastern US: 8%
- Northern California (except Bay Area): 5%
- Western US (except California): 5%
- Southern California: 2%
- International: 4%
- Midwest: 1%
Sector and Job Title Employment Summary

**Biotech/Pharmaceutical**
- Assistant Manager, Programmer
- Clinical Research Associate
- Outcomes Measurement Scientist

**Consulting Firm**
- Analyst
- Assistant Health Scientist
- Associate
- Consultant
- Environmental Scientist
- Owner
- Research Assistant
- Research Associate
- Senior Associate Health Scientist

**County/City Health Agency**
- Consultant
- Health Equity Coordinator
- Housing Policy Coordinator
- Program Evaluation Planner

**Federal Health Agency**
- Clinical Social Worker
- Global Health Fellow
- ORISE Fellow

**Health Care System (Hospital/HMO/Clinic)**
- Administrative Fellow
- Analyst
- Analyst, Informatics
- Analytic Consultant
- Consultant
- Delivery Science Research Fellow
- Evaluation Associate
- Infectious Disease Fellow
- Manager, Community Benefit & Emergency Management
- Manager, Medical Laboratory Science Program
- Medical Director
- Neonatologist
- Pediatric Clinical Dietitian
- Pediatric Emergency Physician
- Performance Improvement Lead
- Performance Improvement Project Manager
- Physician (2)
- Physician Community Health Liaison
- Physician Resident
- Planner
- Postdoctoral Fellow
- Postdoctoral Research Fellow
- Project Coordinator
- Project Manager
- Provider Services Representative
- Quality Consultant
- Sr. Manager Special Projects

**Industrial/Manufacturing**
- Associate HR Business Partner
- Industrial Hygienist

**Nonprofit (CBO, National Assoc, or NGO)**
- Collective Action Coordinator
- Consultant
- Course Instructor; Associate Fellow
- Program Associate
- Program Coordinator
- Project Coordinator
- Project Manager
- Research Associate
- Wellness Clinical Case Manager

**Private Corporation**
- Documentation Specialist
- Operations Manager
- Product Manager
- Scientist
- Statistician

**Research (University/Institute)**
- Analyst 2
- Assistant Adjunct Professor
- Assistant Clinical Professor
- Clinical Fellow
- EHS Specialist
- Health Economist
- Pathogen Detection Tech
- Postdoctoral Fellow (2)
- Postdoctoral Research Associate
- Postdoctoral Research Fellow
- Postdoctoral Researcher
- Postdoctoral Scholar
- Program Policy Analyst, Contractor
- Project Manager
- Research Assistant
- Research Associate
- Research Associate 2
- Researcher

**State Health Agency**
- Cal EIS Fellow
- CDC/CSTE Applied Epidemiology Fellow (2)
- Epidemiologist
- Physician
- Plan Manager
- Policy Unit Chief
Organizations Employing 2015 Graduates

Acerta Pharma B.V.
Alameda County Public Health Department
Analysis Group
Asian & Pacific Islander Wellness Center
Augmedix
Brown & Toland, Performance Improvement
California Dept of Public Health
California Department of Public Health, Office of Health Equity
California National Primate Research Center
Cardno ChemRisk
Castlight Health
Centers for Disease Control and Prevention
Central California Alliance for Health
Coastal Claim Consultants
Community Health Clinic Ole
Covered California
DaVita Kidney Care
D-tree International
First Five Fundamentals
Genentech
Gilead: Drug Safety Public Health division
GSI Environmental Inc.
H2O.ai.
Harder + Company
Harvard T.H. Chan School of Public Health
Hill Physicians Medical Group
Homeless Prenatal Program
Integrated Healthcare Association
Intel, Environmental Health & Safety
Josephine
Kaiser Permanente
Kaiser Permanente Division of Research
Kaiser Permanente Performance Excellence
Kaiser Permanente Quality and Operations Support
La Clinica de La Raza
LankaCorps
LBNL Life Sciences Division
Life Expectancy
North East Medical Services
Pandora, Ad Science
PolicyLink
Prevention Institute
Primary Children Hospital Inc
RTI International
Saint Francis Memorial Hospital
San Francisco Veteran's Affairs Medical Center
San Joaquin General Hospital
Sarah Samuels Center for Public Health Research and Evaluation
Seneca Family of Agencies
Stanford School of Medicine
Sutter Health
Tesla Motors
The David and Lucile Packard Foundation
The Permanente Medical Group
Tipping Point Community
UC Berkeley School of Optometry
UC Berkeley School of Public Health
UC Berkeley
UCSF
UCSF Philip R. Lee Institute for Health Policy Studies-Teen Pregnancy Prevention
United States Federal Government
University of Illinois at Urbana-Champaign
University of New Mexico Hospital
Vanderbilt University Medical Center
Virginia Department of Health
Women's Community Clinic
Salary Information

Annual Salary for 2015 MPH graduates that are employed full-time

Average Salary $67,358  
Median Salary $60,500

$40,000-49,000 = 8%  
$50,000-59,000 = 21%  
$60,000-69,000 = 29%  
$70,000-79,000 = 21%  
$80,000-89,000 = 13%  
*$100,000-125,000 = 8%

*Typically those included in the $100,000+ grouping are MPH graduates with medical or other advanced degrees and/or significant prior work experience.

Annual Salary for 2015 Doctoral graduates that are employed full-time

Average Salary $102,833  
Median Salary $107,500

$50,000-$59,000 = 16%  
$70,000-79,000 = 16%  
$80,000-89,000 = 16%  
$100,000-140,000 = 50%
I am currently seeking employment

I have secured FULL TIME employment

I have secured PART TIME employment

I have secured SHORT TERM employment and continue to seek a permanent position
Employment Sector of Interest for “Still Seeking” Respondents

- County/City Health Agency: 20%
- Nonprofit (CBO, National Assoc, or NGO): 20%
- Research (University/Institute): 18%
- Global Health Organization: 16%
- Consulting Firm: 5%
- Education: 5%
- Private Corporation: 5%
- State Health Agency: 5%
- Health Care System (Hospital/HMO/Clinic): 2%
- Biotech/Pharma: 2%
- Government (except Health Agencies): 2%
- Biotech/Pharma: 2%
- Health Care System (Hospital/HMO/Clinic): 2%
Career Services Feedback

- Ruthann and Audrey have seriously been LIFESAVERS. They've been critical to my satisfaction with the professional development offered at SPH -- THANK YOU!
- RuthAnn was really helpful throughout my journey to a new career. The tools she used as well as the questions she asked helped me narrow down what I wanted to do and what I would be good at doing. I'm looking forward to a long career in public health.
- Grow contacts outside of traditional public health orgs!
- Great work! Are there any resources/opportunities to meet with Ruthann after graduation?
- Ruthann was effective at helping me polish my resume, even though it ultimately was not key to getting my job(s). Overall, I had a great experience with her and highly recommend her.
- Ruthann is truly wonderful at her job and I am so grateful for her assistance.
- I didn't seek this job. They called me and offered it. All based on the internship I did there. Pretty awesome.
- Ruthann's services were terrific..
- Ruthann was very helpful in crafting my resume to be ready for internship applications!
- Having information about negotiating salaries/benefits sooner than the last semester would have been helpful. I didn't realize until it was too late that Ruthann would be available for us as soon as we had a job offer to help us with negotiations.
- I used the information from career services and negotiation sessions to carve out time from my clinical duties to focus on community needs assessment and program development with my current employer as I transition to a full-time non-clinical position over the next 2 years
- Ruthann was extremely helpful and supportive when I was applying for new jobs. She encouraged me to reach out directly to PI's who had open RA positions on their teams, and helped me draft better resumes and cover letters.
- Ruthann is really helpful! I especially appreciated one-on-one meetings and SPH job club
- Job club was very informative and helpful
- It would be great if career services had more resources in the startup/technology space. Companies like ginger.io and Josephine are doing exciting and innovative things and I think all SPH students could benefit from having more resources about non-traditional public health career paths.
- The Career Center and Ruthann in particular have been a very important resource for me in the past year. I have gotten excellent advice and my time getting counseling from Ruthann has been priceless. I wish they had more resources for more students to get these services.
- Ruthann has been super helpful in processing work opportunities, next steps, goals, negotiating, etc.
Appendix 17: URM Acceptance and Matriculation Rates by Program (Fall 2015)
Acronyms: MCH (Maternal and Child Health), Epi/Bio (Epidemiology/Biostatistics), EHS (Environmental Health Sciences), Interd. (Interdisciplinary), IDV (Infectious Diseases and Vaccinology), HSB (Health and Social Behavior), HPM (Health and Policy Management), DrPH (Doctor of Public Health)