Areas of Study

INTERDISCIPLINARY (MPH)

INTERDISCIPLINARY

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OVERVIEW

The Interdisciplinary MPH is an accelerated, 11-month program designed to meet the needs of mature scholars with diverse cultural and professional backgrounds who have specific public health career goals in mind. The program focuses on an interdisciplinary understanding of complex issues and the leadership challenges of successful interventions in public health. Graduates leave as well-rounded public health professionals with a heightened understanding of the importance of a multidisciplinary approach to public health practice.

The class size ranges between 15 and 25. Originally dominated by mid-career physicians, the program now accepts senior medical students, residents, and fellows. In addition, we also actively recruit applicants with a range of professional background who hold a master's degree or the equivalent, and who have significant health care experience or interest in public health. Applicants from the fields of journalism, business, social work, anthropology, economics, law, and others are encouraged if their future career paths include public health activities and/or significant interaction with public health systems.

The Interdisciplinary Program's curricular flexibility allows successful applicants, in consultation with their faculty advisers, to develop an individualized course of study tailored to meet their needs. In addition to the required courses at the School of Public Health, elective courses may be chosen from any of the academic offerings across the Berkeley campus. A mentored MPH project, to be conducted throughout the year, is required for completion of the program.

MISSION

The mission of the 11-month program is to offer our students the opportunity to gain a professional skillset that will allow them to take on the most pressing public health challenges. These skills will be taught in required courses, electives, and small group seminars that run throughout the year. The goal is for students to apply these skills as they develop, implement, and disseminate a final MPH project. The Interdisciplinary Program core faculty are committed to student success during the year and after graduation.

CORE COMPETENCIES

Evidence and Knowledge

Apply evidence-based principles and existing knowledge to critical evaluation and decision-making in public health.

1. Correctly use and define basic epidemiology terms.
2. Discuss concepts of prevention at all levels, including health promotion, screening, and vaccination.
3. Demonstrate knowledge of the biological basis of health and disease.
4. Critically evaluate the strengths & limitations of published studies and epidemiologic reports.
5. Demonstrate knowledge of the major causes and trends of morbidity and mortality in the United States.

Research

Design a research study related to public health.

6. State a public health problem and formulate a research question and hypothesis.

7. Identify appropriate data sources for the purpose of describing a public health problem.
8. 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.
9. Explain and choose appropriate statistical tests when addressing a research question using data.
10. 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.

11. Explain ethical concepts in health care, public health policy, and public health research, including the obligation to respect each individual's autonomy.
12. Identify social determinants of health.
13. 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).
14. Explain how to develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served.
15. Understand and identify the interpersonal power dynamics that exist in our relationships with populations we study, research, and serve.
16. Be able to listen, learn, and engage respectfully with the values and priorities of communities and individuals that are different from our own.

Community Engagement and Intervention
Identify and engage critical stakeholders for the planning, implementation and evaluation of public health programs, policies and interventions.

17. Define a public health problem and develop an appropriate project to address the problem.
18. Compare and contrast approaches at various levels (intrapersonal, interpersonal, organizational, community, societal, etc.) to improve a public health problem.
19. 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
20. Know how to plan, execute, monitor and evaluate projects, including creating and staying within timelines and budgets.

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.

21. Demonstrate interpersonal skills and self-awareness to cultivate inclusive environments and establish and sustain professional relationships.
22. Demonstrate ability to work in a collaborative manner in a team setting.

23. Demonstrate initiative, strategic thinking, and problem solving skills.
24. Apply systems thinking tools to a public health issue.
25. 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.
26. Effectively lead meetings and demonstrate group facilitation skills.
27. Demonstrate professional quality presentation and group facilitation skills, and effective call to action.
28. Communicate effectively verbally and in writing with a wide range of people in varying positions and organizations.

Health Policy Analysis

Understand the role that major systems and policies play in population health and healthcare.

29. Describe the policymaking process and the respective roles of government and markets in influencing health and healthcare.

Program-Specific Competencies for the INTERDISCIPLINARY PROGRAM

30. Successfully complete the application process for IRB Human Subjects approval and/or waiver.
31. Demonstrate the skills needed for effective scientific presentations.
32. Demonstrate the skills needed for effective media advocacy.
33. Demonstrate the skills needed for effective on camera communication.
34. Apply the skills for effective community engagement.
35. Describe principles of design thinking approaches to public health.

LEARNING OBJECTIVES

By the end of the year-long Interdisciplinary Program Seminar, students will be able to:

- Design and implement a project to address a current public health challenge
  - Complete a comprehensive literature review on a defined public health topic, including synthesis of themes and findings across multiple studies.
  - Research best practice models to inform project design.
  - Develop clear, measurable, time-specific project objectives.
  - Learn about the fundamental principles of ethics in public health research.
  - Successfully complete the application process for IRB Human Subjects approval and/or waiver.
  - Formulate a research plan, including determination and application of appropriate research methods (quantitative, qualitative or mixed).
  - Develop and ensure the implementation of sustainability and/or replicability plans. Develop and implement project dissemination plans to ensure communication of results with all project stakeholders and with public health community.
- Partner effectively and ethically with community-based organizations and/or agencies.
  - Identify public health organizations and agencies whose mission intersects with project work.
  - Assess potential for substantive community partnership.
  - Describe and apply CDC Principles of Community Engagement.
  - Develop work plans with community partners to ensure clear communication and mutual benefit.

- Gain public health knowledge and skills to enhance professional practice.
  - Understand and apply basic framework for cost-effectiveness analysis.
  - Identify public health funders and write competitive grant proposals, letters of intent and comprehensive budgets.
  - Understand and apply basic framework for conducting policy reviews.
  - Develop skills to improve scientific writing for peer-reviewed publications.
- Integrate learning across the MPH program.
  - Actively synthesize and reflect on course and project work across the MPH program to inform future career.
  - Access mentors, advisers and public health peers for support, troubleshooting and identification of useful resources.
- Fill leadership rules and lead inter-professional education.
  - Learn effective leadership skills including facilitation, mediation, decision making, delegation, effective feedback, and systems thinking.
  - Learn and apply skills needed to work in inter-professional teams effectively.
  - Learn and apply skills needed for effective scientific presentations and media advocacy, including on-camera communication skills.

II. Interdisciplinary Curriculum

CURRICULUM REQUIREMENTS

Students in the Interdisciplinary MPH program are required to complete 42 semester units of course credit between July and May. Students take a heavy course load (17-19 units per semester), in addition to one or two summer courses (3-8 units in order to satisfy the 42 unit requirement.) Consequently, students should not plan to work during the fall and spring semesters, and should make every effort to minimize work-related responsibilities while at school.

We strongly advise students to enroll in the six-week Summer Session courses on Epidemiologic Methods (PB HLTH 250A) and/or the Introduction to Biostatistics (PB HLTH 141). This will reduce their course load to manageable levels in the fall and spring semesters. Students with previous biostatistics or epidemiology experience may take both summer courses provided that they can make a full-time commitment to coursework beginning in early July. Students who have taken rigorous or advanced epidemiology or biostatistics in the past are encouraged to take the exemption exams in epidemiology and biostatistics in late August. Passing out of a course, however, does not decrease the 42-unit requirement for graduation.

Students are required to attend a one-unit Interdisciplinary Summer Seminar, during which they will begin to develop ideas for their year-long MPH project. The course number is PB HLTH 292 (1). Students should enroll in this course for one unit with the S/U grading option.

The Interdisciplinary MPH core requirements consist of six courses totaling 23 units. These include:

Biostatistics

PB HLTH 141, or PB HLTH 142, or PB HLTH 245, or PB HLTH 252 (4-5 units)

There are several ways to satisfy the Biostatistics requirement:

1. Take PB HLTH 141 (Intro to Biostatistics) in the summer (strongly recommended);

2. Take PB HLTH 142 (Intro to Biostatistics) in the fall;
3. Take PB HLTH 245 (Intro to Multivariate Statistics) in the fall;
4. Take PB HLTH 252 (Epidemiological Analysis) in the spring
5. Take and pass the Biostatistics exemption exam during welcome week before the fall semester begins.

NOTE: If passing the exception exam, a total of 42 units is still required for graduation.

Epidemiology
PB HLTH 250A or PB HLTH 250B (3 units)

There are several ways to satisfy the Epidemiology requirement:

1. Take PB HLTH 250A (Epidemiological Methods I) in the summer (strongly recommended) or Fall;
2. Take PB HLTH 250B (Epidemiological Methods II) in the fall.
3. Take and pass the epidemiology exemption exam during welcome week before the fall semester begins.

NOTE: If passing the exception exam, a total of 42 units is still required for graduation.

Breadth courses

PB HLTH 200J	Health Policy and Management (2 units): offered in the first half of the fall semester
PB HLTH 200K	Environmental Health Sciences (2 units): offered in the second half of the fall semester
PB HLTH 200L	Health and Social Behavior (2 units): offered in spring

Interdisciplinary Program Seminar Series

PB HLTH 292.1	Summer Interdisciplinary Seminar (1 unit)
PB HLTH 292.12	Fall Interdisciplinary Seminar (4 units)
PB HLTH 292.7	Spring Interdisciplinary Seminar (4 units)

The full-year course is designed to enhance knowledge and practical skills and provide guidance and mentorship in the development and implementation of the culmination MPH Project. The oral presentation and written paper for the MPH project satisfy the Public Health Practice and Comprehensive Examination requirements for the degree.

We also strongly recommend that in Spring you take PH 291, the Preparation for Public Health Practice Workshop Series, a one unit course offered by the Center for Public Health Practice & Leadership with a S/U grading option only.

The remaining 19-20 units are available for electives that may be used to customize a curriculum that fits your career-building needs.

1-YEAR MPH CURRICULUM
The curriculum for the Interdisciplinary MPH program is an intensive, full-time program. The 42-unit program requires completion of at least 17 units of coursework in each of the fall and

spring semesters. In order to meet the 42-unit requirement, students are also expected to enroll in the Summer Session prior to the Fall semester in which they enter the program. Up to four units from previously completed graduate coursework may also be applied towards the 42 units, subject to 'rules for transfer units' and approval from Graduate Division. Curricular requirements are summarized below. The one-year program also requires completion of a research project (this is an MPH Project, not a thesis). Projects may take a variety of forms including community-based projects, research studies, needs assessments, program evaluations, analyses of secondary data, or policy analyses. Projects are presented at the end of the spring semester in written and oral formats and fulfill the School of Public Health Comprehensive Exam requirement.

1-YEAR SAMPLE SCHEDULE

Recommended 1-year Interdisciplinary Course Selection (all must be taken for a letter grade except where noted.)

Summer Semester		**Units**
PB HLTH 250A	Epidemiological Methods	3
PB HLTH 141	Introduction to Biostatistics	5
PB HLTH 293	Summer Interdisciplinary Seminar (S/U grading option only)	1
Fall Semester		**Units**
PB HLTH 142	Intro to Probability & Statistics in Biology & PH (if summer PH141 not taken)	4
PB HLTH 200J	Health Policy and Management Breadth Course (half semester)	2
PB HLTH 200K	Environmental Health Sciences Breadth Course (half semester)	3
PB HLTH 292(12)	Interdisciplinary Seminar	3
PB HLTH 250A	Epidemiologic Methods I	3
or PB HLTH 250B	Epidemiologic Methods II (Note: PB HLTH 250A and/or 250B not needed if PB HLTH 250A was taken in summer)	4
PB HLTH 2XX	Electives (to be chosen by student)*	5-8
Spring Semester		**Units**
PB HLTH 292(7)	Interdisciplinary Seminar	4
PB HLTH 200L	Health and Social Behavior Breadth Course	2
PB HLTH 291A	Preparation for Public Health Practice Workshop Series (S/U grading option only) (*PH 291A is not required but is highly recommended*)	1
PB HLTH 2XX	Electives (to be chosen by student)*	5-8

*Electives are chosen in collaboration with Faculty Adviser, customized to provide the skills for each student's desired career path. Students must have approval of their Faculty Adviser for elective courses taken outside the School of Public Health.

NOTE: There are no restrictions on where you take your electives as long as they are on the Berkeley campus. You can take electives in other UC Berkeley schools and departments such as Business, Public Policy, Demography, Anthropology, or any other department subject, to approval from that department and from the student's faculty adviser. A limited number of electives for your upper division undergraduate students may also be taken (PB HLTH 100-109 courses).

III. Interdisciplinary Capstone

COMPREHENSIVE EXAM

The Interdisciplinary Program Project spans eleven months and fulfills the School of Public Health's Master-level requirement for a practicum or field experience. The culminating assignments—an oral presentation to peers and colleagues, and a final project report worthy of publication—serve as the oral and written components of the comprehensive examination required for graduation. Please review the following guidelines carefully to ensure that you meet all requirements.

Oral Presentation Guidelines

Your oral presentation serves as the oral component of your comprehensive examination required for graduation. The presentation should describe what your project is designed to deliver and the outcomes you anticipate or hypothesize. Make sure to present your data, even if you have not completed the analysis. *If your data gathering and analysis is not complete at the time of your oral presentation date, don't worry. You may call it a "work in progress."*

The oral presentation is not supposed to be a presentation of the written paper; rather, it is a demonstration that affirms your understanding of PH investigative processes, the appropriate use of statistical tools, and your ability to present. Presentations should include the following elements:

- Project selection
- Project rationale and public health significance
- Overall project goal(s)
- Project objectives and how they address the stated goal(s)
- Study design and how/why you arrived at it
- Statistical analysis process
- Results - real or hypothesized, depending on your progress at the time of presentation
- Project impact: What is the relevance of this work in the bigger picture? Has it, or will it actually affect the lives of the people whose needs you sought to address?
- Plans for project sustainability and dissemination
- Project limitations and changes you would make if you had the opportunity to start over

Final Report Guidelines

The written final report fulfills the written comprehensive examination requirement for the MPH degree. This is an opportunity to demonstrate that you can apply knowledge and principles learned from your coursework in addressing a current public health challenge.

Your project paper should be in publishable condition with respect to spelling, grammar, and organization.

- Please use the following format:
  - Introduction (background/ situational analysis) - should include your literature review, a statement as to why the problem addressed in your project is significant for public health, and a statement about how the objectives for the project address that problem
  - Methods - should describe how you approached the problem, any community partners you worked with, and any barriers to completing the work
  - Results - should describe your findings and their reliability (your statistical analysis)
  - Discussion - should go into detail about challenges and limitations, the importance of your findings, and lessons learned
  - Recommendations - based on your work, what further actions would you recommend to address this problem? How might your findings be implemented on a larger scale?
- Length and format: 25 pages minimum, double spaced, INCLUDING tables, graphs, references, and appendices.
- Check out "Instructions for Authors" in the *American Journal of Public Health* for information on formatting references, tables, and graph headings.
- For citations and references, please use AMA style.