“Ray, there’s an outbreak in Panama, and we need you to fly there tomorrow,” my supervisor said on my fourth day working with the CDC’s Epidemic Intelligence Service (EIS).

I had just started the EIS’ two-year, applied public health fellowship. Now I found myself on a plane to Panama, where I would help stop an outbreak of antibiotic-resistant bacteria that was killing dozens of people in the country’s largest hospital.

My path to the CDC and the Epidemic Intelligence Service (EIS) began when I took Art Reingold’s outbreak investigation seminar at Cal. I remember seeing a picture of Professor Reingold, trekking in the Nepalese mountains, wearing a grizzled beard and carrying a backpack full of smallpox vaccine in the late 1970s. Professor Reingold was an EIS officer, and he ended up playing a key role in smallpox eradication — one of the world’s great public health victories. After class, I remember saying to my partner, Rachel Smith (Maternal and Child Health MPH ’07): “Let’s do that EIS thing someday.”

After completing our residencies in Internal Medicine at UCSF, Rachel and I were fortunate to both be accepted into the EIS program. Rachel joined the mycotic diseases branch and I joined the Division of Healthcare Quality Promotion, a group that tracks and prevents infections acquired in healthcare settings. Traditionally, we tend to associate emerging infectious diseases with zoonotic sources and tropical jungles. But we’re now also seeing dangerous antibiotic-resistant organisms, such as methicillin-resistant *Staphylococcus aureus* (MRSA), *Clostridium difficile*, and carbapenem-resistant enterobacteriaceae, in hospitals and even in surrounding communities.

While in the EIS, I investigated several outbreaks of new and emerging bacterial infections in adult and children’s hospitals, both domestically and abroad. I also helped investigate the largest tuberculosis outbreak in the U.S. over 20 years, and a fungal meningitis outbreak caused by contaminated spinal injections that...
sickened over 750 people in 20 states. My partner Rachel was an integral part of the meningitis outbreak investigation, and she was interviewed about it on NPR’s All Things Considered (http://www.npr.org/2012/10/11/162743655/cdc-estimates-14-000-got-infected-steroid-injections).

The most interesting pathogen is Clostridium difficile, a common bacteria found in the human intestine and whose growth is usually inhibited by other intestinal flora. Unfortunately, if you take a course of antibiotics, you may inadvertently destroy this intestinal flora, allowing C. difficile to over-grow and cause severe infections or even death. In our era of modern antibiotics, the incidence of C. difficile infections has skyrocketed and now kills up to 14,000 Americans annually. Specific antibiotics can eliminate C. difficile, but the disease often re-occurs. Recently, in a novel approach, clinicians discovered that replenishing the intestinal flora with fecal transplants (yes, you read that right) is remarkably effective for treating C. difficile infections. I always thought that the future of medicine would bring us fancy molecular or DNA treatments. Instead we have this!

Research into C. difficile has also spurred a growing interest in understanding the human microbiome. Researchers are just starting to uncover the effects of microorganisms in our bodies on normal development and the development of disease. For example, a study in Nature Medicine last month suggested that differences in stomach bacteria may partially explain why some people develop atherosclerosis while others don’t. This research has fascinating implications for the future of public health. I would encourage current students to take the lead in understanding and integrating this knowledge into the field!

The EIS provided me the opportunity to serve in the US Public Health Service (USPHS) — a service of healthcare professionals that includes many people who work at the CDC, FDA, and Indian Health Service. While I never considered myself the “military” type (and I still drive a Prius and subscribe to community-sponsored agriculture) I have come to appreciate the great sacrifices the people in uniform have made for our country.

I will be completing my EIS fellowship in the next month. Overall, it has been an incredible experience that has allowed me to serve others and to travel, learn, and lead through experience, contribute to scientific knowledge, and advance my career. The experience of helping hospitals solve outbreaks has helped me realize how much I miss being at the patient’s bedside. So my next career stop will be down the street at Emory University Hospital here in Atlanta, as an Assistant Professor of Medicine, splitting my time between clinical care, teaching, and research. My public health background will be put to great use helping prevent emerging infections in the hospital. I also hope to improve our ability to understand and protect the human microbiome in healthcare settings.
Last year I was working as a microbiologist in an alternative fuels company in San Diego, wanting to transition into public health — but I didn’t know where to start. After doing some research and talking to alumni from the School of Public Health program here at Berkeley, I decided to go back to school and get an MPH through a program that would allow me to explore different areas of public health. Berkeley’s Interdisciplinary Program was my number one choice because of the flexibility it offers.

I had never been to Berkeley before I moved to start school here. I decided to take a leap of faith, and found a lively city full of friendly people, beautiful green spaces and great places to eat. My experience here has been more than I could have hoped for. My classmates in the Interdisciplinary Program come from diverse backgrounds, and working with them in classes and projects has given me opportunities to learn and form new friendships. I’ve also been impressed by my professors. They are leaders in their fields, down to earth, and take genuine interest in mentoring students and helping them develop in their professional careers.

When I arrived at Berkeley, I knew I wanted to study health disparities in Latino Immigrant communities, and especially disparities in mental health service utilization. During summer school last year, my search for an M.P.H. project led me to the Multicultural Institute (MI), a community-based organization in Berkeley that serves Latino day laborers. With the help of MI’s Associate Director Dr. Paula Worby (an alumna of UC Berkeley School of Public Health), I am trying to identify the barriers day laborers face in trying to access mental health services in Oakland and Berkeley. I’m now wrapping up the project and I am eager to start analyzing the data I have been collecting during the past year.

My interest in public health has evolved into an interest in medicine. So, this summer I’m planning to apply to medical school with the goal of becoming a psychiatrist. More immediately, I am applying for jobs and internships to gain additional experience in the field of public health while I apply for medical school. I hope that my public health training here at Cal, combined with a medical degree, will give me the skills I need to help improve health care access for underserved communities in California.
I can trace my public health interests back to my adolescence in rural Oregon, where I early on could see how contraception influences women’s lives. I had a suspicion that the culture did not recognize adolescent sexuality as a normative part of the developmental process to be reinforced by responsibility. Sexuality was seen through a polarizing lens of risky consequences vs. abstinence. I saw this dynamic play out in my own circle of friends, whose lives took some dramatic turns as a result.

In the U.S., our reproductive health outcomes are on par with many low resource countries. More than half of all pregnancies (and 80% of teen pregnancies) are unintended. As a medical student, I was disturbed by the dearth of medical education curriculum related to unintended pregnancy—there was just one lecture on contraception and no education on abortion. Our medical system is adverse to controversy and remains fragmented when it comes to family planning. Far from being a seamless part of care for women, family planning has been traditionally marginalized.

I went into family medicine to provide a broad scope of care for underserved populations that could be applied in both the U.S. and internationally. For many women, family physicians are the first line of medical care. In my family medicine training, if my pregnant patients wanted to carry to term, I would care for them. But if they did not, I had to refer them to a specialist. I wondered what message this sends to women about abortion. Abortion is experienced by one in three women during their reproductive years. How does a woman know she can talk openly to a doctor in a system that is so polarized?

Provider shortages continue to be a problem, and over 85% of U.S. counties and 40% of California counties lack an advertised abortion provider. Improving this fragmentation could decrease delays and increase safety and continuity. And with the Affordable Care Act’s inclusion of contraception in preventive care, family physicians can now play a greater role in reproductive health.

In 2003, I was hired as the Director of Medical Education for the San Francisco-based Planned Parenthood affiliate. Planned Parenthood has initiated the Training, Education, and Community Health for Schools Program (TEACH) – an academic-community partnership whose goal is to expand reproductive health access for underserved populations by helping Family Medicine residencies integrate comprehensive reproductive health into their curricula and practice. Our objectives are to support routine training of 50 to 60 residents per year, create curricula to be used nationally, offer mentoring, advocacy, and leadership training for residents, and help graduates incorporate these services into their practices.

I love seeing how residents’ perspectives shift when they hear women’s stories, and how they are able to clarify their own values. One of my greatest pleasures has been hosting networking gatherings and introducing young doctors to the larger national network.

In the last decade, I helped spearhead changes to improve use of IUDs—one of our most convenient and effective contraceptive methods but with a low utilization rate. Hypothesizing that health care barriers to IUD insertion were central to this low utilization, I designed an intervention study to minimize barriers—including staff training, simplified screening, and same-day insertion. Results showed a multifold increase in utilization, with a dramatic decrease in repeat abortions among women who received immediate vs. delayed placement. The experience profoundly reinforced my thinking about proactive systems change, and led to my collaboration in a national controlled study in 40 U.S. family planning clinics, evaluating methods to improve use of long-acting methods.

In addition to my work with TEACH, I served from 2005-2007 as Training Director for the California Access through Primary Care Project (now HWPP #171), a California-based, multi-site study of advanced practice clinicians as providers of early aspiration abortion. Data show outcomes and safety comparable to physician providers—evidence that may help pave the way for regulatory change.

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Currently, I also serve as an investigator at Bixby Center for Global Reproductive Health, an Associate Clinical Professor for UCSF, a member of Planned Parenthood Federation of America’s National Medical Committee, and of the Residency Education Initiative’s National Advisory Committee (PRH).

I also still find time for international work – usually related to capacity-building and curriculum for reproductive health providers. This work, and my love of the wilderness, has brought me to Southeast Asia, Bangladesh, East Africa, the Balkans, Latin America and the Caribbean. It is so rewarding to see simple improvements save women’s lives. On some trips I’ve been fortunate to work with my husband, a neonatologist. He has artfully combined his passion for international health and building neonatal centers of excellence with teaching Aikido (the martial art of conflict resolution). We are excited to be returning to Ethiopia to work on parallel projects this fall.

My time in the Interdisciplinary MPH program could be described as “the planets aligning in my favor.” The knowledge and skills I’ve obtained have fit together beautifully for me. The most influential classes I took were been mHealth, Impact Evaluation and Designing Innovative Public Health Solutions (DIPHS) – and these two classes led to my MPH capstone project. Dr. Caricia Catalani gave me an opportunity to design an impact evaluation of a nationwide, interoperable electronic health system being rolled out in Rwanda. She has become my mentor, shares my passion for logic, problem-solving, human-centered design and technology, and has pushed me to step outside my comfort zone.

The DIPHS class led by Jaspal Sandhu and Nap Hosang introduced me to the design process and sparked my enthusiasm for innovation in public health and medicine. In my future work, I hope to apply the design process, use human-centered design and high-quality evaluation, and share some of the knowledge and insights I’ve gained from my MPH experience with future public health and health profession students.

I’m so glad that I took a chance and came to Berkeley. I’ve had a year with wonderful, smart, funny Interdisciplinary classmates, and I’ve rediscovered my passion!

In July, 2012, I quit my job, packed up my stuff, rented my house, put my essentials into a U-Haul trailer hitched to my car, and moved across the country with my dog. I left the 90-degree heat and humidity in Iowa to arrive in Berkeley where it was a lovely 74 degrees. This pleasant introduction foreshadowed the events of the next nine months.
4th Annual Alumni and Student Picnic

Hetty Eisenberg '09, Maisha Davis '14, Keith Hermanstyne '08, and Interim Program Director Phuoc Le '04, with daughter Anya

Angie Hoth '13, with her dog Jake

Madhavi Dandu '04 with daughter Nyara, and Geeta Mehta '04