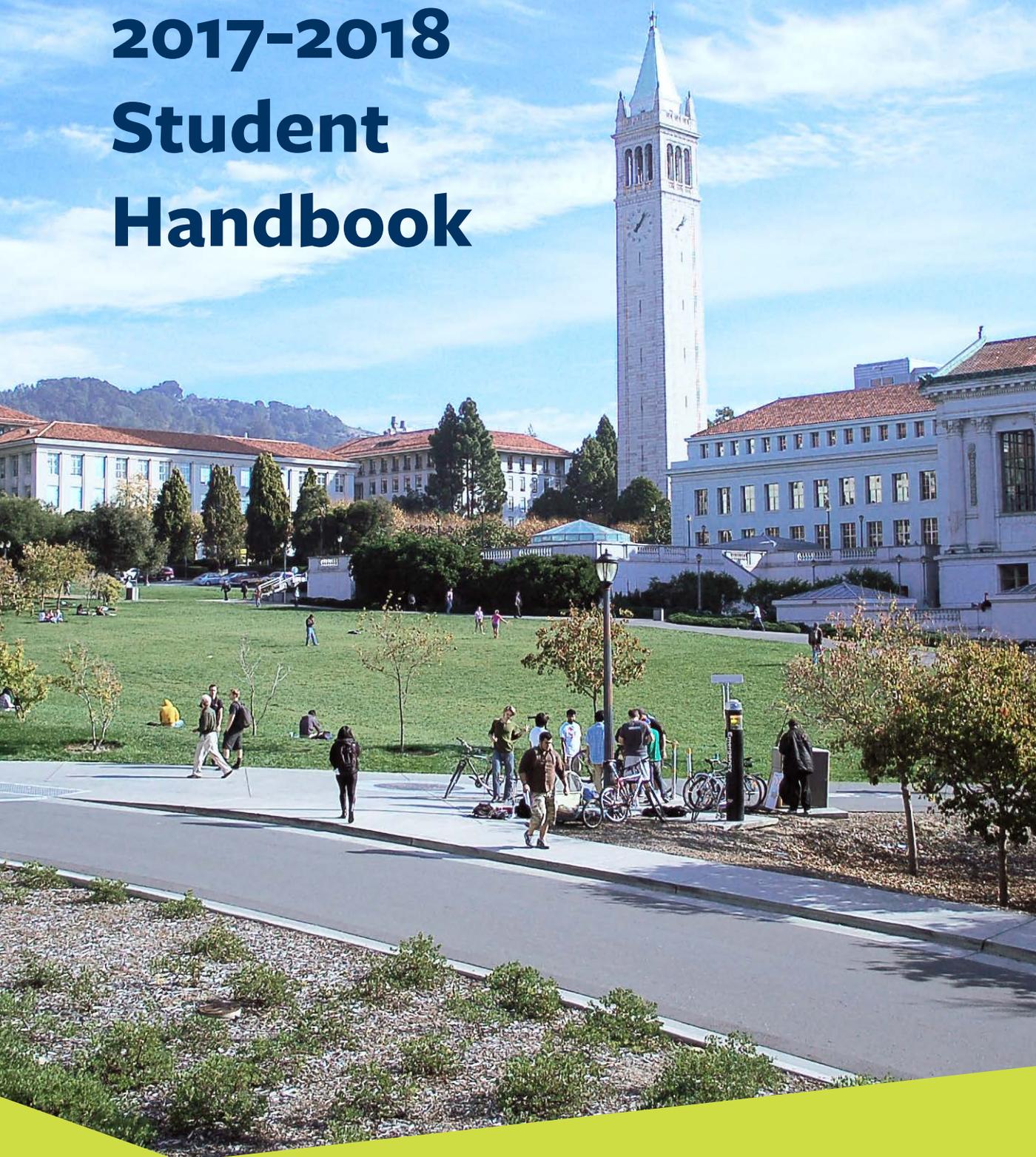


UC Berkeley  
School of Public Health

# 2017-2018 Student Handbook



August 2017

Dear Students,



Welcome to the start of a new year at the UC Berkeley School of Public Health! I hope that you take pride in being a part of a top-ranked school of public health, small in size but with a history of accomplishing big things. You are joining a community of dedicated health experts who are innovating and leading in their respective fields—every day they work toward transforming communities for better health, locally and globally.

I would like to call your attention to our core values that I hope will inspire you during your time at the School and beyond, as well as guide your interactions with each other and with faculty, staff, and the greater community.

**HEALTH AS A RIGHT:** We strive to eliminate inequities that impact the health and dignity of all people, especially those most vulnerable.

**STRENGTH THROUGH DIVERSITY:** We embrace our differences, seeing in them a path to stronger solutions for the communities we care about.

**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.

You are also joining our public health community at an exciting time for the School and the larger UC Berkeley community. In 2018, UC Berkeley is celebrating its sesquicentennial—150th anniversary—and the School of Public Health is also turning 75. We’re looking forward to honoring our past and celebrating our future, including you! Additionally the School will be moving into our new “Healthy Futures” building on Berkeley Way in mid-2018. We will be joining the Department of Psychology and the Graduate School of Education in this new space.

I hope that you are filled with enthusiasm for your studies and your future careers. The Bay Area is truly the world’s finest place for the cultivation of fresh new perspectives on the meaning of public health.

Sincerely,  
Stefano M. Bertozzi  
Dean

# TABLE OF CONTENTS

**WELCOME, INCOMING SCHOOL OF PUBLIC HEALTH STUDENTS!** We are happy to provide this 2017-2018 Student Handbook for your use. Our goal is to give you information that encompasses campus-level, school-wide, and degree program-specific policy and procedures in one place. This information will be regularly updated, but this document should be used as a first start to understanding how to navigate through your Berkeley experience. This handbook is a very interactive one. If you click on the Bookmarks tab, you can navigate directly to the various sections listed in the Table of Contents. When you click to an Area of Study, you will find a more detailed table of contents which will direct you to more specific information about each program. HAPPY READING!

## Information for All SPH Graduate Students

<a href="#">The School at a Glance</a>	<a href="#">4</a>	<a href="#">Fees, Bills, and Other Fiscal Matters</a>	<a href="#">35</a>
<a href="#">Staff and Faculty Directory</a>	<a href="#">8</a>	<a href="#">Teaching and Research Assistantships</a>	<a href="#">39</a>
<a href="#">Getting Started</a>	<a href="#">14</a>	<a href="#">School of Public Health Resources</a>	<a href="#">42</a>
<a href="#">Student Information Systems</a>	<a href="#">21</a>	<a href="#">Campus Resources</a>	<a href="#">46</a>
<a href="#">General Enrollment Information</a>	<a href="#">23</a>	<a href="#">Health and Wellness</a>	<a href="#">50</a>
<a href="#">University and School Policies</a>	<a href="#">26</a>	<a href="#">Academic Degree Planning</a>	<a href="#">54</a>
<a href="#">Student Records and Privacy</a>	<a href="#">30</a>	<a href="#">MPH Student Requirements</a>	<a href="#">60</a>
<a href="#">Grievance and Appeals Procedure</a>	<a href="#">32</a>		

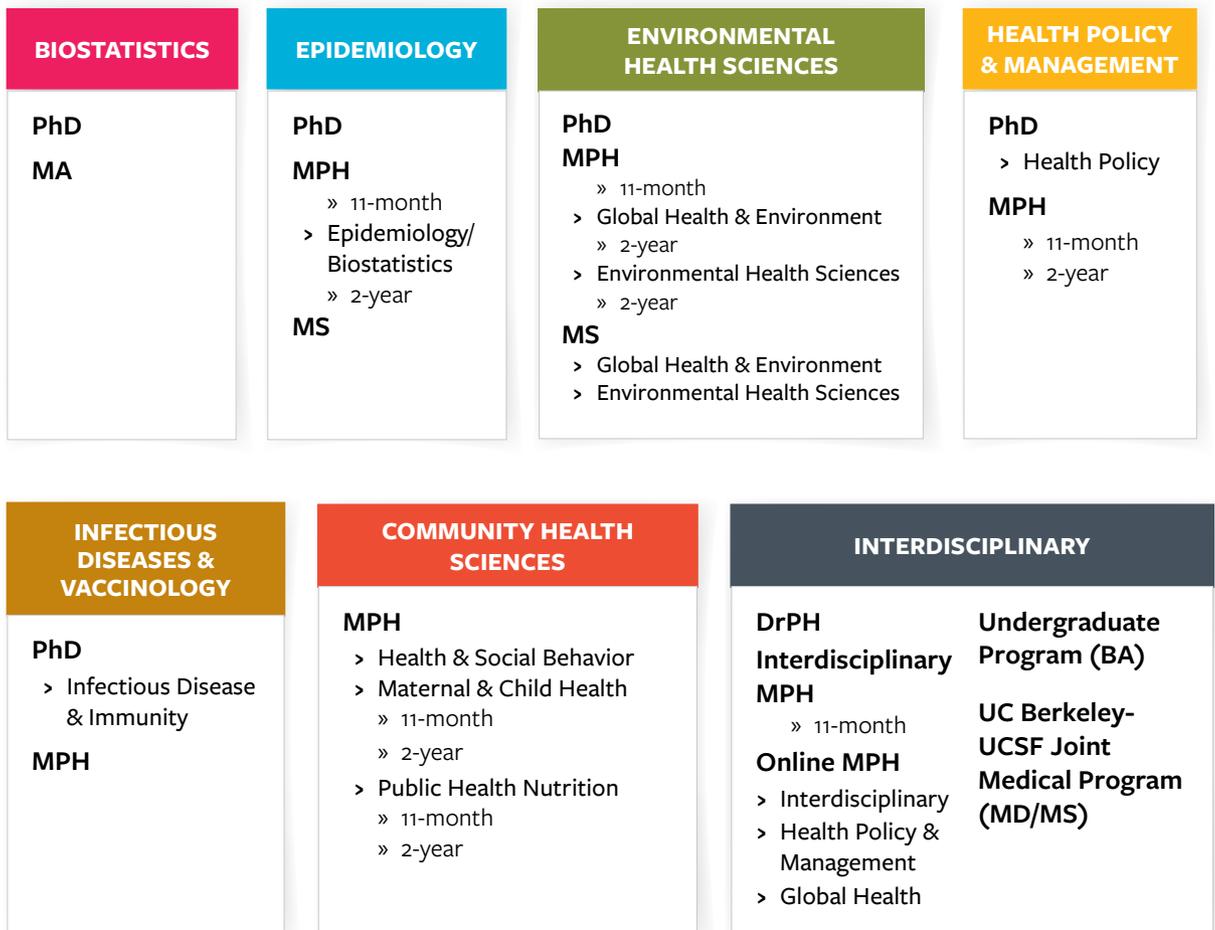
## Areas of Study

<a href="#">Biostatistics (MA, PhD)</a>	<a href="#">67</a>	<a href="#">Health Policy (PhD)</a>	<a href="#">167</a>
<a href="#">Doctor of Public Health (DrPH)</a>	<a href="#">75</a>	<a href="#">Infectious Diseases &amp; Vaccinology (MPH, PhD)</a>	<a href="#">187</a>
<a href="#">Environmental Health Sciences (MS, MPH, PhD)</a>	<a href="#">98</a>	<a href="#">Interdisciplinary (MPH)</a>	<a href="#">201</a>
<a href="#">Epidemiology (MPH, MS, PhD)</a>	<a href="#">124</a>	<a href="#">Maternal &amp; Child Health (MPH)</a>	<a href="#">211</a>
<a href="#">Epidemiology/Biostatistics (MPH)</a>	<a href="#">143</a>	<a href="#">Public Health Nutrition (MPH)</a>	<a href="#">219</a>
<a href="#">Health &amp; Social Behavior (MPH)</a>	<a href="#">150</a>	<a href="#">Thank You</a>	<a href="#">228</a>
<a href="#">Health Policy &amp; Management (MPH)</a>	<a href="#">156</a>		

# THE SCHOOL AT A GLANCE

## Our Structure and Size

The School of Public Health is organized into seven divisions. Five of them (Biostatistics, Epidemiology, Environmental Health Sciences, Health Policy & Management, and Infectious Diseases & Vaccinology) offer a range of eponymous graduate degree programs (master's and doctoral). The Community Health Sciences division houses master's programs in Public Health Nutrition, Maternal & Child Health, and Health & Social Behavior. The final Interdisciplinary division houses the undergraduate degree program, the Doctor of Public Health, the Online MPH, the Interdisciplinary MPH, concurrent MPH programs, and the Joint Medical Program, as well as the Center for Public Health Practice and Leadership. The figure below illustrates the variety of degree offerings at the School by division.



Unless otherwise indicated, the MPH is a 2-year program. In addition to the above programs, the School offers joint, concurrent, and dual degree programs for students who are interested in combining other fields and disciplines with their public health studies. These include partnerships with the Haas School of Business (MBA), the College of Environmental Design (MCP), the Graduate School of Journalism (MJ), the Goldman School of Public Policy (MPP), and the School of Social Welfare (MSW).

## Research Strengths

The School's vision for research focuses on solving the most pressing public health challenges, locally and globally. We demonstrate our commitment to maximum population health impact by focusing our research and service efforts in areas with the potential to have transformative impact on the health of populations, particularly among those most vulnerable. Many of our research initiatives are collaborative across the School, UC Berkeley, and other UC campuses. Our faculty members are leaders in their fields and their research efforts provide learning and enrichment opportunities for students. The School is focused on six core areas of research:

### Data and Technology

Emphasis on health data and how to best access and understand large and complex datasets.

### Disparities

We are invested in understanding the causes of and eliminating health disparities and inequality locally and globally.

### Environmental and Occupational Health

Our researchers and faculty are internationally recognized as leaders in the field of environmental and occupational health.



### Global Health

Our researchers are internationally recognized experts in basic and translational research occurring in the lab and in the field.

### Health Policy and Management

Many of our core research centers are committed to improving our health care systems in California and nationwide.

### Maternal, Child, & Adolescent Health and Nutrition

We envision a world where all children have the opportunity to be born healthy, grow healthy, and reach their fullest potential.

## Research Centers

The School of Public Health houses many interdisciplinary research centers, which provide rich opportunities for faculty collaboration and graduate student mentoring and training. See the table below. (Some centers are listed more than one area.)

### Data and Technology

- » Berkeley Center for Health Technology
- » Center for Targeted Machine Learning

### Disparities

- » Innovations for Youth
- » Health Initiative of the Americas
- » Bixby Center for Population, Health, and Sustainability
- » Health Research for Action
- » Center for Global Public Health
- » Center for Environmental Research and Children's Health

### Environmental and Occupational Health

- » Labor Occupational Health Program
- » Center for Occupational & Environmental Health
- » Center for Environmental Research and Children's Health
- » Center for Integrative Research on Childhood Leukemia and the Environment
- » Children's Health and Air Pollution Study
- » UC Berkeley Superfund Research Program

### Global Health

- » Center for Global Public Health
- » Bixby Center for Population, Health, and Sustainability
- » The Oasis Initiative
- » Health Initiative of the Americas
- » Institute for Global Health Delivery and Diplomacy

### Health Policy and Management

- » Berkeley Center for Health Technology
- » Center for Health Care Organizational and Innovation Research
- » Center for Lean Engagement and Research in Healthcare
- » Petris Center on Health Care Markets & Consumer Welfare
- » California Program on Access to Care
- » Forum for Collaborative Research/ Center to Advance Science in Policy and Regulation
- » Center on the Economics and Demographics of Aging
- » Health Initiative of the Americas
- » Health Research for Action

### Maternal, Child, & Adolescent Health and Nutrition

- » Innovations For Youth
- » Bixby Center for Population, Health, and Sustainability
- » The Oasis Initiative
- » The Wallace Maternal and Child Health Center
- » Center for Environmental Research and Children's Health
- » Berkeley Food Institute

### Outreach and Training

- » Labor Occupational Health Program
- » Health Research for Action
- » Right Care Initiative
- » California Program on Access to Care
- » Health Initiative of the Americas
- » Safe Transportation Research and Education Center
- » Forum for Collaborative Research/Center to Advance Science in Policy and Regulation

## Your Cohort

For the incoming cohort of Fall 2017, we are excited to welcome 217 graduate students. Here is the breakdown by degree program.

10	Biostatistics MA	4	Biostatistics PhD	6	Doctor of Public Health
11	Environmental Health Sciences MPH	4	Environmental Health Sciences MS	2	Environmental Health Sciences PhD
9	Epidemiology MPH	1	Epidemiology MS	9	Epidemiology PhD
15	Epidemiology/Biostatistics MPH	24	Health & Social Behavior MPH	26	Health Policy & Management MPH
4	Health Policy PhD	2	Infectious Diseases & Immunity PhD	15	Infectious Diseases & Vaccinology MPH
		15	Interdisciplinary MPH	17	Maternal & Child Health MPH
		13	Public Health Nutrition MPH	30	Online MPH

**TOTAL**

**217**

# STAFF AND FACULTY DIRECTORY

During your time at the School, you will hear many terms being used to describe important faculty and staff roles. Here is what a few of them mean. Every degree program in the school has a Program Chair (also known as a Faculty Director, Program Director, or Program Head.) These faculty members are responsible for providing overall direction for their programs, maintaining their quality, and overseeing the academic advising of graduate students. They are the official deputies appointed by the Dean of the Graduate Division to act in matters affecting graduate students in their programs. For academic programs (MA, MS, and PhD), the Program Chair is often also the Head Graduate Adviser, a tenured faculty member who can sign documents or make requests to the Graduate Division on matters concerning graduate enrollment, degrees, progress, and financial aid, such as admission, reenrollment, change or addition of major, graduate standing, and appointment of Qualifying Examination and dissertation committees. For the DrPH and MPH programs, the Head Graduate Adviser is the Associate Dean of Education, Equity, and Inclusion.

The Faculty Adviser for GSI Affairs functions as a liaison among the Graduate Division, program faculty, and GSIs; provides information concerning policies relating to GSIs to faculty and GSIs in the program; and raises issues on their behalf with the administration. Each academic program has an Equity Adviser that is different from the Program Chair whose role is to ensure that diversity is taken into account in the recruitment, selection, and retention of graduate students. For the DrPH and MPH programs, the Head Equity Adviser is again the Associate Dean of Education, Equity, and Inclusion.

Each degree program also has a Graduate Student Affairs Officer (also known as a Program Manager). GSAOs are program staff members who are responsible for the administrative advising of graduate students. They manage the student life cycle from recruitment to graduation; stay abreast of admissions, degrees, fellowship, and appointments requirements; and manage administrative paperwork on behalf of the program and its graduate students. Finally, every degree program sits with a cluster of related programs in the school called a division. Each division is overseen by a Division Head, a tenured faculty member who is responsible for administrative and financial matters.

## Student Services & Admissions

<b>Shederick A. McClendon</b> Assistant Dean of Students	642-9654	<a href="mailto:samclendon@berkeley.edu">samclendon@berkeley.edu</a>
<b>Marques Redd</b> Asst. Director of Student Services	643-8452	<a href="mailto:red@berkeley.edu">redd@berkeley.edu</a>
<b>In Recruitment</b> Asst. Director of Admissions/Recruitment	642-7675	<a href="mailto:sphadmit@berkeley.edu">sphadmit@berkeley.edu</a>
<b>Michael Parra</b> Coordinator of Financial Aid & Admissions	643-0881	<a href="mailto:sphinfo@berkeley.edu">sphinfo@berkeley.edu</a>
<b>Yasmin Wofford</b> Curriculum Planner & Data Analyst	642-4706	<a href="mailto:sphcourses@berkeley.edu">sphcourses@berkeley.edu</a>
<b>Stephanie Mech</b> Admissions Coordinator	664-9084	<a href="mailto:oomphadmit@berkeley.edu">oomphadmit@berkeley.edu</a>
<b>Stephanie Nguyen</b> Online Education Recruitment Specialist	664-7979	<a href="mailto:online.mph@berkeley.edu">online.mph@berkeley.edu</a>

## Program Managers

<b>Marques Redd (interim)</b> Biostatistics Program Manager	643-8452	<a href="mailto:biostat@berkeley.edu">biostat@berkeley.edu</a>
<b>Marques Redd</b> DrPH Program Manager	643-8452	<a href="mailto:drph@berkeley.edu">drph@berkeley.edu</a>
<b>Norma Firestone</b> Environmental Health Sciences Program Manager	643-5160	<a href="mailto:ehs_div@berkeley.edu">ehs_div@berkeley.edu</a>
<b>Janene Martinez</b> Epidemiology Program Manager	643-2731	<a href="mailto:epi_div@berkeley.edu">epi_div@berkeley.edu</a>
<b>In Recruitment</b> Health & Social Behavior Program Manager		<a href="mailto:hsbprogram@berkeley.edu">hsbprogram@berkeley.edu</a>
<b>Carol Wong</b> Health Policy & Management Program Academic Coordinator	643-8571	<a href="mailto:hpm_mph@berkeley.edu">hpm_mph@berkeley.edu</a>
<b>Marques Redd</b> Health Policy PhD Program Manager	643-8452	<a href="mailto:healthpolicy_phd@berkeley.edu">healthpolicy_phd@berkeley.edu</a>
<b>Teresa Liu</b> Infectious Diseases Program Manager	642-2613	<a href="mailto:idadmin@berkeley.edu">idadmin@berkeley.edu</a>
<b>Michelle Azurin (interim)</b> Interdisciplinary MPH Program Manager	664-7240	<a href="mailto:ipmph@berkeley.edu">ipmph@berkeley.edu</a>
<b>Tracey Jones</b> UCB-UCSF Joint Medical Program Manager	642-5671	<a href="mailto:jmp@berkeley.edu">jmp@berkeley.edu</a>
<b>In Recruitment</b> Maternal & Child Health Program Manager	643-4991	<a href="mailto:mchprogram@berkeley.edu">mchprogram@berkeley.edu</a>
<b>Carol Hui, Chrissy Badaracco (interim)</b> Public Health Nutrition Program Manager	666-3734	<a href="mailto:phnprogram@berkeley.edu">phnprogram@berkeley.edu</a>
<b>Svetlana Battle</b> Online MPH Program Manager	642-8253	<a href="mailto:oomph_prog_mgr@berkeley.edu">oomph_prog_mgr@berkeley.edu</a>
<b>Candice Moses and Amy Lou</b> Undergraduate Program Managers	643-0874	<a href="mailto:sphug@berkeley.edu">sphug@berkeley.edu</a> ,

### Diversity Respect Equity Action Multiculturalism (DREAM) Office

<b>Darlene Francis</b> , Associate Dean for Education, Equity, and Inclusion	642-7132	<a href="mailto:darlenefrancis@berkeley.edu">darlenefrancis@berkeley.edu</a>
<b>Michelle Azurin</b> Diversity Outreach Coordinator	664-7240	<a href="mailto:mazurin@berkeley.edu">mazurin@berkeley.edu</a>
<b>Durrain Ansari-Yan</b> Director of the DREAM Office, Co-Director of the Kaiser Permanente Public Health Scholars Program	664-7240	<a href="mailto:sphdiversity@berkeley.edu">sphdiversity@berkeley.edu</a>
<b>GRADS Coordinators</b> Nancy Ceja, Miriam Magaña López	642-6698	<a href="mailto:sphgrads@berkeley.edu">sphgrads@berkeley.edu</a>

### Center for Public Health Practice & Leadership

<b>In Recruitment</b> , Associate Director, Center for Public Health Practice & Leadership		
<b>Ruthann Haffke</b> Career Services Manager	642-0431	<a href="mailto:haffke@berkeley.edu">haffke@berkeley.edu</a>
<b>Audrey Cristobal</b> , Field Supervisor for Health & Social Behavior and Infectious Diseases & Vaccinology	642-2084	<a href="mailto:acristobal@berkeley.edu">acristobal@berkeley.edu</a>
<b>Lisa Peterson</b> , Program Manager, Communications Lead	642-4569	<a href="mailto:lisapeterson@berkeley.edu">lisapeterson@berkeley.edu</a>
<b>Grace Turkis</b> , Co-Director of the Kaiser Permanente Public Health Scholars Program	666-3737	<a href="mailto:gturkis@berkeley.edu">gturkis@berkeley.edu</a>

### Public Health Library

<b>Michael Sholinbeck</b> Outreach/Instruction Librarian	642-2511	<a href="mailto:msholinb@library.berkeley.edu">msholinb@library.berkeley.edu</a>
<b>Deborah Jan</b> Head Librarian	642-2511	<a href="mailto:djan@library.berkeley.edu">djan@library.berkeley.edu</a>

### Dean's Office

<b>In recruitment</b> , Asst. Dean of Finance		
<b>Priya Mehta</b> , Asst. Dean of Strategic Planning, External Relations, and Development	664-7983	<a href="mailto:priya_mehta@berkeley.edu">priya_mehta@berkeley.edu</a>
<b>Linda Anderberg</b> Director of Communications and Marketing	643-4707	<a href="mailto:landerberg@berkeley.edu">landerberg@berkeley.edu</a>
<b>Matthieu Kaminski</b> , Operations, Administration, Multimedia, and Technology	643-6904	<a href="mailto:matthieu.kaminski@berkeley.edu">matthieu.kaminski@berkeley.edu</a>
<b>Brian Maxey</b> Digital Communications Specialist	642-9185	<a href="mailto:brianmmaxey@berkeley.edu">brianmmaxey@berkeley.edu</a>
<b>Eileen Pearl</b> , Director of External Relations Programs and Annual Giving	642-0431	<a href="mailto:eileen_pearl@berkeley.edu">eileen_pearl@berkeley.edu</a>

## Facilities

**Janis Honda**  
Facilities Manager 643-6954 [jkhonda@berkeley.edu](mailto:jkhonda@berkeley.edu)

## Associate Deans

**Katharine Hammond**  
Associate Dean of Academic Affairs 643-0289 [hammondk@berkeley.edu](mailto:hammondk@berkeley.edu)

**Darlene Francis**  
Associate Dean of Education, Equity, and Inclusion 642-9513 [darlenefrancis@berkeley.edu](mailto:darlenefrancis@berkeley.edu)

**Jennifer Ahern**  
Associate Dean of Research 643-4350 [jahern@berkeley.edu](mailto:jahern@berkeley.edu)

## Division Heads

**Denise Herd**  
Community Health Sciences 642-4842 [tiara@berkeley.edu](mailto:tiara@berkeley.edu)

**Alan Hubbard**  
Biostatistics 643-6160 [hubbard@stat.berkeley.edu](mailto:hubbard@stat.berkeley.edu)

**Ellen Eisen**  
Environmental Health Sciences 643-5310 [eeisen@berkeley.edu](mailto:eeisen@berkeley.edu)

**Arthur Reingold**  
Epidemiology 642-0327 [reingold@berkeley.edu](mailto:reingold@berkeley.edu)

**James C. Robinson**  
Health Policy & Management 642-0564 [james.robinson@berkeley.edu](mailto:james.robinson@berkeley.edu)

**Lee Riley**  
Infectious Diseases & Vaccinology 642-9200 [lwriley@berkeley.edu](mailto:lwriley@berkeley.edu)

**NOTE:** If you are using a campus phone, only dial the last 5 digits if the number begins with 642. The area code for all numbers is 510.

## Select Faculty and Staff Roles and Responsibilities



### **Darlene Francis**

#### **Associate Dean for Education, Equity, and Inclusion**

Serves as the Head Graduate Adviser for MPH and DrPH students; is charged with leading educational programs and being the final School of Public Health authority on all student-related matters; represents SPH to entities such as the Graduate Division, Academic Council, Office of the Registrar, etc.; oversees efforts to increase the access and academic success of diverse students; provides leadership to achieve equity and inclusion through outreach and recruitment, admissions advising, academic and social support, and mentoring.



### **Shederick A. McClendon**

#### **Assistant Dean of Students**

Leads student services personnel in the Office of Student Services and Admissions as well as assists program student services staff in offering services to all SPH students; guides and advises on policy and compliance issues regarding students; manages SPH student fellowship resources and supports, guides, and advises SPH Fellowships Committee on the effective distribution of financial resources; provides general advising to faculty, staff, and students regarding all aspects of student administrative engagement with UC Berkeley and SPH.



### **Marques Redd**

#### **Assistant Director of Student Services, Health Policy PhD & DrPH Program Manager**

Works with Assistant Dean of Students to set and implement schoolwide policies; implement best practices in advising, enrollment management, and academic progress; and provide direction to student services staff in the Epidemiology, Biostatistics, Environmental Health Sciences, Infectious Diseases, and Health Policy & Management divisions. Works closely with HP and DrPH directors in providing guidance relating to program administration; provides advice and assistance to HP and DrPH students on academic issues, degree progress, and major requirements.

## Select Administrative Staff Roles and Responsibilities



### **Assistant Director of Admissions & Recruitment**

Advises SPH Faculty Council's Student Affairs Committee in setting of admissions policies; designs and implements effective admissions processes for 31 distinct SPH degrees and program combinations; guides, trains, and leads SPH faculty, staff, and students in all matters relating to admissions for both the traditional campus degree programs as well as the Online MPH program; advises prospective applicants on application processes and best practices for a successful admissions application.



### **Eileen Pearl**

#### **Director of External Relations Programs and Annual Giving**

Responsible for alumni relations and overseeing the Public Health Alumni Association board of directors; facilitates student-alumni connections and networking; manages the School's Annual Fund; runs external relations programs including managing student volunteers, class gift, Fall phonathon, PHAA scholarships, and the Big Give.

# GETTING STARTED

## Campus Connections

### SIR, SLR, AND ONBOARDING

Please log into UC Berkeley's online portal [CalCentral](#) (more information below) using your CalNet ID and passphrase to accept or decline your admission offer. If you accept your offer, CalCentral will direct you to the Onboarding process for graduate students.

Onboarding is a communication tool in CalCentral that provides important information for newly admitted graduate and professional students to orient them to campus and take the necessary steps to prepare for their arrival. Please review the onboarding messages and checklist items under "Tasks" on My Dashboard that you need to complete in order to enroll.

If a final transcript, degree diploma, or other documentation is requested, it must be delivered to the Graduate Admissions Office by **Monday, October 3, 2017**, to ensure your continued registration and enrollment as a graduate student. An official transcript is one that has been issued by your current undergraduate (or graduate) school and is sent directly to Berkeley Graduate Admissions, 318 Sproul Hall #5900, Berkeley, CA 94720-5900.

### STUDENT ID AND CALNET ID

If you are a newly admitted graduate student, you will receive an email from [gradadm@berkeley.edu](mailto:gradadm@berkeley.edu) with instructions for how to retrieve your 8-digit Student ID number and PIN. Once you have secured your Student ID, you can [create a CalNet ID online](#). Your CalNet ID will be your @berkeley.edu email address, so choose wisely!



If you are unable to create a CalNet ID by following the process above, you can obtain a "token" (a numerical code) from a departmental [CalNet Deputy](#) or from the [Cal 1 Card Office](#). Go to the web page [Create CalNet ID \(with token\)](#) to set up your CalNet ID and passphrase. Your default CalNet ID will be the same as your Student ID number, but you will create a new one as you move through the process.

### BERKELEY EMAIL ADDRESS

After you claim your CalNet ID, you will need to [create your bConnected Google Account](#). bMail, part of the bConnected Collaboration Services portfolio, is where you will find email directed to your official campus email address (which is your CalNet ID followed by @berkeley.edu). Please make sure you notify your program coordinator of your new email account.

**UC Berkeley campus policy requires all students to have and use a Berkeley email address.** Students are welcome to have email forwarded to another mail client (e.g. Gmail). However, all administrative messages from the School and UC Berkeley will be sent to the berkeley.edu email address. You are responsible for communications sent to and from your Berkeley email address.



### **CAL 1 CARD**

All current students, faculty, and staff are required to get a Cal 1 Card. The [Cal 1 Card](#) is UC Berkeley's official identification card and has several functions:

- » It is your official UC Berkeley nontransferable photo identification card.
- » It is your access card to campus buildings and services, including library services, University Health Services, Recreational Sports Facilities (RSF), residence halls, and [Cal Dining meal plan points](#). In addition, with a Class Pass sticker, you can use your Cal 1 Card to ride AC Transit.
- » It also functions as a debit card. You can deposit money to the card online and use the card for purchases from participating on- and off-campus merchants, printing in computer labs and libraries on campus, food and beverages at Cal Dining locations, and laundry in the residence halls. Your [Cal 1 Card debit account](#) is free with no minimum balances or overdraft fees. It's easy to get started online today.

To obtain your Cal 1 Card, visit the Cal 1 Card office at 180 Cesar Chavez Center in Lower Sproul Plaza. The office is open Monday-Friday from 9 a.m. to 4:30 p.m. In order to get your Cal 1 Card you will need to present a government-issued identification card (such as a driver's license or passport) and make sure you know your student/employee identification number. Your first card and [Class Pass](#) are free.

---

**NOTE:** If you lose your Cal 1 Card after obtaining a Class Pass, you will incur the current Class Pass replacement fee in addition to the Cal 1 Card replacement fee. All Class Pass replacements must be requested/dispensed at Parking & Transportation (2150 Kittredge Street).

### **CAMPUS WIFI**

[AirBears2](#) is the wireless service for access to the campus network. It provides access to all students, staff, and faculty, and includes a provision for the creation of short-term guest accounts for campus visitors. The secure automatic connection means that users only login once.

Follow these steps to access AirBears2:

- 1. Create a Key.** Use your CalNet Passphrase to login to the [Manage My Keys website](#) and follow the instructions provided. See additional information on [managing your AirBears2 key](#).
- 2. Configure Your Device or Computer.** Once you have your AirBears2 key, you can configure your device or computer to use AirBears2. Just select it as your wifi network, accept the certificate that is offered (this secures the association process), and log in with your CalNet ID using your AirBears2 key as the password. Once you have done this the first time, your device should automatically use AirBears2 whenever you are within an area that it is provided (inside almost all campus buildings).

Guests may use the “CalVisitor” network to access the internet only. This is an open wifi network and requires no password. attwifi is a service provided by AT&T Wireless. It is available to AT&T customers with devices that are provisioned for the service. Members of the general public may also access it for a fee on the IST website.

### SOFTWARE CENTRAL

[Software Central](#) offers no- or low-cost downloads of campus site-licensed software, including Windows 7, Microsoft Office Suite, Adobe Creative Suite, and integrated firewall/ antivirus programs. Cloud services for online storage and collaboration—Box, bDrive and Google Docs—are available at no cost to the campus community. You will need a CalNet ID and passphrase to download/access these services. See [bConnected](#) for service access information.

## Establishing California Residency

Students are classified as residents or nonresidents after completing the Statement of Legal Residence shortly after being admitted to the University. Graduate students (U.S. citizens, permanent residents, and some eligible nonimmigrants) who enter UC Berkeley as nonresidents and who establish residency for the required year may be classified as [residents for tuition purposes](#) within one year after their arrival. These students then receive the benefit of paying at the lower resident rate.

The classification process is not automatic. Continuing nonresident students who have made California their permanent home and believe that they are eligible for resident status must submit an online residency classification petition. Supporting documentation can be uploaded to Cal Central prior to established deadlines. Even though few nonresident students submit a petition to change their residency status until the end of their first academic year at Berkeley, you must start the process of fulfilling the residency requirements as soon as you arrive. This includes documenting when you arrived, that your year of physical presence in this state is coupled with your intent to make California your home, and that you are financially independent.



After you arrive in California, please review the information on the Registrar website page for [Residency Requirements: Graduate Students](#). Remaining in California during non-academic periods is a strong indicator of your intent to make California your home. You will be required

to document that you were physically present in California for at least two of the three months during the summer previous to the term for which you are petitioning for residency. For the full text of the campus residency policy, what students should do once they arrive, and applicable deadlines, see the [Residence Affairs website](#). Students with residency questions should contact the Residence Affairs unit by email [orres@berkeley.edu](mailto:orres@berkeley.edu) or phone 510-664-9181.

---

**NOTE:** International students with F-1 or J-1 visas/nonimmigrant status are not eligible to establish residency.

*This summation is not a complete explanation of the policies regarding residency. Changes may be made in the residence requirements between the publication date of this guide and the relevant residence determination date.*

## Housing

We recommend that students find housing as soon as they sign their Statement of Intent to Register (SIR). View the [Explore Housing Options website](#) for more help with housing.

### **UNIVERSITY-OWNED-AND-OPERATED HOUSING**

Ida Louise Jackson Graduate House is reserved for single graduate students and is located one block from campus on College Avenue. This complex consists of shared apartments that are furnished and have single-occupancy bedrooms, a shared bathroom, a kitchen facility, and a living/dining room area. Rents are per-person and are determined by apartment size. Utilities (including water, garbage, electricity, phone, internet, and basic cable) are included. For monthly rates and to apply, see the [Ida L. Jackson housing website](#).

The Manville Apartments are unfurnished single studios for law students and other graduate students. Located three blocks from campus at Shattuck Avenue and Channing Way, these apartments are within easy walking distance of downtown Berkeley shops, movie theaters, and public transportation. Utilities include basic cable and internet; students pay for electric service. For monthly rents and to apply, see the [Manville housing website](#).

[Family Student Housing](#) offers apartments for married/partnered students, with or without children, and single parents at University Village. The East Village Apartments include spacious two and three-bedroom flats and townhouses, and the West Village Apartments include one, two, and three-bedroom apartments. The popular University Village community is located about three miles northwest of campus in the nearby town of Albany (known for its excellent school district). Rents include all utilities, internet, basic cable and one parking space. University Village is served by AC Transit and the local bus system; registered students can ride for free. For more information, email the Family Student Housing Assignments Office at [apts@berkeley.edu](mailto:apts@berkeley.edu) or call 510-642-4109.



## ALTERNATIVE HOUSING

[The Berkeley Student Cooperative](#) is made up of buildings, known as co-ops, that offer various accommodations, including rooms, houses, and shared apartments for single students in single or double occupancy rooms.

[International House](#) is located at the eastern edge of the campus, provides room and board accommodations, and features an exciting array of intercultural activities and programs for students and scholars from the United States and dozens of other countries.

## OFF-CAMPUS HOUSING

Many graduate students reside in off-campus rental housing in Berkeley or nearby communities and find their housing through the [Cal Rentals website](#), a rental listing service that assists the Berkeley community with finding housing. For a \$20 subscription fee, you receive three months of access to rental listings from landlords who seek Cal students as tenants. Rentals advertised include shared apartments and houses, rooms in private rooming houses and private homes, apartments and houses in the community, and work exchanges. Apartments with three or more bedrooms are rare. Unlike University housing, off-campus rentals usually do not include utilities, cable TV, or internet access. Typically you will be required to pay the first month's rent and a security deposit in advance. [Work Exchanges](#) are another option for budget-conscious students. Sometimes a homeowner will seek a student to perform a job (e.g., baby-sitting, gardening, or managing the property) in exchange for a room or an apartment. Expect to work approximately fifteen hours per week for a rent-free room.

## Parking and Transportation



Since Berkeley is a busy urban campus, parking near campus is limited. Students living within two miles of the campus are not eligible to purchase parking permits. Berkeley is well-served by public transit, and many students prefer to walk or bike to campus. For more information visit the [Parking and Transportation website](#).

### STUDENT AC TRANSIT CLASS PASS

All students pay a mandatory student fee for a “Class Pass,” the AC Transit bus pass issued at the beginning of fall and spring semesters that provides year-round access to AC Transit buses. The Class Pass allows registered students to ride free of charge on AC Transit (including the Transbay lines to San Francisco). The fees are covered by your registration fees. All you need to do is pick up your Class Pass at the Cal 1 Card Office. For more information regarding the Class Pass and AC Transit Bus Routes, visit the [P&T website](#).

### BEAR TRANSIT SHUTTLE

Your Cal 1 Card is also valid on the [Bear Transit](#) campus shuttles, which operates eleven lines to and around campus nearly 24 hours a day, including service to Moffitt Library, BART, the ASUC, and other popular destinations. Daytime shuttle schedules are available [online](#). Schedules for the Night Time routes are also available [online](#).



---

**NOTE:** If you lose your Cal 1 Card after obtaining a Class Pass, you will incur the current Class Pass replacement fee in addition to the Cal 1 Card replacement fee. All Class Pass replacements must be requested/dispensed at Parking & Transportation (2150 Kittredge Street).

### **PARKING PERMITS**

Students who live at least two miles from campus can [purchase parking permits](#). To manage local demand, parking permits are strictly enforced on campus and in the surrounding neighborhoods. To purchase a permit, check current parking fees, or obtain a parking map, call 510-643-7701 or visit the Parking and Transportation website.

If you must drive, Parking and Transportation encourages finding a carpool partner using your personal network, [511.org](#), or [Zimride](#). Carpooling saves money; for example, Fall 2017 rates for carpool permits are \$129/semester instead of \$363/semester. Be sure to bring your Cal Photo ID card and proof of local residence, such as a rental agreement or utility bill in your name (phone bills will not be accepted). If you drive to campus every day, you can save money by purchasing a prepaid student permit for a full semester. If you drive to campus only occasionally, you can purchase a Daily Student Fee Lot Permit that will allow you to park in student lots. Night and weekend permits also are available. See [Permit Rules](#).

### **BICYCLE COMMUTING, SECURITY, AND LICENSING**

Bicycles are allowed on most paths and roads on campus, with the exception of areas where riders must dismount and walk due to heavy pedestrian traffic. To avoid bicycle theft, make sure to properly lock your bike to a rack using a high-quality U-lock. Always lock the wheels and frame of your bike to a rack in a well-lit, well-traveled area. Secure, covered bike parking is available free of charge in four facilities and there are bike lockers at University Hall and Recreational Sports Facilities. Please see the P&T website for [bike parking information](#). California bicycle licenses are free to campus affiliates. Please contact UCPD for license information.

### **ALTERNATIVE TRANSPORTATION**

Parking and Transportation also provides information on their website on, and services related to, alternative transportation, including the Class Pass, BearTransit campus shuttles, carpools, [Bay Area](#)

[Rapid Transit \(BART\)](#) and taking your bicycle on public transit. There is a link to bikes on public transit and route planning at [511.org](#). P&T also offers students a \$48 High Value Bart ticket for \$43. If you have further questions, contact the Go Cal! Program Manager, Natalie Nava at [nnav@berkeley.edu](mailto:nnav@berkeley.edu) or 510-664-7268.



## **CAR SHARING**

Three [car-sharing services](#): Zipcar, City Carshare, and Enterprise are now available on or near campus. Each service provides its members with short-term car rentals. Car-sharing is an excellent alternative to automobile ownership for students. Use a vehicle when you need it for grocery runs and errands instead of owning, insuring, parking, and maintaining your own vehicle. For more information, see the [P&T website](#). 

# STUDENT INFORMATION SYSTEMS

## CAL CENTRAL

Students entering in the fall of 2017 will access all of their key information through a single point of entry at [CalCentral](#). CalCentral simplifies UC Berkeley’s online campus experience. This website combines multiple campus systems into one easy-to-use, mobile-friendly place. Check campus email, calendar, enrollment information, grades, financial aid, and much more. Students can login to CalCentral using their CalNet ID.

If you experience any technical issues in CalCentral, email [sishelp@berkeley.edu](mailto:sishelp@berkeley.edu) or contact your program manager.

## bCOURSES

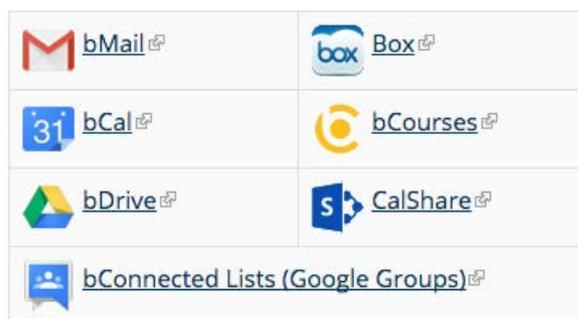
[bCourses](#) is the name of Berkeley’s official campus Learning Management System (LMS). This web-based tool provides a resource for instructors and students to enrich the teaching and learning experience. Course materials and communications will be disseminated through bCourses and can be archived for later retrieval. Students must enroll in the bCourse site of any course that requires it. Students can login to bCourses using their CalNet ID.

---

**NOTE:** There are methods for filtering email from your various bCourses sites. Beware of turning off email notification for one site housed on bCourses as notifications for all other sites will be affected. All email communications are archived in each site, so if you do miss a message you can catch up there.

## bCONNECTED

All registered students are required to have their own [bConnected](#) Google account. A bConnected account includes your official campus email (bMail), calendar (bCal), document-sharing (CalShare), and data storage (bDrive and Box)—which is unlimited while you are a student! You are responsible for communications sent to and from your “@berkeley.edu” address and for data stored in your bConnected account.



If you haven’t already, please visit [bconnected.berkeley.edu/](http://bconnected.berkeley.edu/) to create your bConnected Google account using your CalNet ID.

## PHONE/ADDRESS/EMAIL UPDATES

Keep your current home address, phone number, and email address updated with the Office of the Registrar. You can do this by logging onto [CalCentral](#) and editing the contact information in your profile. If you have an academic student appointment as a Graduate Student Researcher (GSR) or



Photo: Blitz Architecture

Graduate Student Instructor (GSI) for instance, keep your contact information updated with your payroll contact because payroll records do not fully intersect with student academic records and some functions, such as direct deposit, are managed by completely different systems.

### **TECHNOLOGY SUPPORT**

The [online Knowledge Base](#) provides how-to's and answers to commonly asked technical questions. The Campus Shared Services (CSS) IT Help Desk can answer specific questions. Contact the Help Desk at 510-664-9000, then choose option 1.

### **EDUCATIONAL TECHNOLOGY SERVICES (ETS)**

ETS provides audiovisual, computer projection, and podcast technology for classrooms, along with training and support of technologies to enrich teaching and learning experiences. Learn more on the [ETS website](#). 

# GENERAL ENROLLMENT INFORMATION

## Registration

Becoming a fully registered student involves two steps: (1) enrolling in classes and (2) paying fees. Note that you will not have any fees assessed to your account until you have enrolled in at least one class.

### **ENROLLMENT APPOINTMENTS IN CAL CENTRAL**

While most graduate and professional students will follow the [standard process of enrollment](#) in CalCentral, some may have different enrollment dates and processes. Please contact your adviser for more information about class enrollment if you are a student participating in one of the following graduate/professional programs: School of Law; Haas School of Business MBA, EMBA, EW MBA; School of Optometry OD; School of Information MIDS; School of Public Health Online MPH; and Goldman School of Public Policy MPA.

For all others: Enrollment appointments in CalCentral will be available for incoming students starting **August 5, 2017**. You **MUST** enroll to be eligible for academic appointments, stipends from university fellowships and grants, and access to services and programs. If you experience technical issues, email Student Information Systems (SIS) at [sishelp@berkeley.edu](mailto:sishelp@berkeley.edu).

### **MINIMUM UNIT REQUIREMENTS (FOR DrPH AND MPH STUDENTS)**

---

**NOTE:** Academic degree programs (MA, MS, PhD) may have additional or different enrollment policies than professional degree programs (MPH, DrPH). Please check with your program manager.

A minimum of 42-48 units (depending on the program) are required for the MPH degree. A course load of 12-16 units per semester is acceptable for public health graduate students. A student who wishes to take fewer than 12 or more than 16 units is required to obtain special approval. In exceptional cases such as personal or family illness, and upon recommendation of the student's Graduate Adviser and the SPH Office of Student Services and Admissions, the Dean of the Graduate Division may approve a reduced course load. Carrying a reduced course load may result in a prolonged degree program.

Public health students must follow the requirements listed below:

1. Master's students are required to take a minimum of 12 units per semester.
2. Doctoral students who have passed their Qualifying Examinations are required to take a minimum of 8 units per semester (although most doctoral students opt to take 12 units since the registration fees are set at one rate regardless of unit count).

In exceptional cases such as personal or family illness, and upon recommendation of the student's Graduate Adviser and the SPH Office of Student Services and Admissions, the Dean of the



Graduate Division may approve a reduced course load. Carrying a reduced course load may result in a prolonged degree program.

## Grades

### MINIMUM GRADE REQUIREMENTS

All graduate students are required to maintain a minimum grade-point average of 3.0 (B) in all upper division and graduate course work. Check with your program manager for the requirements in your department, as some departments may have higher standards for their students.

A passing grade for a Breadth Course Requirement is a B-. MPH students must take Breadth Course Requirements (PH 142, PH 200J, PH 200K, PH 200L, and PH 250A) for a letter grade. This also applies for the alternative courses which are listed later in this document. Students attaining less than a B- will be required to retake the course in order to qualify for graduation.

### GOOD ACADEMIC STANDING

Students must be in good academic standing to be placed in School of Public Health internships and residencies. Students are normally considered to be in good academic standing if they are making adequate progress toward the completion of degree requirements and:

- » Have a cumulative grade-point average of at least 3.0;
- » Do not have more than 2 unfinished incomplete grades on their record; and
- » Have not received warning letters from the department or been placed on formal probation for academic or clinical deficiencies.

### GRADING STANDARDS

In order for students to be in good academic standing, they must maintain an overall grade point average of at least 3.0 on the basis of all upper division and graduate courses (100 and 200 level) taken in graduate standing. Grade-points earned in Berkeley courses numbered below 100 or above 300 are not included in determining a student's grade point average for remaining in good standing or earning a degree. Some departments may have higher performance standards than the minimum B average required by the Graduate Division. The School of Public Health considers a grade of lower than B- in any individual course to be a sign of academic concern.

## Coursework

### INDEPENDENT AND SPECIAL STUDY COURSES

Independent and special study courses are numbered: 195, 197, 198, 199, 296, 297, 298, and 299. Of the 42/48 minimum units required for the MPH degree, no more than one-third of the total units completed (i.e. 10 units for a 42-unit degree or 12 units for a 48-unit degree) may be taken from courses numbered 195, 197, 198, 199, 296, 297, 298, or 299. Students may take Independent study units offered by SPH or departments outside the School. Provisions about independent study are to be administered by the Office of Student Services and Admissions in concert with the student's Faculty Adviser and monitored by the Associate Dean for Education, Equity, and Inclusion. The SPH Education Policy and Curriculum Committee (EPCC) may grant variances to these policies as necessary and appropriate.

### UNDERGRADUATE COURSES

Courses numbered 199 and below are considered to be undergraduate courses. Graduate students may not take more than half of the required degree units in courses numbered 100 through 199. Courses numbered below 100 do not count toward meeting any graduate degree requirements. Courses 100 and below may count as units toward full time status.



### CONSENT OF INSTRUCTOR

Consent of Instructor means the instructor has the prerogative of deciding whether a student has the necessary background for the course that he or she wishes to take. Denial of access to a course should never be made for any reasons other than the student's academic preparation and ability to intellectually benefit from the course, as well as his or her potential to contribute.

If a student does not agree with the instructor's decision, he or she can go to the Division Head or Associate Dean for Education, Equity, and Inclusion in the School of Public Health to request an appeal. If the student is unsatisfied with the response of the appropriate School personnel, he or she is encouraged to request a meeting with the [University Student Ombuds Office](#).

### Incomplete "I" Policy

An instructor may assign an incomplete grade if the student's work in a course has been of passing quality but is incomplete due to circumstances beyond the student's control (such as sudden illness the day of an examination, or a family emergency that doesn't allow for completion of assignments by the end of the semester.) The student and instructor must draft a written agreement addressing completion of remaining coursework, specifying which work must be completed and by what date. The student and instructor should also agree to the percentage of the final grade being represented by the incomplete coursework. The agreement must acknowledge the students understanding of the implications if the prescribed work is not completed by the prescribed time limit. 🔄

# UNIVERSITY AND SCHOOL POLICIES

## SEXUAL VIOLENCE & SEXUAL HARASSMENT PREVENTION EDUCATION

Both the University and the School have made it a priority to ensure that harm and violence have no place at Berkeley. This can include, but is not limited to, hate or bias related incidents, sexual violence, sexual harassment, dating violence, domestic violence, and stalking. Through numerous trainings, we are equipping our campus with the skills to recognize instances of potential harm or violence and offer help safely, be that by de-escalating, intervening in, or reporting any potentially violent or concerning situations.

All students are required to complete trainings in order to be able to register for classes. This includes two components:

1. Online training: Think About It for Graduate Students will be available beginning July 5; a personalized link will be emailed to your berkeley.edu email address and available at CalCentral.
2. In-person training: This is an hour long in-person presentation held during the first 6 weeks of semester. There are several options available:
  - » Any graduate student can attend a general session at the New Graduate Student Orientation on **August 23, 2017** ([registration required](#)).
  - » A makeup session will be offered on **September 4, 2017**.

REMEMBER: Both components must be completed, or a hold will be placed on your registration.

## STANDARDS OF ETHICAL CONDUCT

The University's [Statement of Ethical Values and Standards of Ethical Conduct](#) commits everyone in the UC community to the highest ethical standards in furtherance of the University's mission of teaching, research, and public service. It identifies the University's core ethical values as integrity, excellence, accountability, and respect.

In summary, we are committed to the following:

1. **Fair Dealing.** We will always conduct ourselves ethically, honestly, and with integrity.
2. **Individual Responsibility and Accountability.** We will accept responsibility appropriate to our positions and delegated authorities.
3. **Respect for Others.** We will treat everyone we contact with respect and dignity.
4. **Compliance with Applicable Laws and Regulations.** We will learn and abide by federal, state, and local laws that affect our campus roles.
5. **Compliance with Applicable University Policies, Procedures and Other Forms of Guidance.** We will learn and abide by University and campus policies and procedures that affect our campus roles.
6. **Conflicts of Interest or Commitment.** We will avoid both actual conflicts of interest and the appearance of such conflicts and devote our primary professional allegiance to the University and its mission of teaching, research, and public service.

7. **Ethical Conduct of Research.** We will conduct our research with integrity and intellectual honesty and show the greatest care for human or animal subjects.
8. **Records: Confidentiality/Privacy and Access.** We will follow applicable laws and University policies when accessing, using, protecting, or disclosing records.
9. **Internal Controls.** We will ensure that internal controls are established, properly documented, and maintained for activities within our jurisdictions.
10. **Use of University Resources.** We will ensure that campus resources are used only on behalf of the University.
11. **Financial Reporting.** We will ensure that accounting and financial records are accurate, clear, and complete.
12. **Reporting Violations and Protection from Retaliation.** We will report all known or suspected improper governmental activities under the provisions of the University's Whistleblower Policy, recognizing that everyone is protected from retaliation for making such reports under the Whistleblower Retaliation Policy.

## HONOR CODE

The Associated Students of University of California (ASUC) in conjunction with the Graduate Assembly, the Academic Senate, and the Letters and Sciences (L&S) Deans have developed a [UC Berkeley Honor Code](#) to support an environment of academic integrity and respect on campus. While the statement of the Honor Code itself is brief, it is an affirmation of our highest ideals as Golden Bears:

“As a member of the UC Berkeley community,  
I act with honesty, integrity, and respect for others.”

The purpose of the Honor Code is to enhance awareness of the need for the highest possible levels of integrity and respect on campus, both within and outside the academic context. We hope and believe that the code will catalyze a series of ongoing conversations about our principles and practices. Together, through engagement, we can create a consistent message and ethos in our classrooms, labs, departments, and throughout the academic enterprise to ensure that the core values of academic integrity and honesty are being embraced by both students and faculty. For more information, see [Honor Code Frequently Asked Questions](#).

## ACADEMIC MISCONDUCT

Academic misconduct is any action or attempted action that may result in creating an unfair academic advantage for oneself or an unfair academic advantage or disadvantage for any other member or members of the academic community. This includes a wide variety of behaviors such as cheating, plagiarism, altering academic documents or transcripts, gaining access to materials before they are intended to be available, and helping a friend to gain an unfair academic advantage. See the [Center for Student Conduct](#) website for basic definitions and examples of academic misconduct. Please note that this list is not exhaustive and individual departments may have differing expectations for students, and therefore students are responsible for clarifying the standards and expectations of their individual departments.

## INTELLECTUAL PROPERTY

The aim of UC Berkeley policies on the protection of intellectual property rights is to make available research to others for the public benefit, while providing recognition to individual researchers and inventors and encouraging the prompt and open dissemination of research



results. The UC Berkeley Office of Technology Licensing (OTL) works with campus inventors to facilitate transfers of technologies created at UC Berkeley to the commercial sector for public use and benefit. OTL also has a peer division, the Industry Alliances Office (IAO), which enables innovative research relationships by negotiating research contracts between Berkeley employees and private industry.

### **PROCEDURE FOR DEFERRED ADMISSION**

If a student wishes to defer admission after completing the Statement of Intent to Register (SIR), the student should contact his or her program manager immediately. The program manager will submit the “Request for Deferred Admissions” form to the Assistant Director of Admissions and Recruitment, justifying the reason for the deferral (deadline: **September 1**). Petitions will be assessed on a case by case basis. The Assistant Director will forward the request to the Graduate Admissions Office, which will send a deferral status memo once the deferral is processed.

Unless special exceptions have been approved, a deferred student must join the program no later than one year after the original review date and recommendation for admission. A deferred applicant must complete a new online Graduate Division application with the applicant type “deferral” and submit before the program’s application deadline for the semester of reentry. When the deferred student completes a new application for the deferred term, an additional admissions allocation will be provided for the program to admit the student. The student will need to provide updated documents through the online application system. Official documents will be required at the time of SIR.

- » Deferrals must be requested via the “Request for Deferred Admission” form by the Head Graduate Adviser by email.
- » The deadline to submit deferrals for the following year is **September 1**.
- » Departments can only defer applicants who have accepted admissions through SIR.
- » TOEFL exam scores must be valid for the deferral period.
- » If a department that admits only for fall requests a one semester deferral to the following spring, the request requires an exception to the normal starting date of the program. The department must explain why the applicant will not be at an academic or financial disadvantage by starting in the spring.

## WITHDRAWING FROM THE UNIVERSITY

If instruction has already begun and a student wishes to discontinue study, a withdrawal must be formally requested and processed. By withdrawing, enrollment in all classes will be dropped, and a student will no longer be able to attend for that semester or any future semester unless readmitted. Students may withdraw temporarily without penalty. Many students take a semester off during the program. Withdrawal requests are reviewed and approved by the program director.

Basic Procedure:

1. Complete withdrawal request form
2. Submit withdrawal form to your program manager
3. Approval is required from both the program director and the SPH head graduate adviser. Your withdrawal is not official until these approval steps are completed

---

**NOTE:** Please allow 10 days for your request to be processed. Until your withdrawal is processed completely, you are still responsible for your classwork. Submitting the form does not automatically withdraw you.

Please contact your program manager for more comprehensive instructions on the withdrawal process.



### RE-ENROLLMENT AFTER WITHDRAWAL

If you completely withdraw from your program, you must submit readmission paperwork and subsequent fees to re-enroll. Re-enrollment after complete withdrawal is left to the discretion of the programs. There is a possibility of being denied re-admittance. Think very carefully when considering withdrawing completely.

The timing of your withdrawal request will affect your refund eligibility (full vs. partial vs. fee credit).

## GUIDE TO GRADUATE POLICY

Policies and procedures that govern graduate work at Berkeley are found in the [Guide to Graduate Policy on the Graduate Division website](#). 

# STUDENT RECORDS AND PRIVACY

## **PUBLIC RECORDS**

As a student, you will have a variety of records maintained by the University of California. Disclosure of information contained in these records is governed by state and federal law and by campus policy. The [Berkeley Campus Policy Governing Disclosure of Information from Student Records](#) is posted on the Office of the Registrar website. Unless you request “non-disclosure” (in writing), the Registrar and the School of Public Health consider the following categories to be public information once you become a registered graduate student:

- » Name of student
- » Birthday
- » Address
- » Email
- » Telephone number
- » Major field of study
- » Degrees granted at Berkeley
- » Dates of attendance

The Assistant Dean of Student Services is responsible for the maintenance of all student records. The assistant dean is assisted by staff members who have the need to access student records in the course of performing their duties. When requested, we will release the information noted above, if available in our offices. If you do not want this information released, in whole or part, you must submit a written request to withhold this information from public disclosure. You can do this by letter or by completing a form that is available from Graduate Services Degrees, 318 Sproul Hall, Berkeley, CA 94720-5900. The written request will be honored until you graduate or withdraw from the University or for a five-year period, whichever comes first.

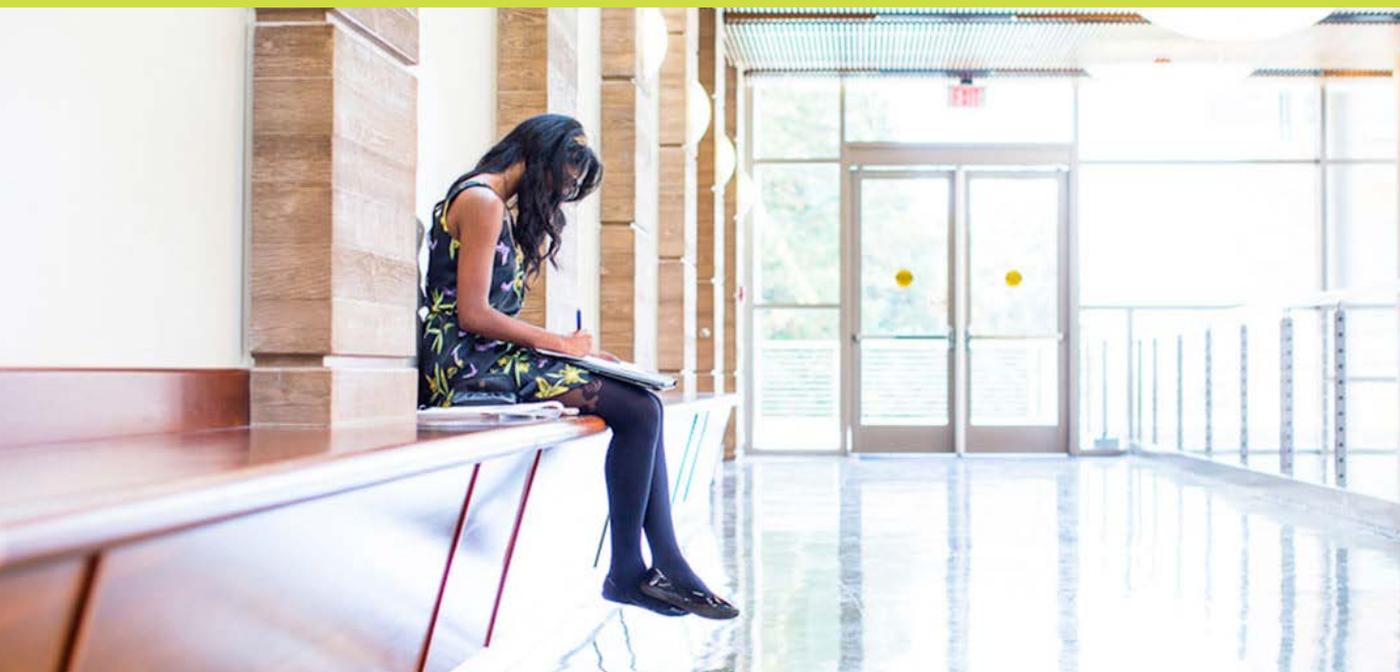
## **CONFIDENTIAL RECORDS**

All other records, such as general correspondence, admission application, and educational test scores, are confidential. The following persons have access to these records: The Office of the President of the University, the Ombudsperson, and academic and non-academic staff of the School of Public Health. Other campus personnel are granted access when such access is necessary for the normal performance of their assigned duties. The procedures by which students and persons or organizations outside the campus may gain access are described below. Complete records of degree recipients, as well as those of inactive students who have not finished their degrees, are kept for five years after the last semester of registration.

## **PROCEDURES FOR ACCESS TO CONFIDENTIAL RECORDS**

Students have the right to inspect their own confidential records provided they present adequate identification. Letters of recommendation and statements of evaluation dated before January 1, 1975, will not be disclosed since these are not covered by congressional legislation. Letters and evaluations placed in the file after January 1, 1975, are not disclosed if the student has waived the right to inspect and review those recommendations.

To inspect their records, enrolled students should direct their request to the Student Services and Admissions Staff. Request for Review of Students Record forms are available in 417 University Hall.



The form takes a minimum of one working day, but no more than 15, to process. The student may review his or her file in 417 University Hall. Copies will be made for legal actions only. We regret that it is not possible to make copies of any or all parts of a student's record file for the purpose of applying for admission or employment elsewhere.

Disclosure to a third party can be made only with the written consent of the student, which must name the third party, the records to be released, and the reasons for the disclosure.

---

**NOTE:** For records of graduation or official grades for coursework completed at the School, the official office of record is the campus [Registrar](#).

### **CHALLENGE OF RECORDS**

If a student believes that his or her records includes information that is inaccurate, misleading, inappropriate, or otherwise in violation of the students rights of privacy, an appointment should be made with the Assistant Dean of Students to request that the records be amended. If the student is not satisfied with the result of the appointment, he or she may appeal to the Dean of the School of Public Health. If the student is still not satisfied, there will be a hearing, presided over by a campus official or other party who does not have direct interest in the outcome of the hearing. The hearing will be within a reasonable length of time and will provide an opportunity for the correction or deletion of any inaccurate, misleading, or inappropriate data and for the inclusion in the student's records of a written explanation.

---

**NOTE:** Grading and other evaluations of students work by course instructors do not fall within the scope of such a hearing.

While complaints and questions that have to do with student records would first be directed to the Assistant Dean of Students, they may also be submitted to the Office of the Registrar, 127 Sproul Hall. Complaints regarding violation of the rights accorded students by the 1974 Federal Family Educational Rights and Privacy Act (Buckley) may also be filed with the Family Compliance Office, US Department of Education, 600 Independence Ave., SW, Washington, DC 20202-4605. 📍

# GRIEVANCE AND APPEALS PROCEDURES

## **GRADE GRIEVANCE AND APPEALS**

In the event of any grievance or dispute, students are encouraged to contact the [Ombudsman Office for Students and Postdoctoral Appointees](#).

Initial jurisdiction over grade grievances lies within academic departments, which make recommendations to the Committee on Course of Instruction (COCI), which determines the final resolution. COCI considers grades to be a matter of academic judgment and subject to challenge only on the basis of Berkeley Division Regulation A207.A. (Grade Appeals: Appeal Process), which states that the grounds for grievance are:

- » 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

For more information, visit [Procedures for Grade Appeals Based on the Alleged Use of Non-Academic Criteria](#).

## **INFORMAL GRIEVANCE**

Students who wish to appeal a grade in a public health course must first begin discussions with the instructor. Students may contact the department chair, the student Ombudsperson, or another mutually acceptable third party such as the Assistant Dean of Students who can attempt to mediate the dispute informally and impartially. If the matter is resolved informally between the instructor and student and requires a grade change, the case will be referred to COCI, which will review the case and notify the Registrar's Office if it is determined that a grade change is required. If the matter cannot be resolved informally by the student and instructor or by a third party, then the student may begin the formal grievance process.

## **FORMAL GRIEVANCE**

If the matter cannot be resolved informally and it has been less than one calendar year since the last day of the semester in which the course in question was taken, then the formal grievance process may begin. Neither the informal nor the formal grievance process may begin if one calendar year has passed.

The student shall submit the case in writing to the Assistant Dean of Students, who shall form an ad hoc Grievance Committee composed of three faculty members, including a committee chair, only two of whom may be from the same program. The original instructor cannot be a member of the committee. The committee will also be comprised of two students in good standing appointed by the SPH Graduate Student Council. Student members must have been in residence for at least one year and, ideally, will have passed courses or an examination in the unit at least at the level of the disputed course or examination.



A new ad hoc committee will be formed for each case presented. In cases where multiple grievances are presented (e.g., more than one student grieving grades for the same course or one student grieving grades from multiple courses), a single ad hoc committee will be formed with the student's or students' written consent.

After the student has submitted their appeal to the Assistant Dean of Students, the committee will then obtain a written response from the instructor and will allow both parties to submit additional information orally or in writing. After the grievance committee reaches a decision, they will submit their recommendation, including minority view, to the Assistant Dean, student, and instructor. The assistant dean will then forward the committee's recommendation to COCI. If COCI finds in favor of the student, they may change a failing grade to P or S, drop a course retroactively, retain the course but eliminate the grade from the GPA, or adopt the letter grade, if applicable, recommended by 4 out of 5 members of the grievance committee.

### **GRADUATE APPEAL PROCEDURE**

The purpose of this procedure is to afford Berkeley graduate students an opportunity to resolve complaints about dismissal from graduate standing, placement on probationary status, denial of readmission to the same program (if the student was previously in good standing), disputes over joint authorship of research in accordance with joint authorship policies of campus departments or units, and other administrative or academic decisions that terminate or otherwise impede progress toward academic or professional degree goals.

The scope of this procedure is limited to the matters listed above and excludes complaints regarding student records, grades in courses of instruction, student employment, student discipline, and auxiliary student services (such as housing, child care, etc.). This procedure may not be used for complaints regarding actions based solely on faculty evaluation of the academic quality of a student's performance or decanal evaluations of a student's appropriate academic progress unless the complaint alleges that the actions may have been influenced by non-academic criteria, such as considerations of race, politics, religion, sex, or other criteria.

The University has a variety of mechanisms to deal with complaints. An overview of grievance and appeals procedures that address administrative or academic decisions that impede or terminate progress toward a degree are discussed in [Graduate Appeal Procedure](#).

The general rule, in the event of a dispute, is to begin with the parties closest to the situation. The principle is illustrated in the following policy adopted by the School of Public Health faculty for professional degree students. It pertains to administrative or academic decisions that impede or terminate progress toward a degree goal but does not cover grade appeals.

1. The student should first discuss the complaint with his/her Faculty Adviser or Program Director.
  - a. If the situation is not resolved, the student and/or the Faculty Adviser should consult either the Division Head or the Assistant Dean of Students.
  - b. If still unresolved, the next step is to consult the Associate Dean for Education, Equity, and Inclusion.
2. Only if the above steps are followed without satisfactory resolution should the student bring the grievance or appeal to the Dean of the Graduate Division.

Graduate students may contact the Office of the Ombudsman for Students for informal assistance with complaint resolution. The Associate Deans of the Graduate Division also may be consulted for informal resolution at any stage of the process. Civil law remedies, including injunctions, restraining or other court orders, and monetary damages also may be available to complainants. 

# FEES, BILLS, AND OTHER FISCAL MATTERS

## REGISTRATION FEES

Your registration fees are billed through the Billing and Payment Services Office. Registration fees for Fall 2016 can be found on the [Office of the Registrar](#) website.

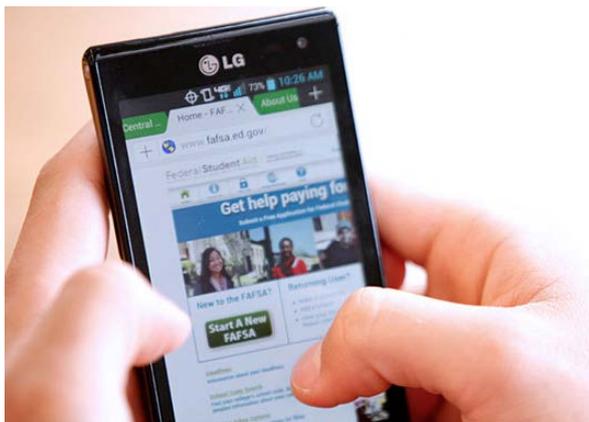
Your first billing statement (e-Bill) will be available in early August and must be viewed online through [CalCentral](#). Paper bills are not generated; your only notification will be by email. E-Bills are generated once a month and once the e-Bill is created it does not update. Before making a payment, it is important to first view your updated balance by logging into CalCentral. If you are eligible for financial aid, please note that the August e-Bill will not show your financial aid payments, including loan disbursements, for the Fall semester.

## PAYMENT OPTIONS

Students will use CalCentral My Finances for billing activities, including viewing new charges, account balances, transaction history, and paying bills. If you wish to grant a trusted individual access to seeing and paying your bills, use the link on My Finances to grant authorization.

Students can pay university bills online by eCheck at no cost, with a credit card for a 2.75% convenience fee, or with foreign currency through a Western Union wire transfer. More information for continuing undergraduates and graduate students can be found online on the [Billing Services page](#) of the SIS website.

You must pay your registration fees in full or enroll in the Fee Payment Plan (which has a \$60 participation fee). The deadline for new graduate students to select this payment option is **September 18, 2017**. To be considered a registered student, at least the first installment of your fees must be paid by **August 18, 2017**, and you must be enrolled in at least one class. If your fees are not paid on time, your enrollment in classes may be canceled, any fellowship or stipend payments may be placed on hold, and you may not be able to access campus services such as the library or Recreational Sports Facility or be able to obtain a bus pass.



## ELECTRONIC FUNDS TRANSFER (EFT)

Recipients of fellowships, stipends, and financial aid are strongly encouraged to sign up for Electronic Funds Transfer (EFT) to expedite receipt of their disbursements or refunds via direct deposit to your personal bank account. Students using EFT receive their refunds faster and avoid standing in line. EFT is secure and saves resources. Visit the [EFT website](#) to sign up online. Refunds paid to students by a paper check can be picked up in person at the Cal Student Central office located at 120 Sproul

Hall. Checks that are not picked up in a timely manner will be mailed to the local address on file in CalCentral. Make sure your local address is current to avoid delays in payment and problems with returned mail due to an outdated address. For billing inquiries, contact:

[Cal Student Central](#) (different from CalCentral)

120 Sproul Hall, Berkeley, CA 94720-5900

510-664-9181

studentcentral@berkeley.edu

Hours: Monday to Friday, 9 a.m. –4 p.m.

## FINANCIAL AID

To be eligible for University funding, all graduate students who are U.S. citizens or permanent residents are required to submit the annual Free Application for Federal Student Aid (FAFSA), which is available on the [FAFSA website](#).

Federal Direct Loans and work-study awards are administered by the Financial Aid and Scholarships Office. The programs are based entirely on demonstrated financial need and require a Free Application for Federal Student Aid (FAFSA), independent of the fellowship application. The FAFSA form is available on the FAFSA website.



Only U.S. citizens or students with permanent resident status may apply for the federal loans and work-study funds administered by the Financial Aid and Scholarships Office. In most cases, students will be eligible to borrow Federal Direct Loans sufficient to cover their academic year budget (tuition and fees, living expenses, books, etc.), less awards from other sources. If you have not filed a 2017–18 FAFSA, do so as soon as possible to ensure you have loan funding available for the 2017–18 academic year.

### Financial Aid for Student Parents

Registered graduate student parents (single or married) with dependent children may apply for a variety of aid programs: Graduate Student Parent Grants; Childbirth Accommodation Funding; Family and Childbearing Leaves; Child Care Reimbursement for Graduate Student Researchers; Back-Up Child Care; and Breastfeeding Support Program. For more information, see visit the [Support for Student Parents website](#).

Please direct questions about need-based loans to Cal Student Central, 120 Sproul Hall, 510-664-9181. You can also consult the graduate student section of the Financial Aid and Scholarships Office website.

## FELLOWSHIPS AND SCHOLARSHIPS (FOR GRADUATE STUDENTS)

The Fellowships website is an excellent place to begin researching extramural fellowships, including those awarded by government agencies, foundations, and corporations. [Check the website](#) for the most up-to-date fellowship information. Graduate Services Fellowships also offers workshops on some extramural fellowships (i.e., Fulbright, FLAS, NSF, etc.). Fellowship workshops will be announced via email from Graduate Student Affairs Officers and via GradNews.



### **Graduate Fellowships Office**

318 Sproul Hall #5900, Berkeley, CA 94720-5900  
510-642-0672

If you were awarded financial assistance through the University for 2017–18, you will receive information directly from the appropriate office concerning payment of the award. Graduate students will find numerous opportunities for funding once they begin their academic careers. Keep in mind that fellowships funded by foundations or government agencies often have early Fall deadlines. Students are advised to continue to apply for fellowships even if they have already received funding for their first two or three years of graduate school.

### **EMERGENCY LOAN PROGRAM**

The Financial Aid and Scholarships Office offers short-term emergency loans to graduate and undergraduate students. These interest-free loans are designed to help students meet unanticipated expenses directly related to the cost of education. Information on the Emergency Loan Program is on the [Cal Student Central website](#) and the [Financial Aid & Scholarships website](#).

### **WORK-STUDY**

Working parttime while in school is a great way to pay for some of your expenses and keep your student loan debt to a minimum. The Federal [Work-Study program](#) at UC Berkeley creates job opportunities for students. Many of the [campus jobs](#) are restricted to work-study students, so it is a good idea to apply for work-study.

For work-study questions, students can call [Cal Student Central](#) at 510-664-9181, phone hours: 9 a.m.-noon and 1-4 p.m.; drop in at 120 Sproul Hall (Regular hours of operation: Monday-Friday, 9 a.m.-4 p.m.); or [open a case](#). Employers with questions should email [wsp@berkeley.edu](mailto:wsp@berkeley.edu).

### **FEE REMISSIONS**

Graduate students who hold academic appointments ([GSI](#), [GSR](#), [Reader](#), [Tutor](#)) may be eligible for [fee remissions](#) that offset a portion or all of their educational and health insurance fees. The

amount of the fee remission depends on the type of appointment that is held during the current semester. Although the specifics of a graduate student appointment may vary, the following fee remissions generally apply for students appointed the full semester:

- » GSI/GSR (25-44%): Partial Fee Remission
- » GSI/GSR (45% or greater): Full Fee Remission

Typically, though not always, GSIs/GSRs who are hired for at least 25% time (10 hrs/week) receive most of their tuition/fees paid (everything except for Professional Degree Supplemental Tuition, Class Pass, and Berkeley Campus Fees), as well as an hourly salary and student health insurance. GSIs/GSRs hired at least 45% time also receive the Class Pass and Berkeley Campus fees paid as part of the benefit. The Professional Degree Supplemental Tuition must still be paid. All graduate students are restricted to working no more than half-time (50%) during fall / spring semesters, regardless of the position they hold. A request for an exception can be submitted to the Head Graduate Adviser. Many departments appoint graduate students for less than half time. For example, a GSI typically works 16 to 20 hours per week, on average.

---

**NOTE:** If you are not a resident of California, you typically will not qualify to get your non-resident supplemental fee paid for as a GSI, no matter what percent time you work, unless otherwise stated by your department.

---

**NOTE:** Students on Filing Fee status are not eligible for fee remissions.

### **FILING FEE INFORMATION AND POLICIES**

The [Filing Fee](#) is a reduced fee, one-half of the Student Services Fee (formerly the University Registration fee), for doctoral students who have completed all requirements for the degree except for filing the dissertation (Plans A and B) and presenting the Final Defense (Plan A). It is also available to master's students with no requirements remaining except for filing the thesis (Plan I) or taking the final comprehensive examination (Plan II). Filing Fee is available for the fall and spring semesters only. You can [apply here](#).

The Filing Fee is not a form of registration. If students wish to use University services that are supported by registration fees, they must pay those fees. Students on Filing Fee status are not eligible to hold academic appointments because they are not registered.

If a student does not complete the final degree requirements (filing the dissertation or thesis, or passing the final comprehensive exam) during the semester for which the Filing Fee is approved, the student must apply for readmission and pay regular registration fees during a subsequent semester to complete the requirements.

---

**NOTE:** The Filing Fee may be used only once during a student's career. 

# TEACHING AND RESEARCH ASSISTANTSHIPS

## **ACADEMIC STUDENT EMPLOYMENT (ASE)**

Many graduate students are offered academic appointments, such as Graduate Student Instructor (GSI, synonymous with “teaching assistant”), Tutor, or Reader. These titles are Academic Student Employees (ASE) and are regulated by a union contract. The contract is available online. Students also may be offered an appointment as a Graduate Student Researcher (GSR). Please note that academic appointments have minimum academic requirements, such as GPA and English language proficiency, as well as registration and other requirements. Some positions are eligible for fee remissions in addition to salary.



Before you begin any work, you should first meet with the personnel assistant in your hiring department to complete all the necessary paperwork and ensure that you understand what your position will entail and what to expect in terms of salary and fee remissions. For GSI appointments, the hiring department is required to send you an official appointment letter and any supplemental information required. For GSR appointments, you should receive a signed copy of the GSR Appointment Form from your department outlining the details of your GSR appointment.

Your appointment is not final until you have accepted the job offer in writing. Ask about University deadlines, and make sure that you have met all the requirements for your position. For more information, please read the [GSI, GSR, Reader, Tutor Guide](#).

## **THE ROLE OF THE GSI**

A Graduate Student Instructor (GSI) serves as a teaching apprentice under the supervision of the instructor in charge of the course. GSI duties may include lesson planning and lab preparation, teaching sections or labs, office and email consultation, and grading exams and papers.

## **THE ROLE OF THE GSR**

A Graduate Student Researcher (GSR) performs research work broadly related to his or her degree program under the direction of a faculty member or principal investigator. GSR duties may include participant recruitment, data collection and analysis (may require working knowledge of STATA, SAS, or R), and manuscript editing and writing.

## **HOW TO FIND GSI/GSR OPPORTUNITIES**

Graduate Student Instructor positions are available primarily for doctoral or continuing master’s students; however, incoming master’s students may secure a position as a GSI for an undergraduate course. Typically, departments send out announcements when they are ready to look for GSIs (usually late March through August for Fall semester appointments). If you are interested in a particular department, visit the departmental website and join their mailing list.

Applications for GSI positions are made directly by the student to the department in which s/he wants to GSI for. Students must apply to each department separately and only after they have committed to come to the School of Public Health (i.e., submitted the Statement of Intent to Register).

### General Tips

- » Check UC Berkeley departmental websites for application details and deadlines
- » Check the SPH Bulletin emailed out weekly by SPH Communications
- » Check the SPH Student Digest emailed out weekly by the Office of Student Services and Admissions
- » Check the SPH Jobsite (requires CalNet ID login) for new posts regarding GSI/GSR positions. Check frequently, as positions are high in demand and may be filled quickly. You can also see other part-time jobs for students that are available.
- » Look for emails concerning GSI/GSR opportunities from your program manager, faculty, and SPH staff.
- » Begin your search early; check departmental websites for GSI application deadlines.
- » Apply broadly and ask to be put on a waitlist in case someone decides not to take a GSI position that is offered to them.
- » GSR appointments can be made at any point throughout the year, so continue your search
- » Try not to get discouraged; finding and securing a GSI/GSR position takes initiative and a lot of follow-up, but most students who have wanted to get a position manage to do so by their second year.

### Tips for Finding GSI Positions

If you are an incoming master's student, you are eligible to apply for GSI appointments in undergraduate courses. Please note that each department has its own application and its own submission deadlines. More information can be found on UC Berkeley departmental websites. In addition to applying online, you may consider contacting faculty or department heads directly.

If you are a doctoral or continuing master's student, you are welcome to apply for GSI appointments in undergraduate and graduate courses. In addition to applying online, you may consider contacting faculty directly. For example, if you took "International Maternal and Child Health" in Fall 2017, you may be a good candidate to teach that class in Fall 2018, so you would want to get in contact with Ndola Prata and express your interest in becoming a GSI.

---

**REMEMBER:** You can be a GSI in any department in which you feel you have experience. DO NOT apply to be a GSI for a course in which you are not knowledgeable and adequately prepared to teach.

### Tips for Finding GSR Positions

If you are interesting in doing research with a particular faculty member at UC Berkeley, you are encouraged to reach out to them directly and inquire about GSR positions. Ask faculty or staff well before the beginning of the semester for which you want to be appointed about research projects that may need GSRs. You should also check department websites and talk to your graduate student colleagues, who may have suggestions.

## GSI, GSR, READER, AND TUTOR GUIDE

Detailed information about academic student employment can be found in the [GSI, GSR, Reader, and Tutor Guide](#). This is a complete guide that outlines:

- [I. Collective Bargaining Agreement](#)
- [II. How to Find a Graduate Student Academic Appointment](#)
- [III. Letter of Appointment](#)
- [IV. GSI Appointments](#)
- [V. Acting Instructor-Graduate Student \(AI-GS\) Appointments](#)
- [VI. Campus Resources for GSIs and AI-GSs](#)
- [VII. Graduate Student Research \(GSR\) Appointments](#)
- [VIII. Reader Appointments](#)
- [IX. Tutor Appointments](#)
- [X. General Policies on Academic Appointments](#)
- [XI. Summer Sessions](#)
- [XII. Contact Information](#)

## GSI TEACHING AND RESOURCE CENTER

This Graduate Division office provides teaching support for new and continuing GSIs and prepares graduate students for the teaching they may do in future academic and nonacademic careers. The GSI Teaching and Resource Center includes teaching conferences, workshops, course improvement grants, teaching awards, consultations, and a Certificate in Teaching and Learning in Higher Education. The Center's Language Proficiency Program administers SPEAK (Speaking Proficiency English Assessment Kit) and OPT (Oral Proficiency Test) exams for prospective GSIs who do not speak English as a native language. The Center also assists departments and faculty in their role of preparing GSIs for teaching through grants, web-based materials, and an annual seminar for faculty on mentoring GSIs in teaching.

The [GSI Teaching and Resource Center website](#) includes an online teaching guide and a rich array of materials to assist GSIs. Visit the GSI Teaching and Resource Center at 301 Sproul Hall to find books, videos, and other reference materials on teaching. For more information, email [gradappt@berkeley.edu](mailto:gradappt@berkeley.edu) or call 510-642-4456.

## LANGUAGE PROFICIENCY

Students who do not speak English as a native language and who do not hold a Bachelor's degree from a U.S. institution must demonstrate oral English proficiency to be appointed as a GSI. In those countries where the internet-based (iBT) TOEFL is available, English language proficiency for teaching is determined by the speaking section score of the iBT TOEFL. In those countries where the iBT TOEFL is not available, students can demonstrate their proficiency by taking and passing the Oral Proficiency Test (OPT) offered on the Berkeley campus. Information on passing scores, testing options, and language courses can be found on the GSI Teaching and Resource Center's [Language Proficiency web pages](#).

## PEDAGOGY COURSES

GSIs are required to take pedagogy courses. All GSIs teaching for the first time at Berkeley are required to enroll and complete a 375-level course (2 units) on teaching in the discipline prior to or concurrent with their first appointment. However, please note that courses in the 375 series do not count toward the 42/48 unit requirement for the MPH degree. 🔄

# SCHOOL OF PUBLIC HEALTH RESOURCES

## **WEBSITE AND SOCIAL MEDIA**

You can find the main School of Public Health website at [sph.berkeley.edu](http://sph.berkeley.edu). A few handy pages on the site for students are the [Student Government page](#), the [Student Resources page](#), and the [Student Groups page](#). You can visit the [SPH Bulletin](#) page to check on the latest posted announcements and the [SPH Calendar](#) for School- and campus-wide events of interest. You can also submit events to the SPH Calendar using your berkeley.edu email address.

We also encourage students to follow and engage with the School on social media:

- [Facebook](#)
- [Twitter](#)
- [Instagram](#)
- [LinkedIn page](#)
- [YouTube](#)
- [Livestream](#)

General information for all graduate students may be found on the [Berkeley Graduate Division website](#).

## **UNIVERSITY HALL**

University Hall (UHall) is home to the School of Public Health. Students may request access to University Hall outside normal open hours (Monday through Friday, 7 a.m. to 6 p.m.) by submitting their ID card and Card Key Request form accompanied by a Mailroom Notification Key Request form to the Office of Student Services and Admissions for approval and signature. The office will submit the form to the SPH Facilities Office, who will grant access.

## **STUDENT SERVICES AND ADMISSIONS**

The Office of Student Services and Admissions is located at 417 University Hall. The Student Services and Admissions team in the School of Public Health works year round to ensure that all students have access to the campus services they may need. Issues dealing with admissions, financial aid, course registration, student life, advising, and all policies concerning education come through this office. It is also responsible for planning several major events during the year, including New Student Orientation, Spring Visit Day, and Commencement.

## **CENTER FOR PUBLIC HEALTH PRACTICE & LEADERSHIP**

The Center for Public Health Practice & Leadership's (CPHPL) mission is to support students, faculty, alumni, and practitioners as current and emerging health leaders to achieve excellence in practice as they promote individual and community health. The center collaborates 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. The center promotes a commitment to diversity, human rights, and social justice and offers the following services: internships, career services, leadership development, and professional development.



[Learn more about the summer internship process for 2-year MPH students.](#)

### **CAREER SERVICES FOR GRADUATE STUDENTS AND ALUMNI**

The [Career Services](#) office provides a full range of resources designed to support students and alumni at all points along the employment path. Students can discuss career decision-making and job search strategies, have resumes and cover letters critiqued, conduct a mock interview, evaluate a job offer, or learn more about the career resources available at the School of Public Health. Career counseling appointments are available 10 a.m.-5 p.m., Monday-Friday. To make an appointment, email Ruthann Haffke, career services manager, at [haffke@berkeley.edu](mailto:haffke@berkeley.edu).

### **SPH JOBSITE FOR GRADUATE STUDENTS AND ALUMNI**

Search for full-time or part-time jobs, fellowships, internships, GSI/GSR, and volunteer opportunities using the [SPH Jobsite](#). In addition to searching employment listings, you can:

- » Browse employer profiles and find out which employers are actively recruiting School of Public Health students and alumni.
- » Create custom searches, review your application history, and store your resume, cover letter, and other documents.
- » Evaluate your personality, interests, skills, and values as they relate to your career choices.
- » View the calendar to find and sign up for workshops, employer information sessions, and special events.

### **DREAM OFFICE**

The Diversity Respect Equity Action Multiculturalism Office (DREAM) office is located at 461 UHall. The mission of the [DREAM Office](#) is to increase diversity in the public health workforce by encouraging students from historically underrepresented or disadvantaged backgrounds to pursue graduate degrees in the health professions. We work to reduce barriers to entry into graduate school and to help those interested in working with vulnerable populations to succeed in their goals.

At the UC Berkeley School of Public Health, we have a 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. To learn more about the UC Berkeley campuswide commitment to diversity, equity, and inclusion, visit the [Berkeley Diversity website](#).

### **SHELDON MARGEN PUBLIC HEALTH LIBRARY**

The Sheldon Margen Public Health Library, located on the ground floor of University Hall, offers scheduled reference hours, consultations by appointment, drop-in instruction sessions, wireless campus Internet access, 12 Windows and Macintosh computers, and access to ArcGIS, SPSS, R, and the Microsoft Office suite. Through the Library, students have access to thousands of online resources including journals, books, databases (PubMed, Scopus, Embase, Global Health, CINAHL, etc.), data, and more. Off-campus access is available via the [Library Proxy Server or the campus VPN](#). The hours of operation are 10 a.m.-5 p.m., Monday - Friday. The library is closed on the weekends. Michael Sholinbeck, outreach/instruction librarian, leads professional development workshops for students throughout the school year and summer. For more information about library resources and databases, visit the [Public Health Library website](#).

### **GRADUATE STUDENT LOUNGE**

The Public Health student lounge is open to all graduate students and is located in the Alice Martin Commons Room, Ground Floor, 56 UHall. The door remains locked at all times, and an access code is required to gain entry. Visit your program manager for the current semester's access code, which cannot be distributed over email. Currently registered SPH doctoral students (or those on Filing Fee) have access to an additional lounge located on the 5th floor. For access to the doctoral lounge in 585 UHall, email the Assistant Director of Student Services in 50 University Hall to have your student ID card activated.

### **HAVILAND HALL COMPUTER FACILITIES**

There are two computer facilities available to public health students: 340A and 340B Haviland Hall, located on the third floor. 340A is a classroom shared with the School of Social Welfare (SSW). Students from SPH and SSW are welcome to use this room for drop-in use when classes are not meeting. 340B is a small drop-in computer lab. All computers are equipped with the latest statistical software, including STATA, SAS, R, and SPSS. See below for facility [hours of operation](#).

#### **340A Haviland Hall (Classroom)**

M-Th: 8 a.m.-6 p.m.

F: 8 a.m.-5 p.m.

Sun: 1 p.m.-5 p.m.

Sat: closed

University Holidays: closed

#### **340B Haviland Hall (Drop-In Lab)**

M-Th: 8 a.m.-6 p.m.

F: 8 a.m.-5 p.m.

Sun: 1 p.m.-5 p.m.

Sat: closed

University Holidays: closed

Public Health Students using the Haviland Hall computer facilities are given a free allowance of 300 pages per semester, approximately 20 pages per week. After that, students are expected to make a 2-to-1 paper contribution to the facilities. See [Paper Policy](#) for more information. Printing is also available in the University Hall Student Lounge (56 University Hall). However, students need to supply their own paper.

### **LISTSERV ANNOUNCEMENTS**

To post relevant announcements to the SPH student community, submit your notices via e-mail to [sphinfo@berkeley.edu](mailto:sphinfo@berkeley.edu). Your announcement will be included in the SPH Student Digest, which is sent out on Monday mornings throughout the year and more frequently at the start and completion of semesters when more announcements are necessary. In addition, to keep students in the loop, the SPH Bulletin, an enewsletter for faculty and staff, is sent out every other Monday. If you have an announcement to submit, please email it to [sph\\_communications@berkeley.edu](mailto:sph_communications@berkeley.edu).

Be sure to read ALL emails from the followings addresses:

SPH Communications: [sph\\_communications@berkeley.edu](mailto:sph_communications@berkeley.edu)

Sphinfo Departmental: [sphinfo@berkeley.edu](mailto:sphinfo@berkeley.edu)

Dean Bertozzi: [ph\\_dean@berkeley.edu](mailto:ph_dean@berkeley.edu)



# CAMPUS RESOURCES

## **OFFICE OF GRADUATE STUDENT LIFE**

The Office of Graduate Student Life supports graduate students around issues that affect their well-being, such as health education and wellness, housing, and parenting support and helps create a more inclusive community for all students.

### **Office of Graduate Student Life**

318 Sproul Hall #5900 Berkeley, CA 94720

Hours: 9 a.m.-12 p.m. and 1 p.m.-4 p.m., Monday-Friday

[gradlife@berkeley.edu](mailto:gradlife@berkeley.edu)

510-642-4071

## **GRADUATE ASSEMBLY**

The [Graduate Assembly](#) is the official representative body of the graduate and professional students at the University of California, Berkeley. The fundamental principles of the Graduate Assembly are the promotion of a vibrant student social life, inclusiveness, progressive activism, community service, educational improvement, and professional development. In service to these principles, the Graduate Assembly advocates for graduate student rights, funds student groups on campus, and directly manages a variety of projects that support graduate student communities.

### **Graduate Assembly**

Eshleman Hall 2465 Bancroft Way, #444

Berkeley, CA 94720-4500

510-642-2175

## **SERVICES FOR STUDENT PARENTS**

About one in 10 of Berkeley's graduate population is a student parent. UC Berkeley recognizes that a family-friendly academic culture is essential to the success and well-being of all students, faculty, and staff. The University is committed to supporting policies, programs, and services to help graduate student parents meet their family care obligations while they pursue their academic goals. For more information, see [Student Parents policies](#) here.

### **Early Childhood Education Program**

The University's [Early Childhood Education Program \(ECEP\)](#) provides early childhood services to infants, toddlers, and preschoolers at five centers in Berkeley and Albany. ECEP teaches UC Berkeley's youngest students in a safe, nurturing, stimulating environment that sparks curiosity. It is ECEP's goal to help student parents balance school, work, and family. They reserve a number of spaces for the children of student parents and also provide subsidies to those who qualify. Early applications are recommended and are available on the [Early Childhood Education website](#).

Parents who are currently registered UC Berkeley students are eligible for up to 60 hours per year of highly-subsidized [Back-Up Child Care](#) from a leading nationwide provider of care services (on a first-come, first-served basis). This back-up program helps student parents when

their regular child care arrangements are unavailable and they need to attend to academic responsibilities on campus, at home, or away. For more information, visit the [Back-Up Child Care website](#).

The [Student Parent Center](#) on campus provides information, child care referrals, problem-solving counseling, and advocacy for the needs of student parents. It offers a central, cheerful, inviting space for student parents who need to be on campus with their children, a relaxing area for nursing, opportunities to network with other student parents, and access to computers and kitchen facilities. For more information, visit the [Student Parent Center website](#).

## SERVICES FOR INTERNATIONAL STUDENTS

The Berkeley International Office provides advising on non-immigrant visa matters, financial, personal and cultural issues. For important information and requirements specific to new international students at UC Berkeley, visit the [Berkeley International Office website](#).

### Berkeley International Office

International House, 2nd floor  
2299 Piedmont Avenue  
Berkeley, CA 94720-2320  
510-642-2818  
[nif@berkeley.edu](mailto:nif@berkeley.edu)

Berkeley International Office hosts orientation programs and social events specifically for international students new to the U.S. and Berkeley. All international students are invited to attend. The schedule for the orientation program is posted on the [Berkeley International Office website](#).

## DISABLED STUDENTS PROGRAM

The [Disabled Students Program \(DSP\)](#) provides a wide range of academic accommodation services for eligible students. Students are responsible for pursuing DSP's disability verification requirements and applying for accommodations. After completing the online application and interactive process with a DSP specialist, it is recommended that students meet with each faculty member in courses where accommodations are required to insure that accommodations are understood and provided. If you need help completing the online application, request assistance by contacting [dsp@berkeley.edu](mailto:dsp@berkeley.edu). For further details, see the [DSP website](#).

## THE GRADUATE DIVERSITY PROGRAM

The [Graduate Diversity Program \(GDP\)](#) is committed to ensuring all UC Berkeley graduate students benefit from an inclusive learning experience. Focusing on students traditionally underrepresented in higher education, the GDP offers services to prospective and current students with the goal of recruiting, retaining, and graduating diverse graduate students. The GDP provides individual advising on admissions, application assistance, strategic planning for academic success, and post-graduation planning. In collaboration with current students, the GDP strives to promote a forum for ideas and programs designed to enhance the educational pathways of diversity students. For more information, see the [Graduate Diversity Program's website](#). 

## GENDER EQUITY AND RESOURCE CENTER

The [Gender Equity Resource Center \(GenEq\)](#) is a UC Berkeley campus community center committed to fostering an inclusive Cal experience for all. GenEq is a department in the Division of Equity &

Inclusion. At the Gender Equity Resource Center, students, faculty, staff, and alumni connect for resources, services, education, and leadership programs related to gender and sexuality.

The programs and services of the Gender Equity Resource Center are focused on the following four key areas: women, men, LGBTQ+ youth, and sexual harassment and violence. Gen Eq strives to provide a space for respectful dialogue about sexuality and gender and be a portal to campus and community resources dealing with the many intersections of identity (e.g., race, class, ability, etc.). For more information, visit the [Gender Equity Resource Center's website](#).

### **PUBLIC SERVICE CENTER**

The [Public Service Center \(PSC\)](#) partners with faculty and community to support Berkeley students in finding their path to creating a just and equitable world. The PSC has 22 programs and collaborates with more than 200 community partners, and there are many ways to get involved. The PSC supports graduate students in developing community-based courses and research; identifying placement sites for students; setting up community partnerships; finding resources to support this work; and connecting graduate students to colleagues in the fields of engaged scholarship, service-learning, civic engagement, and community-based participatory research. The center can be found at the address below:

#### **Public Service Center**

218 Eshleman Hall

510-642-3916

[publicservice@berkeley.edu](mailto:publicservice@berkeley.edu)

### **GSI TEACHING AND RESOURCE CENTER**

The [GSI Teaching and Resource Center](#) helps graduate students transition to teaching as GSIs at UC Berkeley and offers programs and services to assist graduate students in developing their teaching skills for future academic and nonacademic careers. The center collaborates with faculty and departments to assist them in the mentoring and teaching preparation they offer graduate students. On the GSI Teaching and Resource Center website, you can find information about programs and services, training sessions, teaching guides for GSIs, and FAQs. More information can be found in the [GSI, GSR, Reader and Tutor Guide](#) and [Teaching and Research Appointments](#).



### **CAREER CENTER**

The Career Center offers services for all students, including alumni. Undergraduates can use career center services to learn about internships and jobs, edit their resume and cover letter, and get advice about applying to graduate school and career decision-making. Graduate students can make confidential appointments with Ph.D. career counselors and go to professional workshops, career fairs, employer information sessions, and the annual Ph.D. Career Colloquium. For more information, go to the [Career Center website](#).

### **GRADUATE STUDENT WRITING CENTER**

The [Graduate Writing Center](#) assists graduate students in the development of academic skills necessary to successfully complete their graduate programs and prepare for future faculty and professional positions. This unit offers workshops on topics such as academic writing, grant

writing, dissertation writing, editing, and preparing articles for publication, in addition to writing groups and individual consultations on these topics for graduate students.

### **D-LAB**

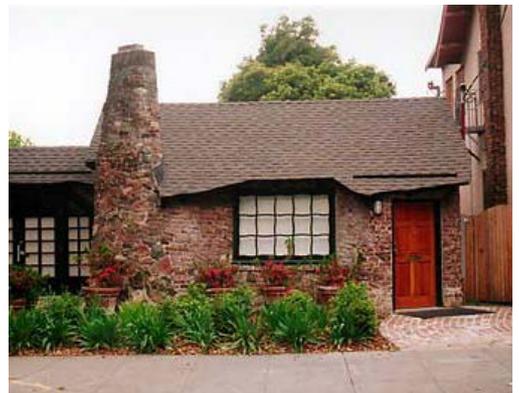
To support research design and experimentation in data-intensive social sciences and digital humanities, the [D-Lab](#) brings together experts from across campus to provide cross-disciplinary resources for in-depth consulting, advising, training, and provisioning for software and other infrastructure needs. Students can come to learn about new data, software, and techniques, participate in peer to peer groups, and schedule one on one conversations. D-Lab has incorporated the UC DATA archive, which serves campus needs for public use data, and the California Census Research Data Center (CCRDC), which supports access to selected restricted use data.

### **CENTER FOR STUDENT CONDUCT**

The [Center for Student Conduct](#) supports the mission of the University of California, Berkeley by objectively and efficiently administering our Code of Student Conduct, promoting academic integrity, balancing individual and community interests in order to encourage student accountability, and connecting students to resources that foster student success. The Berkeley Campus Code of Student Conduct can be found here. If you suspect that a violation of the Code of Conduct has occurred, you can [report an Incident online](#).

### **OMBUDS OFFICE**

The [Ombuds Office](#) is a neutral, confidential resource for informal conflict resolution with a campus-related issue or concern. The Ombudsperson will listen to your concerns, serve as a sounding board, discuss your options with you, coach you in navigating difficult conversations, and help you get a new perspective so you can determine the next steps to take. They can also help to clarify policies and procedures, help you understand your rights and responsibilities, and, when appropriate, serve as a mediator as well as assist in facilitating resolutions to your concerns.



### **STUDENT LEGAL SERVICES**

The Attorney for Students advises currently registered UC Berkeley students regarding their legal questions, rights, and obligations. A student legal consultation might focus on a landlord-tenant dispute, a citation for a criminal infraction or misdemeanor, filing an action in California Small Claims Court, questions related to credit card debt and/or collection actions, issues arising from a car accident or auto insurance, or questions about family law.

[Student Legal Services](#) provides counsel and guidance only and does not represent or advocate for individual students with regard to their potential legal claims or disputes. If your situation requires legal representation, the Attorney for Students will help refer you to appropriate resources. Student Legal Services counsel and guidance is limited to California law only. For additional information about the scope and limits of services, see the [Student Legal Services website](#). 

# HEALTH AND WELLNESS



## **UNIVERSITY HEALTH SERVICES (TANG CENTER)**

[University Health Services \(UHS\)](#) at the Tang Center is a comprehensive outpatient center, complete with medical, mental health, wellness, and insurance programs. Services provided include primary, urgent, and specialty medical care; pharmacy, laboratory, and radiology services; physical therapy; counseling and psychological services, and health promotion services.

While UHS is certainly available to assist students in times of illness and distress, a mission of the health center is keeping students well and focused on school.

Registered students can use all services at UHS whether or not they have a Berkeley Student Health Insurance Plan (SHIP). However, students without SHIP will pay a fee. To make an appointment, call 510-642-2000 or go to the online [eTang Patient Portal](#) (CalNet ID required). For more information, including a list of providers and services, visit the [University Health Services website](#).

## **STUDENT HEALTH INSURANCE PLAN (SHIP)**

As a condition of enrollment, all UC Berkeley students are required to have major medical health insurance to cover hospitalization and other care outside University Health Services. Students are automatically enrolled in Student Health Insurance Plan (SHIP), which is administered by UHS. SHIP coverage is worldwide and includes excellent medical, mental health, dental and vision benefits. For 2017-18, the Fall semester coverage period is August 15-December 31, and Spring semester covers December 31-July 31. Fall 2017 plan will begin on August 1. Dependent plans and free Insurance Helpline are also offered. More details are [available online](#).

## **COUNSELING AND PSYCHOLOGICAL SERVICES (CPS)**

[Counseling and Psychological Services \(CPS\)](#) offers short term counseling for academic, career, and personal issues. There is no charge to get started, and all registered students can access services regardless of their insurance plan. Professional counselors are available to meet with students to talk about personal, academic, and career issues, including adjusting to school, deciding on a career or major, dealing with family or relationships, sexual orientation and identity, and coping with personal crises. Groups and workshops are also available on a variety of topics, including managing stress, anxiety, and depression.

### Office Hours

Monday-Wednesday: 8 a.m.-5:30 p.m.

Thursday: 9 a.m.-5:30 p.m.

Friday: 8 a.m.-5 p.m.

Crisis drop-in: Monday-Friday, 10 a.m.-5 p.m.



## RECREATIONAL SPORTS FACILITY (RSF)

You can find just about everything you'll need to stay fit at the [Recreational Sports Facility \(RSF\)](#), including swimming pools, racquetball and handball courts, weight rooms, cardiovascular machines, basketball, volleyball, badminton courts, intramural sports leagues, and more. Student memberships are included in campus fees, so you don't need to pay anything extra to become a member—although you will still need to fill out a liability waiver. Students also receive special rates on fitness classes, personal training, intramural sports, and outdoor adventure classes.

All members get access to the RSF, the Fitness Center at the Memorial Stadium, tennis courts, running tracks, the Strawberry Canyon Recreation Area, Hearst Pool, and the Golden Bear Recreation Center, group exercise classes, and discounted rates on personal training, instructional fitness classes, massage therapy, and outdoor adventure classes at the Berkeley Marina. The [Weekly Schedule](#) for group exercise classes is posted every week, and drop-ins are welcome.

Members can sponsor one additional person who meets the following criteria: legal spouse, domestic partner, or adult (at least 17 years old) at the same shared residence to receive a discounted membership rate. Call 510-642-7796 for more information, or visit the [Recreational Sports website](#).

## CAMPUS SAFETY

On campus and in the surrounding area, you should take the precautions that you would in any urban setting. When you arrive, take the opportunity to tour the campus during daylight hours to become familiar with your surroundings. When you are on campus at night, stay on lighted, well-traveled walkways, or use Night Safety Services such as [BearWALK](#). For resources and tips regarding how to stay safe on campus, visit the [Stay Safe website](#).

The [UC Police Department \(UCPD\)](#) is a full-service police department operating around the clock. The UCPD provides a number of crime prevention and safety programs. UCPD regularly publishes Crime Alerts for the community, notifying of criminal activity on or near campus. Alerts will be sent to your @berkeley.edu email address via Nixle's UC Berkeley Private Group. For more information, see the [UCPD website](#).

## BearWALK

[BearWALK](#) is largely a student-run operation that provides walking escorts to safely escort students home after dark. [UCPD's Community Service Officers](#) (CSOs) provide you with a walking escort from dusk until last pick up at 3:00a.m., 365 nights a year. BearWALK CSOs will meet you at, and walk you to, locations within these [service boundaries](#):



- » North: Cedar Street
- » West: Milvia Street
- » South: Derby Street
- » East: Prospect Street

## How to request a walk

To book a free walking escort call 510-642-9255 (642-WALK) or visit the [BearWalk website](#). You will need your CalNet ID to request a walk. Please call or make your online request no earlier than 15 minutes before your desired pick-up time.

BearWALK Service Hours: 6 p.m.-3 a.m.

Door-To-Door Service Hours: 3 a.m.-5:30 a.m.

For more information about Night Safety Services, including a night safety shuttle and door-to-door service, visit [nightsafety.berkeley.edu](https://nightsafety.berkeley.edu).

## How to Report a Crime to Berkeley Police

UCPD strongly encourages the [reporting of criminal or suspicious activity](#) in a timely manner to assist police in intervening in potential criminal activity and apprehending suspects.

### To report an emergency on or off campus:

call 911 from any telephone

### From cell phones, to report on-campus emergencies:

call 510-642-3333

or use a Blue Light emergency phone

### For non-emergency assistance:

call 510-642-6760

Each year, the UC Police Department publishes the campus annual security report, which contains campus crime statistics and campus security policies. A print copy is available on request. To receive print copies, call UCPD Community Outreach at 510-642-3679 or email UCPD at [police@berkeley.edu](mailto:police@berkeley.edu).

**EMERGENCY PREPAREDNESS**

The Office of Emergency Management (OEM) has information on how to prepare for earthquakes, fires, and other major emergencies. OEM has created a free emergency preparedness mobile app that contains Berkeley-specific tips and guidance for a wide range of emergencies. Please visit the [OEM website](#) for download instructions and to access further information on campus emergency procedures, including a list of supplies to keep on hand. If you are a Graduate Student Instructor, learn where to direct your class if you need to evacuate by reviewing evacuation maps in each campus building. As a graduate student, you have been automatically enrolled in WarnMe, the campus alert system via your berkeley.edu email address. To receive WarnMe emergency warnings via any other method, such as by text or phone, you must log onto the [WarnMe website](#) and input your contact information. Text messages are the fastest way to get notified and should be your first alert priority.

The [campus home page](#) is your first stop for emergency information; if the home page isn't available, go to the campus [campus emergency website](#). News and instructions will also be updated regularly on an emergency hotline, 1-800-705-9998, and on radio broadcasts in the Bay Area from KALX 90.7FM or KCBS 740AM. 📞

# ACADEMIC DEGREE PLANNING

## **ACADEMIC ADVISING**

All graduate students are assigned a faculty adviser upon admission to UC Berkeley. Students are expected to meet with their advisers on a regular basis to discuss career development and academic questions and concerns. It is each student's responsibility to schedule appointments with their adviser several times per semester. If your adviser's office hours conflict with your course schedule, please contact him or her to request alternate appointment times. If you email your adviser and do not receive a reply please allow 72 hours and then email them again. If you still do not receive a reply please notify your program manager for assistance.

Faculty office hours are available to you whether or not you are have a class with your adviser that semester. You are encouraged to reach out to whichever faculty adviser you deem appropriate for your particular questions. If you find a better fit with another faculty adviser, you are welcome to switch advisers provided that your new adviser is willing to take you on.

Program Managers are available to answer questions regarding course schedules, curricular and graduation requirements, and to provide information about program, school, and campus resources. If you have any questions or concerns about the program, please contact either your faculty adviser or Program Manager.

If you are experiencing difficulty in the program, please let us know as soon as possible so that we can explore arrangements to assist you.

## **EXEMPTION EXAMS**

All MPH students are required to have and demonstrate competence in the disciplines of biostatistics and epidemiology. For students who do have this competence and do not wish to take breadth courses in these areas, we offer exemption exams. Additional details regarding the [Biostatistics Exemption Exam](#) and the [Epidemiology Exemption Exam](#) are available on the SPH website.

## **SUMMER SESSIONS**

The School of Public Health offers several courses during Summer Sessions. Introduction to Biostatistics (PH 141) and Epidemiologic Methods I (PH250A) can fulfill two of the MPH Degree breadth requirements and are generally offered in the session beginning in early July. Please check the online schedule for summer session courses and exact dates. Registration for incoming graduate students is usually available in June. More information can be found on the Summer Sessions website.

## **SPH SPECIALTY AREAS**

Public health students who wish to focus on additional areas of interest to complement their concentration curricula may complete a Specialty Area certificate. Completing a specialty typically involves completing a core course in the area of interest plus two to three elective courses from a list of offerings for a total of 9 units. Some Specialty Areas have additional requirements. A certificate is awarded upon graduation in addition to your degree. Please contact the Specialty Area Adviser for guidance early in your academic career if you plan to complete a certificate.

SPECIALTY AREA	CONTACT EMAIL
Aging	aging_specialty@berkeley.edu
Global Health	gh_specialty@berkeley.edu
Maternal and Child Health	mchprogram@berkeley.edu
Multicultural Health	sphdiversity@berkeley.edu
Public Health Nutrition	phnprogram@berkeley.edu

### DOCTORAL DEGREES WITH A DESIGNATED EMPHASIS

A “Designated Emphasis” is defined as an area of study constituting a new method of inquiry or an important field of application relevant to two or more existing doctoral degree programs. It is not a free-standing degree program, but must be added as an additional major along with an existing doctoral degree program. Students electing to add a Designated Emphasis are required to complete the academic work in the Designated Emphasis in addition to all the requirements of the doctoral program. There are no adjustments made to the normative time of the student’s major when a student undertakes a Designated Emphasis.

To qualify for the Designated Emphasis, students must have on the Qualifying Examination committee a representative of the DE and must be examined in that area of study. Students are consequently required to be admitted to the DE before taking the Qualifying Examination. When students also enrolled in a DE are advanced to candidacy, the advancement application must include the signature of the Head Graduate Adviser for the DE to signify that the dissertation committee had an appropriate representative of the DE in its membership and that the student was examined on the area of the Designated Emphasis.

Prior to filing for the degree, a Final Report for the Designated Emphasis, verifying that all of the requirements for the DE have been met, must be submitted. Students approved for a DE must include the name of the DE on the title page of the dissertation, following the major name.

The following Designated Emphases have been approved by the Graduate Council:

- » Computational and Data Science and Engineering
- » Computational and Genomic Biology
- » Critical Theory
- » Development Engineering
- » Dutch Studies
- » Energy Science and Technology
- » European Studies
- » Film Studies
- » Folklore
- » Global Metropolitan Studies
- » Jewish Studies
- » New Media

- » Renaissance and Early Modern Studies
- » Science and Technology Studies
- » Women, Gender, and Sexuality

### **COURSES IN OTHER GRADUATE SCHOOLS**

Graduate students in the School of Public Health are permitted to take courses in other UC Berkeley Schools and departments. Please be aware that enrollment, in some cases, is restricted to students in those schools.

Berkeley School of Law, the Goldman School of Public Policy, and the Haas School of Business have specific procedures for students from the School of Public Health who wish to enroll in their courses. The procedures for each school are as follows:

#### **Berkeley School of Law**

**NOTE:** Classes in the Law School start 2 weeks early.

- » You must apply to enroll in a law school course. You cannot enroll via CalCentral.
- » The first step is to email the law school registrar at [registrar@law.berkeley.edu](mailto:registrar@law.berkeley.edu) and request a form for outside enrollment.
- » There are a number of signatures you need to obtain. Once you submit the form to the law school registrar, they will put you on a waiting list for the course. If there are any seats left after the law students enroll, then a seat will be given to you. This means that you can't count on being in the class until a couple of weeks into the Fall semester. But you should attend the first several weeks of class.
- » If you have any other questions, please call Boalt Law School Student Services at (510) 643-2744 or visit their office in 280 Simon Hall.

#### **Goldman School of Public Policy**

- » Elective courses are open to all students. You can enroll via CalCentral.
- » Core courses are restricted and not open to students outside Goldman, unless permission is granted by the professor teaching the course.
- » Look in the Berkeley Catalog for electives open to all. Also, the [UC Berkeley online schedule](#) will tell you if the course is restricted.
- » If you wish to take a core course: contact professor teaching the course. If s/he agrees, obtain an instructor consent form from front desk of the Public Policy School, or contact Jalilah LaBrie at 510-643-1940 or [jalilah@berkeley.edu](mailto:jalilah@berkeley.edu) and request the appropriate form.
- » After the professor signs off on the form, take the form to Carla. She will give you a course entry code that you can use to enroll.

#### **Haas School of Business**

- » There are two elective courses open to non-Haas students that do not require permission. You can enroll directly via CalCentral. These include:
  - » MBA 209F–Fundamentals of Business
  - » MBA 296–Personal Finance Management
- » For all other MBA electives, non-Haas students must submit a request to the Haas School



of Business. The process is not first-come, first-served. As long as you submit your request before the deadline, your request will be processed. Haas will accommodate requests on a space available basis. In cases where demand for a course exceeds supply, there will be a lottery to determine who gets in. Students will be informed by the second week of classes whether there is space available.

- » For questions and information about application deadlines, please direct your inquiries to [ftacademics@haas.berkeley.edu](mailto:ftacademics@haas.berkeley.edu)

### **CONCURRENT AND DUAL DEGREE PROGRAMS**

Continuing graduate students who wish to supplement their academic and professional training with another discipline may arrange to pursue another master's degree on the Berkeley campus. The School of Public Health has established concurrent and dual degree programs with other schools and departments on campus that allow students to take advantage of the unique opportunities for interdisciplinary study that Berkeley offers. In these programs, students follow a carefully designed curriculum that allows them to complete the requirements for two degrees in less time than is normally required to complete the two degrees separately. A separate application and admission to the other department are required (see the specific department for application deadlines and procedures).

Unless otherwise stated, current MPH students are given no preferential treatment in the selection process over other applicants. If accepted into a second master's program, students are expected to meet the degree requirements for both degrees. Getting two graduate degrees at UC Berkeley is a rigorous commitment, and may require advanced and creative planning to avoid conflicts in course scheduling. Please see your graduate student adviser if you are interested in a dual degree.

#### **Public Health and Business Administration (MBA/MPH)**

This dual degree program is offered with the Haas School of Business. Applications for this program are made directly to the Haas School of Business during your first fall semester as a School of Public Health student. Applicants are expected to meet the UC Berkeley MBA requirements for admission and do not receive any preferential application status relative to other Haas applicants. In addition to their MBA core and elective classes, students must

take all of the MPH core and elective classes. Students generally will complete two summer internships. Program length is generally 3 years and students essentially earn two separate degrees: the MBA and the MPH. Graduates of this program are prepared for leadership roles in both business and delivery aspects of health services and technology industries. Interested applicants may contact the MBA graduate program manager in Haas.

### **Haas School of Business**

MBA/MPH

Kimberly MacPherson

[kmacpherson@berkeley.edu](mailto:kmacpherson@berkeley.edu)

510-642-9175

### **Public Health and City Planning, MCP/MPH**

This dual degree program with the Department of City and Regional Planning (DCRP) meets the demand for health planners looking to broaden their skills, expertise, and areas of interest. It is offered with the Goldman School of Public Policy (GSPP). Applications for this program are typically made directly to the GSPP during your first fall semester as a School of Public Health student. Applicants are expected to meet the UC Berkeley MCP requirements for admission and do not receive any preferential application status relative to other GSPP applicants. Program length is generally 3 years and students essentially earn two separate degrees: the MPH and the MCP. Interested applicants may contact the MCP student services adviser in GSPP.

### **Department of City and Regional Planning**

MCP/MPH

Kathleen Pera

[kpera@berkeley.edu](mailto:kpera@berkeley.edu)

510-643-9440

### **Public Health and Journalism, MJ/MPH**

The three-year MJ/MPH allows students to combine their interests in public health, journalism, communications, and media. The program is designed to produce public health professionals who are effective media practitioners and communicators as well as journalists with the training and knowledge necessary to cover public health and medical issues for online, print, broadcast, and other media platforms. Students select one of four public health concentrations (Environmental Health, Infectious Diseases, Epidemiology/Biostatistics, Health and Social Behavior) and simultaneously develop their reporting and multimedia skills. Interested applicants may contact the MJ graduate program manager.

### **Graduate School of Journalism**

MJ/MPH

Pam Gleason

[pgleason@berkeley.edu](mailto:pgleason@berkeley.edu)

510-642-3654

### **PUBLIC HEALTH AND PUBLIC POLICY, MPP/MPH**

This is a three-year concurrent program. Applicants apply to the MPP/MPH degree track in the School of Public Health and indicate the Health Policy and Management area of concentration. Preference is given to applicants who have work experience in health policy. Graduates assume

research and policy analysis positions in federal and state governmental agencies, consulting organizations, health advocacy groups, and health care associations. Interested applicants may contact the MPP student services adviser in GSPP.

**Goldman School of Public Policy**

MPP/MPH

Isaac Castro

[icastro@berkeley.edu](mailto:icastro@berkeley.edu)

510-643-6961

**Public Health and Social Welfare, MSW/MPH**

The School of Social Welfare and the School of Public Health offer both a 3-year concurrent degree program, as well as a 3-4 year dual degree program. Each will provide interdisciplinary preparation in the classroom and in fieldwork settings. The concurrent degree program is designed to permit students the maximum amount of flexibility while fulfilling the requirements for both degrees. Students will be enrolled in a concentration in Maternal and Child Health, Public Health Nutrition, or Health and Social Behavior in the School of Public Health, and with the concentration in Direct Practice in Health or Management and Planning in the School of Social Welfare. Admissions will be made in consultation with the admissions officers of each school and will be consistent with the admissions requirements of each school. Note that the application to the MSW/MPH concurrent degree is made prior to admission to either School. Current students in the School of Public Health may apply to the MSW/MPH dual degree program. Interested applicants may contact the MSW graduate program manager.

**School of Social Welfare**

M.S.W./M.P.H.

Joshua Dullaghan

[socwelf@berkeley.edu](mailto:socwelf@berkeley.edu)

510-642-4406

# MPH STUDENTS REQUIREMENTS

The master of public health (MPH) is a practice-based, professional degree that prepares students to be leaders in a public health practice setting. The MPH degree program is designed to be completed in two years. There is also an 11-month program in some areas of study, which is intended for students who already have doctoral degrees or who are enrolled concurrently in a doctoral program. All graduate students pursuing MPH degrees are expected to fulfill certain requirements.

## MPH CORE COMPETENCIES

Upon satisfactory completion of the MPH curriculum, all graduates will be able to demonstrate the following competencies.

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

- » Correctly use basic epidemiology terminology and definitions.
- » Discuss concepts of prevention at all levels, including health promotion, screening, etc.
- » Demonstrate a working knowledge of the biological basis of health and disease.
- » Critically evaluate the strengths & limitations of published studies and epidemiologic reports.
- » Demonstrate an understanding of multiple interactive influences, including biological, social, psychological, and structural (poverty, racism), on health outcomes.
- » Identify strategies for promoting health equity.

**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 asking questions of data sets.
- » 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.
- » Explain how to develop public health programs and strategies responsive to the diverse cultural values and traditions of the communities being served.
- » Identify social determinants of health and explain how they represent downstream consequences of larger structural contexts (e.g., racism, classism, heterosexism).
- » Explain the concepts of globalization and sustainable development and their relationship to population health

**Environment:** Explain effects of environmental factors on human health locally and globally.

- » Describe how social and political factors and policies influence environmental quality differentially across local and global communities.
- » Explain the term “exposure” and identify pathways through which individuals and communities can be exposed to environmental agents and factors.
- » Recognize patterns of disease potentially related to environmental factors.
- » Show how standards for media such as air or water are used to define what is acceptable in environmental and occupational health, and interpret such standards.
- » Discuss major policy and intervention strategies to reduce environmental exposures and identify those that can be applied “upstream” on a pathway.
- » Identify major options for mitigation and adaptation to climate change.

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

- » Define a public health problem and develop an appropriate grant, project or research proposal to address the problem.
- » Compare and contrast approaches at various levels (intrapersonal, interpersonal, organizational, community, societal, etc.) to improve a public health problem.
- » Apply methods of advocacy, such as coalition-building, persuasive communications, negotiating with stakeholders, etc. to influence public health outcomes
- » Know how to plan, execute, monitor and evaluate projects, including creating and staying within timelines and budgets.
- » Use a variety of communication methods to advocate for community public health programs and policies, including evolving technologies like social media.

**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.

- » Develop interpersonal skills to cultivate inclusive environments and establish and sustain professional relationships.
- » Demonstrate ability to work in a collaborative manner in a team setting.
- » Demonstrate initiative, strategic thinking, and problem solving skills.
- » Apply systems thinking tools to a public health issue.
- » Describe the formal and informal decision-making structures and power relationships within an organization. Be able to identify stakeholders and decisions makers.
- » Successfully lead meetings, including developing agendas, keeping the meeting on task, and delegating follow up.
- » Demonstrate professional quality presentation and group facilitation skills, and effective call to action.
- » Communicate effectively 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.

- » Describe the policymaking process and the respective roles of government and markets in influencing health and healthcare.
- » Explain the institutional, cultural, economic, and political foundations of the US healthcare system and of population health.

- » Articulate pivotal issues in the national debate on health care reform and cost trends in the USA.
- » Identify socio-economic variables and other inequalities in access to health insurance and health care—and how these impact marginalized communities.
- » Describe the main components and issues in the organization and payment methods for health services delivery.

**MPH CURRICULUM**

The curriculum for the MPH programs are offered to postbaccalaureate students who seek competency in analytic, research, and programmatic skills in their chosen area of study (Environmental Health Sciences, Epidemiology, Epidemiology/Biostatistics, Health & Social Behavior, Health Policy & Management, Infectious Diseases & Vaccinology, Interdisciplinary, Maternal & Child Health, and Public Health Nutrition).

The 1-year MPH requires completion of a master’s paper that fulfills the comprehensive examination requirement for the School of Public Health. The two-year MPH requires completion of a capstone project as well as a 3-month supervised summer internship. The course PH HLTH 297 (Field Study in Public Health) must be taken in Fall of the second year, following the summer internship.

---

**NOTE:** Modifications in program requirements and course offerings may occur from year to year.

**REQUIRED COURSES**

COURSE #	COURSE NAME	UNITS	SEMESTER
PH HLTH 142*	Introduction to Probability & Statistics in Biology & Public Health	4	Fall
PB HLTH 200J**	Health Policy & Management Breadth Course	2	Fall
PB HLTH 200L**	Health & Social Behavior Breadth Course	2	Fall
PB HLTH 200K**	Environmental Health Breadth Course	2	Spring
PB HLTH 250A*	Epidemiologic Methods	3	Fall
PB HLTH 297	Field Study in Public Health	3	Fall

*\* These course requirements may also be fulfilled by passing an exemption exam or by completing an SPH-approved higher-level alternative course.*

*\*\* Graduate students in HPM, HSB, and EHS take alternative courses in their respective departments in place of the breadth course requirement in their home departments. Contact your program manager for more information.*

**MINIMUM UNIT REQUIREMENT**

Two-Year MPH students are required to complete a minimum of 48 units of coursework (42 units for 11 month MPH students and Online MPH students.). The Graduate Council requires that all graduate students be enrolled in a minimum of 12 units per semester regardless of

their employment status. This is especially important for students receiving Block grant and other campus fellowships/awards; the campus will rescind their award for under enrollment/non-compliance if this unit requirement is not followed. 300 level courses and lower division undergraduate courses do not count toward the 48 units needed for the degree, however they do count toward the 12 unit semester minimum.

### MINIMUM GRADE REQUIREMENT

MPH students are required to attain a B- or better in Breadth Course Requirements (Epidemiology PB HLTH 250A; Biostatistics PB HLTH 142; Health Policy & Management PB HLTH 200J; Environmental Health PB HLTH 200K; Health and Social Behavior PB HLTH 200L). Students attaining less than a B- will be required to retake the course. To receive the MPH degree, the student must also meet the Good Academic Standing Rule, i.e. average overall GPA is a B average (3.0).

### FIELD WORK REQUIREMENT

Each MPH student completes a public health practice internship for a minimum of 12 weeks. Although the field placement takes place during the summer between the two years of study, students register for 3 units of PH 297: Public Health Field Study in the Fall of their second year after completion of the final project. Internship sites are chosen from a wide range of public health organizations and research institutions and are selected based



on the student's objectives for professional development and the needs of the organization.

Many sites are local, but students may also intern in other parts of the country or the world. This experience provides opportunities for students to:

- » Apply and enhance classroom knowledge and skills
- » Experience how one public health organization functions
- » Develop a professional identity
- » Explore personal growth and career direction

Students are encouraged to plan for the practice experience early in their program. See page 61 for is a general timeline of important events, activities, and deadlines for the field work placement and experience. It is the student's responsibility to keep track of the dates and deadlines set by the Center for Public Health Practice & Leadership (CPHPL).

The internship is secured through: 1) an internal organization and the CPHPL matching system, or 2) an external organization. An internal internship is secured by applying through the SPH Jobsite, securing interviews, and ranking your top choices through CPHPL. CPHPL will then match students to organizations based on students' and organizations' rank orders. After being matched, students only have a few days to commit to the placement via the "Internship Placement Confirmation" form. An external internship is secured via the student's own initiative: students reach out to organizations of interest that do not always post to CPHPL's SPH Jobsite, and secure an internship via the external organization's hiring mechanisms. These organizations do not participate in the matching system.



Most students choose to apply to both internal and external organizations to optimize their options. For students who choose to pursue both internal and external internships, it is important to remember that external sites may have their own deadlines for making hiring decisions, which may not coincide with CPHPL's deadline for committing to an internship. When interviewing and applying externally, it is your responsibility to understand these deadlines and to consider whether you will be able to have all of your options in place well before the April deadline. (This is similar to the sensitive nature of “timing” job offers—you may be asked to make a decision on one offer before you know if you even have another offer you have been pursuing.)

To prepare for your field work, you are strongly encouraged to participate in the special workshop sessions offered by the CPHPL and to schedule meetings with your field supervisor. By mid-October you will have one group meeting and one individual session with the field supervisor. Additionally, the CPHPL offers Preparation for Public Health Practice (PH 291A – Fall or Spring), a workshop series on careers and trends, professional development, and specialty skills. This one-unit course is open to all interested students at the school. Enrollment is not required if you choose to only sit in on select sessions. Other pre-internship workshops are available in the spring semester, including Excel workshops, public speaking workshops, and interviewing skills workshops. Attending two sessions is required to ensure you have the basic skills, knowledge, and competencies expected of all UC Berkeley MPH interns. The skill-based workshops are designed to reflect the skills that employers and organizations have requested that students have.

### **FIELD WORK SUPERVISORS**

The Field Supervisor for Public Health Nutrition, Maternal & Child Health, Environmental Health, and Epi/Biostatistics is Patricia (Patsy) Wakimoto. Contact Patsy at [pwaki@berkeley.edu](mailto:pwaki@berkeley.edu) or 510-642-3589 if you have any questions regarding the field placement.

The Field Supervisor for Health & Social Behavior and Infectious Diseases & Vaccinology is Audrey Cristobal. Contact Audrey at [acristobal@berkeley.edu](mailto:acristobal@berkeley.edu) or 510-642-2084 if you have any questions regarding the field placement.

**TIMELINE OF FIELD WORK PLACEMENT AND EXPERIENCE**

All dates below are estimated from the previous year's dates; exact dates may be similar. All dates are subject to change. Contact your field supervisor for an updated calendar.

**NOVEMBER**

Ongoing CPHP community partners receive invitation to post internship opportunities on SPH Jobsite.

**DECEMBER**

Ongoing Organizations begin posting internship opportunities on the SPH jobsite. Students can begin to review internships posted on SPH Jobsite and apply.

**JANUARY**

1-31 Students continue to review internships posted on SPH Jobsite and apply.

31 Deadline for organizations to post their "MPH Summer Internships" on SPH Jobsite.

**FEBRUARY**

10 Career Café: event where students can network with some internship organizations.  
15

Deadline for students to apply for "MPH Summer Internships" via SPH Jobsite.

**MARCH**

1-28 Organizations conduct interviews.

28 Deadline for students and organizations to rank their choices via SPH Jobsite.

28 Deadline to submit Supplemental Funding Application to Practice Coordinator.

**APRIL**

1-14 CPHPL matches students to internships, per student and organization rankings.

14 CPHPL confirms matches with students and notifies organizations. Unmatched organizations are invited to make internships available to other students

18 Deadline to submit an "Internship Placement Confirmation" form to Practice Coordinator.

**MID-MAY**

Students start internship to allow for completion of 12 weeks (no later than June 1).

JUNE

- 1 Students must start internships no later than June 1.
- 20 Deadline to submit completed and signed “Internship Agreement” to Field Supervisor.

JULY

- TBD Field Supervisors conduct Mid-Point Site Visits/Reviews.
- TBD Local students attend group meetings with Field Supervisor.

AUGUST

- 1-31 Students and preceptors complete Internship Evaluations via SPH job web site.
- 31 Deadline to submit Final Project and all other deliverables to Field Supervisor.

SEPTEMBER

- 22 Preceptor and Intern Recognition Reception at Alumni House

**CAPSTONE REQUIREMENT**

The Graduate Division of UC Berkeley and the School of Public Health requires all MPH students to complete a comprehensive exam with both written and oral components, to be completed in the final Spring Semester. All students must receive a passing grade on their paper and oral examination in order to receive the MPH degree. The comprehensive examination is intended to be a culminating experience for MPH students, requiring synthesis and integration of knowledge acquired through coursework, internships, and other experiences.



**Areas of Study**

# **BIOSTATISTICS**

**(MA, PhD)**

# BIOSTATISTICS

## I. Biostatistics Programs

Introduction

Mission

## II. Biostatistics MA Requirements

Program Overview

Competencies

Curriculum

Thesis

Comprehensive Examination

Applying to the Doctoral Program

## III. Biostatistics PhD Requirements

Program Overview

Competencies

Curriculum

Qualifying Examination

Dissertation

Designated Emphasis

## I. Biostatistics Programs

### INTRODUCTION

Since its inception in 1955, the Graduate Group in Biostatistics has offered academic degree programs leading to the Master of Arts (MA) and Doctor of Philosophy (PhD) degrees. The curriculum offers instruction in statistical theory and computing, as well as opportunities to rigorously apply this knowledge in biological and medical research.

### MISSION

The mission of the Graduate Group in Biostatistics is to train students to collect and explore relevant data that address issues in the biological, health, and medical sciences; acquire techniques to better understand such data; develop core methodological research skills including loss-based estimation (e.g., classification, estimation, model selection), semi-parametric estimation, cross-validation, multiple hypothesis testing, survival analysis, clinical trials, adaptive designs, causal inference, and statistical computing; and apply research skills to areas including epidemiology, genetics, medicine, and molecular biology.

## II. Biostatistics MA Requirements

### PROGRAM OVERVIEW

The MA degree in Biostatistics is completed in four semesters. Candidates for this degree are expected to earn 48 units with courses in biostatistics, statistics, public health, and biology, with a 12-unit per semester minimum enrollment. The program is completed by writing a thesis (Plan I) or taking a comprehensive oral exam (Plan II). Students are expected to enroll for all four semesters of the program; therefore, use of the filing fee in the final semester is not an option.

### COMPETENCIES

- » Understand foundations of statistical inference, e.g., maximum likelihood estimation, regression.
- » Understand the theoretical framework, scope, and assumptions of methods in the following areas:
  - > Multivariate analysis
  - > Computational statistics
  - > Categorical data analysis
  - > Survival analysis
  - > Longitudinal data analysis
  - > Causal inference
  - > Clinical trials
  - > Statistical genomics
  - > Statistical computing
- » Have the ability to soundly apply methods in the aforementioned areas.
- » Have the ability to translate subject-matter questions into precise statistical questions and to identify and apply pertinent methods to address these questions.
- » Have fluency in statistical programming languages for both analysis using classic methods and implementation of novel methods.

- » Effectively communicate research findings, orally and in writing.

## CURRICULUM

The curriculum in Biostatistics involves courses from a wide variety of areas spanning the mathematical and biological sciences. The core to this curriculum includes: loss-based estimation (e.g., classification, regression, density estimation, model selection), semi-parametric estimation, cross-validation, multiple hypothesis testing, survival analysis, clinical trials, adaptive designs, causal inference, and statistical computing. Courses in the biomedical sciences, such as epidemiology, genetics, and microbiology, are also part of the curriculum and are fundamental for an understanding of subject-matter issues.

Students are expected to take STAT 201A and 201B and at least four courses from the core PB HLTH C240 (A, B, C, D, E, and F) and PB HLTH 252D-E. This requirement may be waived for students who have had coursework in these subject areas before entering the program and who will want to take advantage of more advanced course offerings (e.g., STAT 215A, B and STAT 210 A, B). The 12-unit per semester minimum enrollment requirement may be met with independent research or seminar courses. A program of courses tailored to suit each student's background and interests may be arranged with a graduate adviser.

Courses in the Biostatistical Methods PB HLTH C240 series (A, B, C, D, E, and F) are designed to introduce students to basic concepts as well as cutting-edge topics. These courses are cross-listed in the STAT C245 series. Part A concerns fundamentals of biostatistical theory and practice; Part B survival analysis; Parts C and D computational statistics with applications in biology and medicine; Parts E and F statistical genomics. Courses in the Special Topics in Biostatistics PB HLTH 243 series cover a wide range of more specialized topics corresponding to specific faculty interests and expertise. One goal of these courses is to introduce students to current issues that might potentially lead to dissertation projects. Topics presented and course format will depend on instructor preference.

### Biostatistics Core Courses

PB HLTH C240A	Introduction to Modern Biostatistical Theory and Practice
PB HLTH C240B	Survival Analysis and Causality
PB HLTH C240C-D	Computational Statistics with Applications in Biology and Medicine I and II
PB HLTH C240E-F	Statistical Genomic I and II
PB HLTH 252D-E	Causal Inference I and II

In addition to the core Biostatistical Methods PB HLTH C240 series, the following is a non-exhaustive selection of courses of interest to Biostatistics students.

### Other Biostatistics Courses

PB HLTH 241	Statistical Analysis of Categorical Data
PB HLTH 242A	Biometrical Data Analysis: Pathological Incomplete Data and Pattern Recognition
PB HLTH 242B	Biometrical Data Analysis: Model Free Curve Estimation
PB HLTH C242C	Longitudinal Data Analysis
PB HLTH 243C	Information Systems in Public Health
PB HLTH 243D	Special Topics in Biostatistics: Adaptive Designs
PB HLTH 244	Big Data: A Public Health Perspective
PB HLTH 245	Introduction to Multivariate Statistics
PB HLTH C246A	Censored Longitudinal Data and Causality

**Theoretical and Applied Statistics Courses**

STAT 152	Sampling Surveys
STAT 201A, B	Introduction to Probability and Statistics at an Advanced Level
STAT 204	Probability for Applications
STAT C205A, B	Probability Theory
STAT 210A, B	Theoretical Statistics
STAT 215A, B	Statistical Models: Theory and Application
STAT 230A	Linear Models
STAT 232	Experimental Design
STAT 240	Nonparametric and Robust Methods STAT C241A Statistical Learning Theory
STAT 272	Statistical Consulting

**Statistical Computing Courses**

STAT 133	Concepts in Computing with Data
STAT 243	Introduction to Statistical Computing STAT 244 Statistical Computing
PB HLTH 144A	Introduction to SAS Programming
PB HLTH 144B	Intermediate SAS Programming

**Epidemiology and Other Courses**

PB HLTH 250A,B, C	Epidemiologic Methods
PB HLTH 252	Epidemiological Analysis
PB HLTH 254	Occupational and Environmental Epidemiology
PB HLTH 256	Molecular and Genetic Epidemiology and Human Health in the 21st Century
EDUC 275G	Hierarchical and Longitudinal Modeling

**Seminars and Variable Unit Courses**

PB HLTH 295	Statistics and Genomics Seminar
PB HLTH 296	Special Study
PB HLTH 299	Independent Research
PB HLTH 375B	Instructional Techniques in Biostatistics
STAT 278B	Statistics Research Seminar
STAT 298	Directed Study for Graduate Students
STAT 299	Individual Study Leading to Higher Degrees

---

**NOTE:** that enrollment in many seminars and variable unit courses requires approval of the faculty member in charge.

Other departments where biostatistics students find many relevant courses include: Mathematics (analysis, differential equations, and linear algebra), Molecular and Cell Biology (computational biology, genetics, molecular biology), and Computer Science (optimization, parallel computing).

A complete list of courses offered in Biostatistics, Statistics, and other fields of interest can be found in the [Course Catalog](#).

**THESIS (PLAN I)**

The Master's Thesis is filed at the end of the two-year MA program. The decision to complete a thesis must be made and declared early in the semester the student plans to graduate. Students are encouraged to solicit committee membership from among the Biostatistics Graduate Group faculty. Requirements for the configuration of the MA thesis committee are as follows: Thesis Committee Membership consists of three faculty members, with two "inside" members from the Graduate Group in Biostatistics and one "outside" member not belonging to the Group (a.k.a. "Academic Senate Representative"). If an outside member cannot be identified, a third member from the Group in Biostatistics is permissible. The Committee Chair must be an inside member (from within the Group in Biostatistics).

**COMPREHENSIVE EXAMINATION (PLAN II)**

Students may take the oral comprehensive examination in lieu of writing an MA thesis at the end of the two-year MA program. The decision to take the comprehensive exam must be made and declared early in the semester the student plans to graduate. The comprehensive examination committee is appointed by the Head Graduate Adviser, and consists of two faculty members from the Group in Biostatistics. The MA comprehensive examination is designed to test a candidate's breadth and depth of knowledge and understanding of material from the curriculum, as well as ability to articulate and explain basic concepts. Each examiner negotiates with the candidate a topic to explore. Candidates are expected to write a short essay on each of these topics and provide the written materials to each examiner at least three weeks before the oral exam. During the oral exam, examiners are free to question the candidate for more background, methodological detail, or examples. The comprehensive examination lasts about 90 minutes.

**APPLYING TO THE DOCTORAL PROGRAM**

Some students pursuing the MA degree intend to continue directly into a PhD program, while others take research positions in federal agencies, state and local health departments, health care delivery organizations, and private industry. MA students interested in continuing into the UC Berkeley Biostatistics doctoral program immediately following their MA degree should petition to add the new degree program through the online application for admission during their second year of study during the normal admissions cycle.

## III. Biostatistics PhD Requirements

**PROGRAM OVERVIEW**

A PhD degree in Biostatistics requires a program of courses selected from biostatistics, statistics, and at least one other subject area (such as biology, environmental health, or epidemiology), an oral qualifying examination, and the completion of a dissertation. Courses cover traditional topics as well as recent advances in biostatistics and statistics. Since graduates with doctorates often assume academic research and teaching careers, a high degree of mastery in research design, theory, methodology, and execution is expected, as well as the ability to communicate and present research findings in a clear, understandable manner.

The PhD degree program requires a minimum of four semesters of registration. Since there are no formal course requirements for the PhD, other than the completion of the MA course requirements, a program of courses appropriate to a student's background and interests may be developed with a graduate adviser.

**COMPETENCIES**

- » Understand foundations of statistical inference, e.g., maximum likelihood estimation, regression
- » Understand the theoretical framework, scope, and assumptions of methods in the following areas:
  - > Multivariate analysis
  - > Computational statistics
  - > Categorical data analysis
  - > Survival analysis
  - > Longitudinal data analysis
  - > Causal inference
  - > Clinical trials
  - > Statistical computing
- » Have the ability to soundly apply methods in the aforementioned areas.
- » Have the ability to translate subject-matter questions into precise statistical questions and to identify and apply pertinent methods to address these questions.
- » Have fluency in statistical programming languages for both analysis using classical methods and implementation of novel methods.
- » Effectively communicate research findings, orally and in writing.
- » Have the ability to develop novel methodology and validate the proposed methodology both theoretically and empirically.
- » Have the ability to implement novel methodology in reliable software packages to be released to the scientific community.
- » Have the ability to teach statistics at the university level.

**CURRICULUM**

PhD students are expected to have completed the MA course requirements, either as part of their prior MA degree or upon joining the PhD program at UC Berkeley. A program of courses appropriate to a student's background and interests may be developed in consultation with a faculty adviser.

Please refer to the "Biostatistics MA Requirements" section for details on curricular requirements and a list of suggested courses.

**QUALIFYING EXAMINATION**

The primary purpose of the oral qualifying examination is to test both a candidate's general competence in statistical theory and the ability to apply statistical methods to a subject-matter area. The exam is designed to measure breadth and depth of knowledge, as well as provide a determination of the candidate's readiness to enter the research phase of study. To assure the examining committee that the candidate has both a firm grasp of statistical foundations and familiarity with current problems in the field, the examination is conducted as follows:

1. The candidate is expected to begin with a 45-minute presentation of a dissertation topic, including a review of previous work and the proposal of a sound research strategy.
2. Following this presentation, the candidate is asked to demonstrate an ability to synthesize the methods learned through courses and to soundly apply this knowledge to areas and problems suggested by committee members. To achieve this goal, committee members

are likely to ask questions that delve into subjects that go beyond the chosen area of dissertation research.

3. The committee for the PhD Qualifying Examination consists of four faculty members: three “inside” members from the Graduate Group in Biostatistics and one “outside” member not belonging to the Group (a.k.a., “Academic Senate Representative”). At least two inside members must be core biostatistics faculty (from within the Division of Biostatistics) and one additional inside member must be faculty from another department but still a member of the Graduate Group in Biostatistics. The outside member must belong to the UC Berkeley Academic Senate (i.e., may not be an adjunct or clinical faculty or a lecturer) and may not be a member of the Group in Biostatistics. The chair of the qualifying examination committee must be a member of the Group in Biostatistics but may not serve as chair of the dissertation committee, though it is expected that the proposed chair of the dissertation committee will serve on the qualifying examination committee.

The Graduate Division must approve this committee at least three weeks prior to the exam itself. The candidate should meet with the chair of the qualifying examination committee to discuss the structure of the exam and any other pertinent issues. To be eligible for the examination, a student must have a grade-point average of at least 3.0. The examination is scheduled for three hours.

## DISSERTATION

The candidate’s research is conducted under the guidance of a dissertation committee that consists of three faculty members, with two “inside” members from the Graduate Group in Biostatistics and one “outside” member not belonging to the Group. The committee chair, which must be a member of the Group in Biostatistics, is primarily responsible for supervising the student’s research progress. The dissertation committee must be in place at the time the student submits the Application for Candidacy to the Graduate Division.

It is important for the student to meet regularly with the chair and other members of the dissertation committee. All members of the committee should approve the dissertation before it is put into final form. Instructions on the preparation and submission of the dissertation are available from the Graduate Division. The student is responsible for following these instructions, including obtaining all signatures of approval, and should allow ample time to complete all requirements well before the date when s/he plans to file the dissertation. A PDF file of the final version of the dissertation should be provided to the Group in Biostatistics.

## DESIGNATED EMPHASIS

Students enrolled in the PhD program are eligible to apply for interdisciplinary study in a designated emphasis (DE). A designated emphasis for the PhD degree is the analogue of a minor in baccalaureate programs. Applications for a Designated Emphasis are reviewed on a rolling basis throughout the year; however students must apply prior to taking the qualifying exam and are strongly encouraged to begin the application process early in the third semester of graduate study. DE may place additional requirements on coursework and on the compositions of qualifying examination and dissertation committees. Please consult individual DE websites for details:

[Computational and Genomic Biology \(DE-CGB\)](#)

[Computational and Data Science and Engineering \(DE-CDSE\)](#) 

## **Areas of Study**

# **DOCTOR OF PUBLIC HEALTH (DrPH)**

# DOCTOR OF PUBLIC HEALTH (DrPH)

## I. DrPH Program

Introduction

Mission

Competencies

Learning Objectives

## II. DrPH Curriculum

Prerequisite Courses

Required Courses

Timetable to Degree Completion

Approved Courses by Core and  
Breadth Area

Student Checklist for Completion of  
DrPH Milestones

## III. DrPH Residency Requirements

Purpose

Residency Requirements

Process

## IV. DrPH Qualifying Examination

Prerequisites

Overview

Constituting the QE Committee

Dissertation Prospectus

Oral Examination

Applying for the QE

Scheduling the QE

Format of the QE

## V. DrPH Dissertation

Overview

Constituting the Dissertation  
Committee

Advancement to Candidacy

Dissertation Guidelines

Format of the Dissertation

Resources

Filing the Dissertation

## I. DrPH Program

### **INTRODUCTION**

The Doctor of Public Health (DrPH) degree is a professional degree conferred in recognition of a candidate's command of a comprehensive body of knowledge in the field of public health and related disciplines and of the candidate's proven ability to initiate, organize, and pursue the investigation of significant problems or interventions in public health.

The focus of this degree is on the development of transdisciplinary knowledge about the determinants of health and the development of the scientific and professional leadership skills needed to translate this knowledge into effective health interventions.

Those who earn this degree are expected to occupy leadership positions that have major influence on public health research, policies, programs, systems, and institutions. Such leadership may be in diverse settings at the international, national, state, and local levels and in the public, private, and academic sectors.

### **MISSION**

The DrPH Program offers a unique opportunity to gain a breadth and depth of skills and expertise in research, policy, practice, leadership, theory, and new/emerging areas of public health. The mission of the DrPH degree program is to prepare students to develop transdisciplinary knowledge about the determinants of health, as well as scientific and professional leadership skills necessary to translate this knowledge into strategic, successful, and effective health interventions. It is our hope that students who earn this degree will advance to leadership positions in diverse settings at the international, national, state, and local levels and in the public, private, and academic sectors. Through these leadership positions, our graduates will have meaningful and significant influence on present and future public health practice, research, policies, programs, systems, and institutions.

### **COMPETENCIES**

Upon satisfactory completion of the DrPH curriculum, graduates will be able to demonstrate the following competencies:

- » The ability to work cooperatively and collaboratively with scholars and practitioners from both academic disciplines and non-academic fields to develop and use innovative conceptual and methodological approaches that synthesize and broaden discipline-specific perspectives; integrate knowledge across disciplines, sectors and populations; work with community members to translate research findings into practice; and work with researchers and other academics to bring the voices of community members to the design, development, and implementation of research agendas (Trans-disciplinary and Translational Research and Practice).
- » The ability to apply multiple theoretical and methodological approaches to explore, describe, and analyze public health problems at an advanced level; synthesize and apply evidence-based research and theory from a broad range of disciplines and health-related data sources; initiate, organize, and pursue the investigation of significant problems in public health practice, policy, and theory; and critically review relevant literature (Research Design and Methods).
- » The ability to analyze issues and problems in public health; use critical evaluation, applied research methodology, and statistical methods effectively; clarify, address, and analyze

- important gaps in scientific knowledge; propose alternative explanations for research phenomena; and demonstrate critical thinking and mastery of concepts and theories in at least one area of concentration (Critical Analysis).
- » The ability to identify, analyze, and discuss ethical principles; offer a clear understanding of how one balances the claims of personal liberty with the responsibility to protect and improve the health of the population; develop and articulate an ethical framework; and apply the ethical concepts of social justice and human rights in public health research and practice (Professionalism and Ethics).
  - » The ability to articulate a philosophy for professional leadership in public health; demonstrate leadership skills in public health practice; formulate and communicate a shared vision; advocate for important changes; inspire trust; and motivate others to achieve a shared vision (Leadership).
  - » The ability to compare and critique organizational and management theories, perspectives, and debates; apply organizational and management theories to develop and test strategies to improve organizational performance in health care delivery, public health, and other health-related settings; evaluate and analyze the organizational and system factors that facilitate or impede the adoption of evidence-based interventions; and pose relevant research questions informed by theoretical and conceptual models in organizational and management science (Program/Policy Management).
  - » The ability to identify, describe, and translate community and cultural issues that affect people's lives and health; apply that understanding to design contextually-specific research, programs, and interventions; and utilize skills to conduct participatory processes that engage diverse groups in communities in culturally relevant and sensitive ways in both research and practice (Community and Cultural Comprehension).
  - » The ability to articulate the breadth and depth of social, economic, and health inequities domestically and globally that contribute to and influence health and health outcomes and to design, develop, evaluate, and implement multi-sector approaches that promote programs and policies related to the health of populations in diverse communities and country settings (Addressing Social and Health Inequities Domestically/Globally).

**These competencies are met through several programmatic requirements:**

1. Participation in all required and elective courses necessary for completion of DrPH degree requirements as defined by the UC Berkeley School of Public Health faculty and the UC Berkeley Graduate Division. This coursework may include prerequisite coursework based on the student's previous academic accomplishments. Prerequisite course units will not count toward the 48 units required for doctoral course work.
2. Participation in a research residency or professional residency in a public health setting in which the student has the opportunity to advance knowledge and leadership skills, identify data for dissertation research, conduct analyses, and participate in decision-making.
3. Preparation for and completion of the Qualifying Examination to demonstrate the student's knowledge, integration, and application of theory, methods, and substantive knowledge in preparation for the dissertation.
4. Submitting a Human Subjects protocol which must be filed and approved by the Committee for the Protection of Human Subjects on the Berkeley Campus prior to initiating any dissertation-related research.
5. Completion of a dissertation that is designed to focus on the analysis and/or solution of a problem or opportunity in public health practice.

## LEARNING OBJECTIVES

Graduates of the DrPH Program will be able to achieve and demonstrate expertise in the following major academic outcomes:

- » Develop domain expertise and professional leadership skills in public health practice.
- » Understand critical theoretical frameworks that shape social, economic, and health inequities domestically and globally.
- » Demonstrate substantive knowledge of relevant public health problems and interventions sufficient to design and teach graduate level courses.
- » Demonstrate ability to conduct rigorous quantitative research.
- » Plan and conduct independent research using advanced research methods.
- » Master academic and grant writing, conference presentation, IRB procedures, and ethics in research.
- » Foster cohesion and intellectual exchange among students and faculty across the university to enhance interdisciplinary research and training.

## II. DrPH Curriculum

### PREREQUISITE COURSES

The minimum requirements for admission into the DrPH Program normally include an MPH or Master's degree from an accredited school of public health, or equivalent, and two years or more of professional experience in public health (post-master's degree) that demonstrate progressive responsibility and evidence of leadership potential. Some exceptions to the two-year post-master's work requirement may be made in special circumstances. Applicants with a master's or higher degree outside the field of public health are admissible but will be required to make up any deficiencies in course content equivalent to the following:

1. PB HLTH 200J: Introduction to Health Policy & Management
2. PB HLTH 200K: Introduction to Environment Health Sciences
3. PB HLTH 200L: Introduction to Health & Social Behavior
4. PB HLTH 142: Introduction to Probability and Statistics in Biology and Public Health
5. PB HLTH 250A: Epidemiologic Methods

---

**NOTE:** If these courses are required, they must be taken for a letter grade during the first academic year and will not count towards the 48 unit requirement for doctoral coursework. Students must receive a B- or better in the above core courses.

### REQUIRED COURSES

Students must complete a minimum of 4 full-time semesters of coursework (48 units not counting prerequisites for non-MPH students) and a minimum of 12 units of dissertation research credits. In addition to the required core and breadth courses listed below, DrPH students are required to attend DrPH doctoral seminars offered in their first three years of study. Due to the diverse experience each student brings to the program, it is expected that students will select courses and independent study that advance their knowledge and ultimately their proficiency in all of the core and breadth knowledge areas listed below. A wide array of courses are offered in these areas at the School of Public Health and in other departments on the UC Berkeley campus.

**Core**

A minimum of one course is required in each of these areas:

- » Management
- » Leadership (Note: PB HLTH 293 does not count towards this requirement)
- » Public Health Ethics

**Breadth**

A minimum of one course in two of these areas:

- » Health Politics and Policy Analysis
- » Public Health Interventions
- » Environmental Health Sciences
- » Global Health Sciences

**A minimum of two courses is required in this area:**

- » Research Design and Methods

**Second Semester Assessment**

Each spring, the student and his or her faculty mentor meet to discuss the student's progress and review courses taken and progress toward degree completion. A formal assessment form titled "DrPH Program Yearly Assessment" must be completed by the student and submitted to the mentor for review and signature. The signed form will then be submitted to the Program Manager before the last day of instruction. Failure to complete this program requirement prior to the beginning of the following semester may result in the student being placed on academic probation.

**Third Year Seminar Requirement**

All students in residence in their third year (or beyond) are required to attend the DrPH Third year seminar. Students on Filing Fee, conducting research out of the area for a sufficient amount of time, or so close to filing that attendance would hinder their continued progress may be exempted from this requirement. Students may also opt out by enrolling in another doctoral seminar or by written approval of their adviser. All requests for an exception for the enrollment requirement must be approved by the Associate Dean of Education, Equity, and Inclusion.

**TIMETABLE TO DEGREE COMPLETION**

The DrPH program is a full-time program of study designed to be completed in three years. While some students work part-time during the program, it is strongly encouraged that any employment simultaneously further the student's dissertation progress. Given the short timeline of the program, students are not permitted to work full-time during enrollment in the program. Any students with deficiencies in coursework that covered the equivalent of the content offered by the MPH at UC Berkeley must take prerequisite courses in the first year of the program for a letter grade.

The table below provides some guidance about what courses have already been approved by the faculty to count for satisfying the core and breadth requirements. Students are encouraged to peruse course offerings across the university and partner institutions (e.g. Stanford and UCSF) to find courses that further their academic interests. The DrPH Program Manager can provide a form that will allow students to petition to have a course not in the table be considered for credit. Please submit it along with a syllabus for the course as early as possible.

		Units	Semester
CE 264	Behavioral Modeling for Engin, Planning & Policy Analysis <b>Professor:</b> Walker <b>Core:</b> Research Design & Methods <b>Breadth:</b> Health Policy & Analysis	3	Spring
CYPLAN 268	Community Development Studio/Workshop <b>Professor:</b> Hutson <b>Breadth:</b> Public Health Intervention	4	Spring
CYPLAN C256	Healthy Cities <b>Professor:</b> Corburn <b>Breadth:</b> Health Policy & Analysis	3	Fall
DevP 237	Leadership, Conflict Resolution, and Community Development <b>Professor:</b> Ray <b>Core:</b> Management <b>Breadth:</b> Health Policy & Analysis	3	Spring
EDUC 271B	Intro to Qualitative Research Methods <b>Professor:</b> Little <b>Core:</b> Research Design & Methods	3	Spring
EDUC 274A	Measurement in Education and Social Sciences <b>Professor:</b> Wilson <b>Core:</b> Research Design & Methods	4	Fall
EDUC 275B	Dana Analysis in Educational Research II <b>Professor:</b> Staff <b>Core:</b> Research Design & Methods	4	Spring
EDUC 275B	Data Analysis in Educational Research II <b>Professor:</b> Rabe-Hesketh <b>Core:</b> Research Design & Methods	4	Spring
EDUC 275G	Hierarchical and Longitudinal Modeling <b>Professor:</b> Rabe-Hesketh <b>Core:</b> Research Design & Methods	3	Fall
MBA 209F	Fundamentals of Business <b>Professor:</b> Baily, Robinson, Schultz <b>Core:</b> Management	3	Fall
MBA 292A	Strategic Management of Nonprofit Organizations <b>Professor:</b> Silver <b>Core:</b> Management	2	Spring
PB HLTH 201E	Public Health Interventions <b>Professor:</b> Neuhauser, Syme <b>Breadth:</b> Public Health Intervention	2-3	Spring
PB HLTH 204G	Research Advances in Health Disparities: Multidisciplinary Perspectives <b>Professor:</b> Herd <b>Breadth:</b> Global Health	2	Spring

		Units	Semester
PB HLTH 206B	Food and Nutrition Policies and Programs <b>Professor:</b> Laraia <b>Breadth:</b> Health Policy & Analysis	3	Spring
PB HLTH 212A	International Maternal and Child Health <b>Professor:</b> Staff <b>Breadth:</b> Global Health Electives	2	Fall
PB HLTH 213A	Family Planning, Population Change, and Health <b>Professor:</b> Prata <b>Breadth:</b> Global Health	3	Fall
PB HLTH 218B	Evaluation of Health and Social Programs <b>Professor:</b> Deardoff <b>Core:</b> Research Design & Methods	4	Spring
PB HLTH 219E	Introduction to Qualitative Methods <b>Professor:</b> TBA <b>Core:</b> Research Design & Methods	3	Spring
PB HLTH 220	Health Policy Decision Making <b>Professor:</b> Keller <b>Breadth:</b> Health Policy & Analysis	3	Fall
PB HLTH 220C	Health Risk Assessment, Regulation, and Policy <b>Professor:</b> Smith <b>Breadth:</b> Environmental Health Sciences	3	Spring
PB HLTH 220D	Health Policy Advocacy <b>Professor:</b> Snyder, Iton <b>Breadth:</b> Health Policy & Analysis	3	Fall
PBHLTH 223F	Effective Public Health Negotiations <b>Professor:</b> Oxendine <b>Core:</b> Management	2	Fall
PB HLTH 224C	Advanced Health Care Organizations and Environments <b>Professor:</b> Bloom <b>Core:</b> Management	3	Fall
PB HLTH 226A	Health Economics <b>Professor:</b> Robinson <b>Breadth:</b> Health Policy & Analysis	3	Fall
PB HLTH 226C	Public Health and the Economy <b>Professor:</b> Catalano, Dow <b>Breadth:</b> Health Policy & Analysis	3	Spring
PB HLTH 227A	Health Care Finance Analysis <b>Professor:</b> Robinson <b>Core:</b> Management	3	Spring
PB HLTH 231A	Research Methods for Health Service <b>Professor:</b> Brown <b>Core:</b> Research Design & Methods	3	Spring

		Units	Semester
PB HLTH 235	Impact Evaluation <b>Professor:</b> Gertler, Colford <b>Core:</b> Research Design & Methods	3	Fall
PB HLTH 241	Statistical Analysis of Categorical Data <b>Professor:</b> Jewell <b>Core:</b> Research Design & Methods	4	Spring
PB HLTH 243C	Information Systems in Public Health <b>Professor:</b> Van Brunt <b>Breadth:</b> Public Health Intervention	2	Spring
PB HLTH 245	Introduction to Multivariate Statistics <b>Professor:</b> Li <b>Core:</b> Research Design & Methods	4	Fall
PB HLTH 250B	Epidemiological Methods II <b>Professor:</b> Colford <b>Core:</b> Research Design & Methods	4	Fall
PB HLTH 250C	Epidemiological Theory <b>Professor:</b> Staff <b>Core:</b> Research Design & Methods	4	Spring
PB HLTH 251C	Causal Inference/Meta-analysis in Epidemiology <b>Professor:</b> Smith, Steinmaus <b>Core:</b> Research Design & Methods	2	Fall
PB HLTH 251D	Applied Epidemiology Using R <b>Professor:</b> Aragon <b>Core:</b> Research Design & Methods	2	Fall
PB HLTH 252C	Intervention Trial Design <b>Professor:</b> Colford <b>Core:</b> Research Design & Methods	3	Fall
PB HLTH 252D	Intervention Trial Design <b>Professor:</b> Peterson <b>Core:</b> Research Design & Methods	3	Fall
PB HLTH 253B	Epidemiology and Control of Infectious Diseases <b>Professor:</b> Aragon, Reingold <b>Breadth:</b> Global Health	3	Spring
PB HLTH 255D	Methods in Social Epidemiology <b>Professor:</b> Ahern <b>Core:</b> Research Design & Methods	3	Spring
PB HLTH 257	Outbreak Investigation <b>Professor:</b> Reingold <b>Breadth:</b> Global Health	2	Fall & Spring
PB HLTH 260F	Infectious Disease Research in Developing Countries <b>Professor:</b> Harris <b>Breadth:</b> Global Health	2	Spring
PB HLTH 267 D	Health Impact Assessment <b>Professor:</b> Reingold <b>Core:</b> Research Design & Methods	2	Fall

		Units	Semester
PB HLTH 270	Introduction to Environmental Health Sciences <b>Professor:</b> Balmes <b>Breadth:</b> Environmental Health Sciences	3	Fall
PB HLTH 270C	Practical Toxicology <b>Professor:</b> Zhang <b>Breadth:</b> Environmental Health Sciences	2	Spring
PB HLTH 271D	Global Burden of Disease <b>Professor:</b> K. Smith <b>Breadth:</b> Environmental Health Sciences, Global Health	3	Spring
PB HLTH 271E	Science and Policy for Environment and Health <b>Professor:</b> Kyle <b>Breadth:</b> Environmental Health Sciences	3	Spring
PB HLTH 271G	Global Environmental Change for Health Scientists <b>Professor:</b> Smith <b>Breadth:</b> Global Health	3	Spring
PB HLTH 290	Applied Linear Models <b>Professor:</b> Lahiff <b>Core:</b> Research Design & Methods	4	Spring
PB HLTH C202B	Ethnic and Cultural Diversity in Health Status and Behavior <b>Professor:</b> Morello-Forsch <b>Core:</b> Ethics <b>Breadth:</b> Global Health	3	Spring
PB HLTH C242C	Longitudinal Data Analysis <b>Professor:</b> Hubbard <b>Core:</b> Research Design & Methods	4	Fall
PB HLTH 290 001	Health Issues Seminars <b>Professor:</b> Guendelman <b>Breadth:</b> Health Policy & Analysis	3	Fall
PB HLTH 200A	Current Issues in Public Health Ethics <b>Professor:</b> Halpern <b>Core:</b> Ethics	3	Spring
POLSCI 231A	Quantitative Analysis in Political Science Research <b>Professor:</b> Staff <b>Core:</b> Research Design & Methods	4	Fall
POLSCI 279	Selected Topics in American Government <b>Professor:</b> Staff <b>Core:</b> Research Design & Methods	4	Spring
PUBPOL 200	Introduction to Policy Analysis <b>Professor:</b> Mauldon, Rothstein, Bird <b>Breadth:</b> Health Policy & Analysis	4	Spring
PUBPOL 205.003	Advanced Policy Analysis <b>Professor:</b> Bardach <b>Breadth:</b> Health Policy & Analysis	6	Spring

		Units	Semester
PUBPOL 250	Political Analysis & Agency Management Aspects of Public Policy <b>Professor:</b> Anzia <b>Core:</b> Management <b>Breadth:</b> Health Policy & Analysis	4	Fall
PUBPOL 260	Public Leadership and Management <b>Professor:</b> Reich <b>Core:</b> Leadership	4	Fall
PUBPOL 270	Kids First Policy: Family, School, and Community <b>Professor:</b> Kirp, Mauldon <b>Breadth:</b> Health Policy & Analysis	4	Spring
PUBPOL 290.9	Special Topics: Holistic Leadership <b>Professor:</b> Mulhern <b>Core:</b> Leadership	3	Fall & Spring
SOCWEL 210I	Groups, Organizations and Community Dynamics <b>Professor:</b> Austin <b>Core:</b> Management, Leadership	2	Fall
SOCWEL 238C	Health Policy: A Social Welfare Perspective <b>Professor:</b> Hastings <b>Breadth:</b> Health Policy & Analysis	2	Spring
SOCWEL 252	Program Implementation <b>Professor:</b> Austin <b>Core:</b> Management	2	Fall

## STUDENT CHECKLIST FOR COMPLETION OF DrPH MILESTONES

### YEAR 1

- Create a plan for completing pre-dissertation requirements in two years and begin coursework.
- Complete 2-page summary of proposed research and prepare a presentation on this material (for the Year 1 seminar)
- Identify and confirm residency placement
- Complete second semester review with faculty mentor

### Summer between Years 1 and 2

- Complete residency requirement

### YEAR 2

- Complete draft prospectus
- Identify qualifying exam and dissertation committee chairs and members
- Present prospectus to Year 2 DrPH seminar
- Complete all required coursework
- Complete oral qualifying exam (end of Year 2 or beginning of Year 3)

- ❑ Following the qualifying exam, submit to the DrPH program manager paperwork to advance to candidacy. It should be signed by your dissertation chair and the Head Graduate Advisor of your Designated Emphasis (if you have one). You should also submit a certification of completion of CITI training if your research involves human subjects and a check for \$90 made out to the Regents of the University of California.

### YEAR 3

- ❑ Complete dissertation according to proposed prospectus and timeline
- ❑ Secure approval/sign off on the final dissertation from dissertation committee chair and members
- ❑ Submit dissertation to Graduate Division
- ❑ Present final dissertation findings to students and faculty as part of the Year 3 seminar

### (YEAR 4)

- ❑ A fourth year may be allowed as an exception in cases where the research protocol necessitates an extension of the time needed for completion of the dissertation. This requires the approval of the dissertation chair and the Program Directors.

## III. DrPH Residency Requirements

### PURPOSE

The professional development of a DrPH student is central to the academic experience. The required structured involvement of the DrPH students in the community facilitates relevant, actionable translational research and is one differentiating feature of the DrPH from the PhD programs. The Residency provides an opportunity for students to take on a significant professional challenge, to broaden their leadership perspective, and to explore research and career interests.

### RESIDENCY REQUIREMENTS

In preparation for the dissertation and research phases of the DrPH Program, each student is required to complete a Residency. The Residency is a structured field experience with specified learning objectives and outcomes that is to be completed in the summer between the 1st and 2nd academic years. Exceptions may be granted based on the timing most appropriate to the student's professional and research activities.

The duration of the Residency must be adequate to meet the learning needs of the student. Students are required to complete a Residency of 320 hours (equivalent to eight weeks at 40 hours per week). Exceptions may be granted based on concurrent experience related to the student's research and professional goals. Even with an exception, in order to satisfy the basic requirement for graduation, students must work at least 20 hours per week for 9 weeks at an approved Residency site. Students requesting a placement of less than 320 hours, but more than 180 hours, must also demonstrate in a written letter that the hours under 320 that they are requesting to be waived will be dedicated to meaningful progress on their career goals, skill development, or dissertation development in order to warrant approval. A formal Residency agreement must be finalized in the first two weeks of the residency.

Exceptions to the timing and duration of the Residency must first be discussed with the student's

faculty mentor and the DrPH Doctoral Residency Supervisor. A formal written request for exception must be submitted to the DrPH Program Chair by April 1 of the year in which the Residency is to be undertaken. Exception requests will be reviewed by the DrPH Doctoral Residency Supervisor and the student's faculty mentor prior to submission. Their comments and recommendations will be forwarded to the DrPH Program Chair, who will provide the final decision.

The Residency activities are under the joint supervision of a designated Preceptor from the organization sponsoring the Residency and the DrPH Doctoral Residency Supervisor. The Residency Preceptor will be an experienced professional working with health issues with expertise in the assigned project areas, experience and status within the organization, and an interest and competence in supervising and mentoring. The Preceptor will also share personal and organizational values, experiences, and contacts with the student to facilitate a successful DrPH Residency.

Students are required to register for the PB HLTH 297 course with the Field Residency Supervisor for 3 units of credit in the Fall Semester following completion of the Residency to receive the required academic credit for the Residency. The course will be taken on a S/U basis. The DrPH Residency process extends from the Fall Semester of the student's first year through the Fall Semester following completion of the Residency.

## **PROCESS**

### **Pre-Residency Planning**

Student will meet at least twice with the DrPH Doctoral Residency Supervisor during the first year Fall Semester to discuss career goals, research interests, and preliminary learning objectives for the Residency and to begin identification of potential Residency sites.

Student will meet at least twice with DrPH Doctoral Residency Supervisor during the first year Spring Semester to identify and finalize Residency site and Residency Preceptor and to review proposed learning objectives. The Residency site must be determined no later than April 1 of that year.

Requests for exception from the Residency requirements must be discussed with the student's faculty mentor and DrPH Residency Supervisor and must be submitted in writing to the DrPH Program Chair by April 1 of the year the Residency is scheduled to be completed.

### **Residency Activities**

Students will develop a draft Residency agreement for their placement by April 1 of the first spring semester. Students will develop this in consultation with their Preceptor and the DrPH Residency Supervisor.

Students will finalize a Residency agreement during the first two weeks of the Residency in conjunction with the Residency Preceptor, with approval from the Residency Preceptor and the DrPH Residency Supervisor. The Residency agreement incorporates organizational and student requirements (including learning objectives, planned activities, expected outcomes, and a timeline for achievement) Students will produce tangible products to demonstrate competencies developed during the placement (i.e., grant application, research analysis, policy analyses, program plans, evaluation designs, and/or article for publication). These will be retained by the DrPH Residency Supervisor as part of the student's record. Students will complete an evaluation of the Residency process (similar to a course evaluation) and provide feedback on the Residency site and Preceptor.

The Preceptor will be asked to provide formal feedback on the student's performance at the midpoint and the completion of the Residency. When feasible, the DrPH Doctoral Residency Supervisor will make a visit to the Residency site mid-way through the Residency to meet with the Preceptor and student to monitor progress on the learning objectives and other elements of the Residency agreement. This travel will be dependent on the availability of travel funding. If travel funding is limited, a formal evaluation will occur as necessary through a conference call.

### **Post-Residency Activities**

Students will register for Summer Residency units (PB HLTH 297 – Instructor is the DrPH Residency Supervisor) in the Fall Semester following the Residency. Students will meet with the DrPH Doctoral Residency Supervisor during the first month of the Fall Semester following the Residency to review the work/research products of the Residency and debrief on the Residency experience.

## **IV. DrPH Qualifying Examination**

### **PREQUIRESITES**

To be eligible to take the Qualifying Examination, a student must:

1. Be registered for the semester in which the exam is taken or, during the winter or summer break, be registered in either the preceding or the following semester;
2. Have completed at least one semester of academic residence;
3. Have at least a B average in all work undertaken in graduate standing;
4. Have no outstanding grades of "Incomplete";
5. Have satisfactorily completed all DrPH breadth and core requirements OR be completing these requirements by the end of the same semester when the orals exam is taken.

### **OVERVIEW**

The DrPH Qualifying Examination has two components: (1) preparation of a detailed written *dissertation prospectus* and (2) an *oral examination* of the student's depth and breadth of knowledge in his or her defined areas of expertise. The dissertation prospectus must be approved by the dissertation chair prior to taking the oral examination. The prospectus must also be reviewed by each member of the Qualifying Exam committee at least once prior to the oral examination. Once the prospectus has been approved, it should be submitted to the DrPH Program Manager to be added to the program's prospectus library.

For the Qualifying exam, students will define, in consultation with committee members, three field areas of expertise for examination that constitute areas of knowledge needed for successful completion of their dissertation project. These areas must be approved by the chairs of both the Qualifying Exam and Dissertation committees. The student should then ensure that there is at least one exam committee member who is qualified to test the student in each of these areas of expertise.

### **CONSTITUTING THE QUALIFYING EXAM COMMITTEE**

The student should consult with his or her faculty adviser concerning appropriate members of the faculty to serve on the Qualifying Examination Committee and take into account Graduate Division regulations on committee appointments (summarized below). Committee members should be selected to represent three areas of expertise relevant to the student's proposed

research as well as the broad scope of Public Health. The student is expected to speak directly with prospective Examination Committee members about their willingness to serve and to define their three field areas.

The student's proposed Qualifying Examination Committee will be reviewed by the School's Associate Dean of Education, Equity, and Inclusion prior to submission to the Dean of the Graduate Division for approval. The Graduate Division will notify the student, the members of the committee, and the Associate Dean of Education, Equity, and Inclusion in Public Health of their official approval of the committee to conduct the Qualifying Examination.

### **Graduate Division Requirements for Faculty Membership on Qualifying Examination Committees**

- » The Qualifying Examination Committee is composed of four faculty members: a chair, an Academic Senate representative from outside the School of Public Health, and at least two additional members.
- » The Chair of the Committee must be a member of the Berkeley Academic Senate from the School of Public Health. (Senate members include individuals with the following titles: Professor, Associate Professor, Assistant Professor, Professor Emeritus, Professor in Residence, University Professor, Senior Lecturer with security of employment, and Lecturer with security of employment.) The faculty member who will chair the dissertation committee cannot serve as chair of the Qualifying Exam.
- » The UC Berkeley Academic Senate representative must be chosen from outside of the School of Public Health. This person ensures that the committee is conducted in a fair and professional manner.
- » The Additional Members must be chosen and added such that at least half of the committee members are from the Berkeley Division of the Academic Senate in the School of Public Health. Other members may be Berkeley Academic Senate members in another degree granting program or approved non-Academic Senate members (in the student's degree granting program, another degree granting program, or in exceptional cases from outside UC Berkeley).

Approved non-Academic Senate faculty are faculty who have received blanket approval for service on examination committees by the Dean of the Graduate Division. The student should check with the DrPH Program Manager to determine whether a non-Senate faculty member has received blanket approval from the Graduate Division and to confirm that no additional documentation is required.

Exceptional appointments are required for non-members of the UC Berkeley Academic Senate who have not previously received blanket approval to serve on Qualifying Examination Committees. Requests for exceptional appointment to serve as a member for a single committee entail submitting a *Request for Exception Form (for Non-Academic Senate Member to Serve on Higher Degree Committee)* to the Graduate Division accompanied by the individual's curriculum vitae and bibliography. If a non-Academic Senate member has been approved previously for a single committee service and has no blanket approval, a new memorandum is required for each additional request for service on a single committee. If the prospective appointee is a lecturer or is not regularly affiliated with this campus, the request is to be accompanied by a statement that the service will be performed without stipend.

In preparation for the exam and the field areas, the student should meet at least once with each committee member to clarify expectations for what she or he is expected to prepare for the exam. It can be useful for the student to prepare a preliminary reading list in each area of expertise as a starting point for this discussion with each of their Qualifying exam committee members. Committee members can also request additional readings that the student should cover to prepare their field areas.

### **DISSERTATION PROSPECTUS**

The *dissertation prospectus* is developed by the student in consultation with their dissertation chair, qualifying exam chair, and other committee members. It provides a description of the proposed research question(s), a concise background and literature review that clearly describes how the student's proposed project builds on previous work and justifies the need for the study, and a description of the proposed methodological approach that will be used to answer the research question. The dissertation prospectus should be given to the Qualifying exam committee chair and the exam committee members well in advance of the Qualifying exam date (no less than four weeks prior is recommended) so that exam committee members have ample time to provide feedback and the student has time to incorporate that feedback into a revised prospectus prior to the examination. Once the prospectus has been approved, it should be submitted to the DrPH Program Manager to be added to the program's prospectus library.

### **ORAL EXAMINATION**

The oral examination will include questions to focus the discussion on core and chosen specialty areas in addition to the content of the dissertation prospectus. The oral exam is designed in part to test the student's knowledge of and familiarity with conceptual, methodological, substantive, and related areas necessary for successful completion of the dissertation project and research questions as outlined in the prospectus. The student should prepare a short presentation of their prospectus for the beginning of the exam (typically 15 minutes or less). The majority of discussion during the oral exam will focus on the student's areas of expertise and the prospectus. Because the student will have completed course work in at least four DrPH core areas (management, research design and methods, public health ethics, and leadership) as well as two of the four breadth areas (health politics and policy analysis, public health interventions, global health sciences, and environmental health sciences), she or he should expect to be tested in these areas as well.

The Qualifying Examination (prospectus and orals exam) should be completed by the end of the spring semester of the second year or at the beginning of the fall semester of the third year at the latest. In cases where this is not possible, the student and the Chair of the Qualifying Exam Committee are required to submit a letter to the DrPH Program Chair justifying the need for an extension to complete the qualifying exam. In the event of this approval, students are required to advance to candidacy before the end of the first semester of their third academic year.

### **APPLYING FOR THE QUALIFYING EXAM**

Students must apply to take the Qualifying Examination no later than three weeks before the exam date is scheduled as the Graduate Division needs this time to review the application. Students must list on their applications at least three subject areas to be covered during the examination. The Graduate Degrees Office is unable to approve applications that do not contain this information. The application is available from the Office of Student Services and under [Forms & Applications](#) on the [Graduate Division website](#). Students may not take the exam before being notified that admission to the exam has been approved. The application and any necessary requests for

exception must be submitted to the Office of Student Services & Admissions for review and signature of the Associate Dean of Education, Equity, and Inclusion.

Before submitting the Qualifying Exam application, students should ensure that their summer residency paperwork is on file with the Office of Student Services & Admissions as well as a current Yearly Assessment form signed by the student's faculty mentor.

Students must contact the DrPH Program Manager in the Office of Student Services & Admissions well before submission of the Application for Admission to the Qualifying Exam to ensure that proper forms are on file and that Graduate Division requirements are met.

Following approval, a student's eligibility to take the Qualifying Exam is valid for 18 months. Eligibility continues even if the student fails an exam but is recommended for reexamination. However, if the student does not take the examination during the 18 month approval period, he or she must file a new application to schedule an exam.

### **SCHEDULING THE QUALIFYING EXAM**

To schedule the examination, students should confer with the chair of their Qualifying Exam Committee to determine his or her dates of availability and then confer with their remaining committee members to determine a date that works for all. Students should also set exam dates that allow for adequate preparation time for studying their field areas, meetings with committee members, and dissertation prospectus revisions based on feedback from Qualifying exam committee members. Once an exam date has been set, students should contact the Office of Student Services to reserve a room for both a practice session with peers and for the actual exam. The staff will reserve the DrPH LCD projector and laptop for their use. If the DrPH equipment isn't available, the staff will reserve the School of Public Health equipment for the student.

One week before the qualifying exam, the student should submit to the Office of Student Services & Admissions two completed forms: the *“Report to the Graduate Division on the Qualifying Examination for Admission to Doctoral Candidacy”* and the *“Plan B – Application for Candidacy for the Doctoral Degree”*.

Two days before the exam date, the administrative staff will give the Qualifying Exam Chair the student's file and an envelope with the above forms for the committee to sign when the student passes the exam. At the end of the exam and after the student and committee have signed both forms, the student's folder and the signed forms should be returned to the Office of Student Services by the Chair of the committee.

### **FORMAT OF THE QUALIFYING EXAM**

Although the Qualifying Exam Chair is at liberty to establish the format of the exam session, he or she typically discusses this with the student. The following format is typical:

The exam takes approximately 2.5 to 3 hours, sometimes with a break in the middle.

- » At the beginning of the exam, the Chair asks the student to leave the room for a few minutes, during which time the chair invites committee members to offer their assessment and to review the student's file if needed. The chair facilitates discussion during this and each subsequent part of the examination.
- » The student is then asked to talk briefly (3-5 minutes) about his or her background and interests and then provide a short formal presentation (15 minutes) on their dissertation prospectus.

- » The chair then invites examiners, typically in the order that the student has requested, to take about 20-25 minutes each to ask their questions. This period is dedicated to a demonstration of expertise in the relevant field areas defined by the student with consultation from committee members, the prospectus, and DrPH core competencies.
- » At the conclusion of the questioning, the student is again asked to leave the room while the examiners discuss their reactions to the student's demonstrated knowledge and command of the material and decide whether she or he should receive a pass with distinction, pass, conditional pass, partial failure, or no pass.
- » The student is then invited back into the room, the chair reports the committee's decision, and he or she facilitates discussion of additional feedback on the dissertation prospectus. (Note: "Pass with distinction" is normally reserved for the most exceptional combination of written and oral examination components. A "conditional pass" should include clear delineation by committee members of what the student will need to do to receive a pass. This conditional pass should be followed up by a written communication by the committee chair to the student and include a proposed timeline and process for completion. Once conditions for a pass are met, the orals exam chair will ensure that the forms are signed and submitted to the Head Academic Adviser and the Graduate Division.)
- » Following the Qualifying Examination, the chair will collect signatures from committee members and transmit the signed Report to the Graduate Division on the Qualifying Examination to the DrPH Program Manager in the Student Services Office.

The exam must be held with the entire committee present for the length of the exam. If a committee member cannot attend, the exam should be rescheduled, or the committee should be reconstituted. Students may not be examined privately by committee members.

If an emergency, such as an illness or an accident, occurs just before the exam, the committee chair should call the Associate Dean of the Graduate Division to explain the problem and request permission to conduct the exam under special circumstances. (Graduate Dean's Office, 642- 5472).

A committee member who is absent for more than half the exam must write a memo to the Graduate Division's Associate Dean explaining the reason for the absence and presenting an opinion of the student's performance on topics covered during the time the committee member attended the exam.

If a student fails to appear for the Qualifying Examination, both the committee chair and the student should submit reports to the Graduate Division's Associate Dean as soon as possible. The Administrative Committee of the Graduate Council may rule failure to appear at the scheduled time as a failed examination.

If the qualifying examination is graded as a failure or partial failure, the student has the opportunity to take a second examination if so recommended by the examining committee. If a student is reexamined, the committee for the second examination must be the same as for the first exam. The second examination must be taken more than three months after the first failed exam. If the student fails the second examination, the student is dismissed from the DrPH program.

## V. DrPH Dissertation

### OVERVIEW

Writing and filing your doctoral dissertation is one of the final steps leading to the award of your graduate degree. Your manuscript is a scholarly presentation of the results of the research you conducted at the School of Public Health. UC Berkeley upholds the tradition that you have an obligation to make your research available to other scholars. This is done when you submit your dissertation for publishing through the [ProQuest online administration system](#) and the Graduate Division forwards your manuscript to the University Library. Your dissertation is subsequently [published online](#) in the UC-system's scholarship repository ([eScholarship](#)) and made available within ProQuest/UMI after your doctoral degree is officially conferred by the Academic Senate.

Your Dissertation Committee supervises the intellectual content of your manuscript, and your Committee Chair will guide you on the arrangement within the text and reference sections of your manuscript. For this reason, students should be selective in constituting the Dissertation Committee and Dissertation Chair.

### CONSTITUTING THE DISSERTATION COMMITTEE

Students should consult with their faculty adviser concerning appropriate members of the faculty to serve on the Dissertation Committee. The Dissertation Committee requires a minimum of three faculty members: a chair, an Academic Senate representative, and an additional member. The committee can be larger if the student and faculty adviser agree that inviting more members would contribute to the quality of the dissertation and as long as half of the members of the committee are members of the Berkeley Division of the Academic Senate in the School of Public Health. Students are expected to speak directly with prospective Dissertation Committee members about their willingness to serve.

- » The Chair of the Dissertation Committee must be a member of the Berkeley Academic Senate from the School of Public Health. If the research is being conducted with a non-Academic Senate faculty member, the two may be listed as co-chairs. The Dissertation Chair cannot be the same person that served as the student's Qualifying Examination Chair. However, the Qualifying Examination Chair may serve as a student's Dissertation Co-Chair.
- » The Academic Senate representative must be chosen from a school or department other than the School of Public Health. There are no exceptions to this rule. This member serves as the representative of the Dean of the Graduate Division.
- » Additional dissertation committee members may be UC Berkeley Academic Senate faculty members, approved non-Academic Senate faculty members from inside or outside the School, or one-time non-Academic Senate appointees approved by the Dean of the Graduate Division (see section below on "exceptional appointments"). Academic Senate faculty from other UC campuses or from Stanford may serve as committee members without special approval.

The proposed Dissertation Committee is reviewed by the School's Associate Dean of Education, Equity, and Inclusion prior to submission to the Dean of the Graduate Division for approval. The Graduate Division will notify the student, the committee members, and the Associate Dean of the official dissertation committee.

Approved non-Academic Senate faculty are faculty who have received blanket approval for service on dissertation committees by the Dean of the Graduate Division. The student should check with the DrPH Program Manager to determine whether a non-Senate faculty member has received blanket approval from the Graduate Division and to confirm that no additional documentation is required.

Exceptional appointments are required for non-members of the UC Berkeley Academic Senate who have not previously received blanket approval to serve on Dissertation Committees. Requests for exceptional appointment to serve as a member for a single committee entail submitting a *Request for Exception Form (for Non-Academic Senate Member to Serve on Higher Degree Committee)* to the Graduate Division accompanied by the individual's curriculum vitae and bibliography. If a non-Academic Senate member has been approved previously for a single committee service and has no blanket approval, a new memorandum is required for each additional request for service on a single committee. If the prospective appointee is a lecturer or is not regularly affiliated with this campus, the request is to be accompanied by a statement that the service will be performed without stipend.

### **ADVANCEMENT TO CANDIDACY**

To advance to candidacy, a student must submit the *{Plan B - Application for Advancement to Candidacy}* form to the DrPH Program Manager in the Student Services Office. This form should not be submitted until the final dissertation prospectus and the timeline for completion of the dissertation have been approved/signed off by the dissertation chair and the dissertation committee members. The application for candidacy must include a check in the amount of \$90, made payable to the UC Regents. The advancement form should be filed no later than the end of the semester following the one in which the student passed the Qualifying Examination. Examinations more than five years old are not accepted as representing current knowledge.

When doctoral students have advanced to candidacy, the Graduate Division emails students a letter that includes information on writing a dissertation, finding financial support for research and writing, and using campus resources during this new phase of doctoral study (Graduate Degrees Office, 642-7330). Additional information regarding [academic skill building workshops](#) are available on the [Graduate Division website](#).

Students may also receive a one-time stipend from the Grossman Endowment depending on the availability of funds. The DrPH Program Manager will request a payment of the Grossman award on behalf of each student upon official advancement to candidacy per the Graduate Division.

Doctoral students who have advanced to candidacy for the doctorate receive a 100 percent reduction in the annual nonresident tuition for a maximum of three calendar years (calculated from the semester after which they advanced), whether registered or not. Any nonresident student who enrolls after the three-year calendar period will be charged the full nonresident tuition rate at that time.

To qualify for this reduction, the application for doctoral advancement must be received in the Graduate Services Degrees Unit by the first day of instruction of the semester for which the reduced tuition is assessed. Students who plan to file the application on the deadline day should be prepared to pay at least 20 percent of their assessed fees by the first fee payment deadline. For the reduced fee to be reflected on the CARS billing statement, however, students should apply for advancement at least 6-8 weeks before the beginning of the semester to allow sufficient processing time.

Each semester after advancement to candidacy, students should register for 12 units of independent research with their dissertation chair. The course number for independent research is Public Health 299. Your dissertation chair must send an email to the Curriculum Planner at [sphcourses@berkeley.edu](mailto:sphcourses@berkeley.edu) in order to request a Course Control Number.

In most instances, the dissertation is completed prior to the end of the Spring semester of the third year. As part of their DrPH dissertation, the student is expected to examine, analyze, and suggest solutions 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 with the papers.

### **DISSERTATION GUIDELINES**

Acceptable dissertation projects will be broadly defined to reflect the historic and current interests of UC Berkeley DrPH students. The dissertation will be *problem or opportunity focused*. The goal is to identify an important public health problem or opportunity and develop an appropriate solution or strategy.

As such, the results might be targeted at public and/or private policy makers, policy influentials, and/or program managers and corporate decision-makers with specific information to inform, improve, and revise existing programs or initiate new, needed, or especially effective programs.

Examples of dissertation research approaches include but are not limited to: examination of the health status of a group, evaluation or other critical assessment of an intervention or policy being promoted or implemented, analysis of management issues, analysis of health policy or practice issues, assessment of community assets, transdisciplinary research, framing of public health problems, community based participatory research, epidemiologic studies, and methodological contributions.

Should the student and/or the student's Dissertation Committee have any question as to whether the student's research approach is appropriate for a *problem or opportunity* focused dissertation, the question should be forwarded to the DrPH Program Chair for his or her opinion. If the approach is found to be an exception, a formal request for exception must be approved by the student's Dissertation Committee and the DrPH Program Chair.

### **FORMAT OF THE DISSERTATION**

The format of the dissertation will be one of three options: a standard dissertation, the three paper option, or an alternate single dissertation format acceptable to the student's Dissertation Committee.

**Option 1.** A *standard dissertation* will usually incorporate the following specified content:

- » Statement of the public health problem or opportunity and the resulting research question
- » Critical review of the scientific literature relevant to that problem or opportunity
- » Conceptual framework that includes the relevant social, scientific, economic, political, environmental, human rights, administrative, and/or cultural context
- » Description of the study design or data sources and analytic methods used to answer the research question.
- » Analytic results and their implications for the problem or opportunity under study

- » Recommendations based on the results of the study
- » Strategy for implementing and evaluating the recommendations, taking into consideration the contextual factors identified in the conceptual framework

**Option 2.** The *three paper option* format will include three articles of publishable quality along with (1) a separate introduction and (2) an integrative conclusions section. The three papers will be written in the format required by peer-reviewed journals identified by the student and approved by their Dissertation Committee. Dissertation Committees may require additional documentation to assess the student's work (e.g., extended methods section). This additional work should be part of the integrating documents and not the individual articles which should be of publishable length and content. Exception may be sought to substitute an alternate product for one of the papers (e.g., DVD, website, or educational pamphlet). The exception process will include approvals by the student's Dissertation Committee and the DrPH Program Chair.

**Option 3.** Alternate single dissertation formats (e.g., a book) are acceptable if approved by the student's Dissertation Committee.

There will be no final dissertation defense. Students may be asked to present their dissertation findings in a forum sponsored by the DrPH Program either in the semester they graduate or within a year after graduating. The presentation is not a requirement for graduation.

## RESOURCES

Resources to assist students with writing a dissertation and seeking funding:

- » DrPH library materials, including DrPH Dissertations
- » Dissertation Writing Partner Online Bulletin Board: [grad.berkeley.edu/academic-progress/dissertation](http://grad.berkeley.edu/academic-progress/dissertation)

The Graduate Division encourages students to bring a copy of the dissertation to 318 Sproul Hall for a "pre-filing consult". It is recommended that this be done this at least a couple of weeks before filing. The staff is happy to review the dissertation title page, abstract, and basic document format and will alert the student of any problems that could result in having the dissertation rejected.

## FILING THE DISSERTATION

Doctoral students are required to complete two surveys before they can file their dissertation. These surveys are available at [grad.berkeley.edu/academic-progress/dissertation](http://grad.berkeley.edu/academic-progress/dissertation) under the "Procedure for filing your dissertation" section, in Step 4. Please take the time to complete the Survey of Earned Doctorates (SED) and the Survey of Doctoral Students' Opinion before going to 318 Sproul Hall to file.

To file a dissertation students must be registered or on approved filing fee status for the semester in which they file. To be eligible to file a dissertation in the summer, students must enroll in Summer Sessions for a minimum of 3 units and have paid their registration fees prior to filing. Students filing in Summer Sessions will be awarded their degree in December. The current fees for Summer Sessions are accessible on the web at: [summer.berkeley.edu/registration/fees](http://summer.berkeley.edu/registration/fees).

Academic Senate regulations require that all work for a degree must be completed by the last day of the semester in which the degree is conferred. Degrees are conferred in December and in May.

The last day to file a dissertation with the Graduate Division is the last day of each semester. The filing deadlines are strictly observed. To obtain the specific dates, please consult the Registrar's web site ([registrar.berkeley.edu](http://registrar.berkeley.edu)) for the student calendar. It is strongly recommended not to wait until the last day to file.

Once the manuscript is in final form and the committee members have signed the approval page of the dissertation, the student is ready to file. The dissertation should be submitted to Graduate Services: Degrees, 318 Sproul Hall, before the end of the semester in which the degree will be conferred. The Degrees Unit will verify the student's registration or filing fee status and check all of the submission requirements. For details see the Graduate Division website: [www.grad.berkeley.edu/policy/](http://www.grad.berkeley.edu/policy/). 

## **Areas of Study**

# **ENVIRONMENTAL HEALTH SCIENCES**

**(MPH, MS, PhD)**

# ENVIRONMENTAL HEALTH SCIENCES (MPH, MS, PhD)

## I. EHS Programs

Introduction

Mission

Overview of Degree Programs

## II. EHS MPH Requirements

Program Overview

Competencies

Curriculum

Sample Schedule

For all EHS MPH Students

For Industrial Hygiene Specialty Students

For GHE MPH Students

Comprehensive Exam

## III. EHS MS Requirements

Program Overview

Competencies

Curriculum

Sample Schedule

For EHS MS Students

For GHE MS Students

Comprehensive Exam

Requirements for the MS/PhD Program

## IV. EHS PhD Requirements

Program Overview

Competencies

Curriculum

GSI Requirements

Examinations

Advancement to Candidacy

Dissertation

## I. EHS Programs

### INTRODUCTION

Environmental Health Sciences is a multi-disciplinary field that brings together knowledge and tools from several areas to build capacity to understand and address environmental health issues. As you are probably aware, environmental factors are estimated to be responsible for 25-40% of the burden of disease. There are also issues of equality as some groups are more affected and more susceptible including infants and children, pregnant women, and people with less money and power.

Environmental factors are estimated to be responsible for 25-40% of the burden of human ill-health around the world and seriously affect the most vulnerable members of society, such as young children, pregnant women, and the poor. The Environmental Health Sciences (EHS) curriculum prepares students to assess the health impacts of physical, chemical, and biological agents in the environment and to explore means to quantify and control exposures. Specialty areas within EHS include exposure assessment, toxicology, environmental and occupational epidemiology, industrial hygiene, the global health and environment (GHE) program, ergonomics, and environmental health policy. These areas of emphasis are described below.

**Toxicology and Molecular Epidemiology** - Measurement of dose-response relationships for environmental chemicals; investigations of mechanisms of toxicity; application of bioassays for evaluating chemical toxicity; development of biological markers of chemical exposure and effect; understanding how exposures to environmental chemicals, including pesticides and industrial contaminants, affect human health across a wide range of environments and settings.

**Exposure Science** - Evaluation of exposures including the design and development of measurement techniques or strategies; air and water pollution studies including design of control strategies; studies of sources of pollution and their relationship to human health.

**Environmental Health Policy** - Draws upon assessment methods including risk assessment, to focus on strategies to prevent exposures to environmental and occupational hazards and conditions, with an emphasis on communication strategies for diverse audiences and consideration of equity.

**Environment and Infectious Disease** - Examination of the infectious disease consequences of environmental processes, including weather, climate extremes, hydrology, development projects, and land use change; quantitative characterization of the dynamics of anthroponotic and zoonotic diseases of global significance with respect to how environmental factors shape their distributions, intensity, environmental fate, transport, and persistence.

**Environmental and Occupational Epidemiology** - Involves human population studies that address the health effects caused by exposure to chemical and physical agents. Although Occupational and Environmental Epidemiology is one of the core areas in EHS, students whose primary interest is epidemiology can also apply for admission to the Division of Epidemiology. While based in that Division, students may enroll in EHS courses and work with faculty in both divisions.

**Industrial Hygiene** - Recognition of health risk caused by exposure to toxic chemicals, harmful physical or infectious biological agents and ergonomic factors, evaluation of exposures by various measurement techniques or strategies involving worksite air sampling and biological

monitoring, formulation of controls for exposures by administrative, engineering, or personal protective measures.

**Ergonomics** - Recognition and amelioration of work-related risk factors for chronic musculoskeletal disorders through knowledge of pathophysiology, biomechanics, anthropometry, and engineering. The goal of Ergonomics is to improve design of workstations to prevent injury.

**Global Climate Change** - Estimating how changes to the global climate system present challenges for public health; emphasizing the characterization, projection and prevention of the adverse health impacts of global climate change in diverse populations; disseminate policy-relevant findings on climate change impacts, strategies for reducing greenhouse gas emissions, and approaches for increasing resilience to climate change.

**Global Health and Environment** - A unique emphasis offering an interdisciplinary educational experience designed to train the next generation of global health leaders with the skills necessary to partner with developing countries to achieve improvements in public health through environmental sustainability; focuses on the analytical and practical skills necessary to protect the local, regional, and global environment while achieving sustainable development; addresses some of the most pressing and complicated environmental health challenges facing the global community.

## MISSION

The mission of the Environmental Health Sciences (EHS) program is to train the next generation of leaders in public health and professional practice at the interface of environment and health. Students in the Environmental Health Sciences MPH program learn how human populations—especially the most vulnerable members of society, such as young children, pregnant women, workers, and the poor—are affected by environmental exposures, ranging from microbial and chemical contamination of water, air and other media, to climate change, industrialization, and unplanned urbanization. Students develop skills in epidemiology, global environmental health, statistics, and risk analysis in a global context, and can apply what they learn to address some of the most pressing and complicated environmental health challenges facing the global community. The curriculum emphasizes a sophisticated understanding of the sources, pathways, exposures, health impacts, and control measures for global environmental pollutants—including pesticides, air pollution, vector-borne diseases, greenhouse gases, waterborne infectious diseases, and industrial contaminants—at the household, workplace, community, regional, and global levels.

## OVERVIEW OF DEGREE PROGRAMS

The academic degrees (MS, joint MS/PhD, and PhD) are granted by the Berkeley Graduate Division through the EHS Graduate Group. (A Graduate Group is a multi-disciplinary academic unit comprised of faculty members from more than one department who have common interests and expertise in an area of study that cuts across disciplinary lines. The EHS Graduate Group is comprised of faculty from several School Divisions, the College of Engineering, the College of Natural Resources, and the College of Environmental Design. Section 2.3 lists current members of the EHS Graduate Group.) Students in the EHS MS and PhD programs are primarily interested in performing original research.

A source of confusion is the fact that EHS is the name of both the Berkeley Graduate Group and one of the divisions in the School of Public Health (SPH). While the EHS Graduate Group is responsible

for the academic degree programs (MS, MS/PhD and PhD), the EHS Division of the School is responsible for the professional degree programs (MPH and DrPH). Although students in the MS, MS/PhD and PhD programs are officially associated with the EHS Graduate Group, for administrative purposes they are regarded as being enrolled in the School and many administrative matters are handled through the School.

Academic matters affecting MS and PhD students must be approved by Martyn Smith or Dr. Ellen Eisen, who jointly act as the Head Graduate Adviser of the EHS Graduate Group, who, in this capacity, reports to Fiona M. Doyle, Dean of the Graduate Division. The professional degrees in EHS (MPH and DrPH), are under the jurisdiction of the Dean, Dr. Stefano Bertozzi. Dr. Ellen Eisen serves as Division Head, and Dr. Justin Remais serves as the Vice Head of the EHS Division and represent EHS faculty within the School. Students in both the academic and professional degree programs have individual faculty advisers based on their specialty areas within EHS.

All paperwork required for MS, MS/PhD and PhD students in EHS is handled through the EHS Program Coordinator, Norma Firestone, at 761 University Hall. Ms. Firestone is the student's primary resource for dealing with administrative needs, forms, degree requirements, etc.

## II. EHS MPH Requirements

### **PROGRAM OVERVIEW**

MPH students in the Environmental Health Sciences division are trained to become leaders in identifying—and preventing—adverse health impacts of physical, biological, and chemical agents in the environment. Our MPH programs provide an opportunity to study, and develop solutions to, the most profound global environmental changes that are affecting the health of populations around the world. EHS offers two MPH degrees: an MPH in Environmental Health Sciences, and an MPH in Global Health and Environment.

#### **MPH in Environmental Health Sciences**

Students in the Environmental Health Sciences MPH program learn how human populations—especially the most vulnerable members of society, such as young children, pregnant women, workers, and the poor—are affected by environmental exposures, ranging from microbial and chemical contamination of water, air and other media, to climate change, industrialization, and unplanned urbanization. The curriculum prepares students to assess the health impacts of physical, chemical, and biological agents in the environment and workplace, and to advance means for their measurement and control. This program provides interdisciplinary training in epidemiology, statistics, mechanisms of toxicity, microbial risk assessment, exposure science, occupational epidemiology, and policy analysis. Students learn to apply these skills to environmental health challenges in the Bay Area, in the United States, and in settings around the world. The Division offers two MPH programs in Environmental Health Sciences—a 2-Year MPH Program and a 1-Year MPH Program for students finishing their fourth undergraduate year at UC Berkeley.

#### **MPH in Global Health and Environment**

The Global Health and Environment MPH program provides an opportunity to study, and develop solutions to, the most profound global environmental changes that are affecting the health of populations around the world. This transdisciplinary MPH program emphasizes the

analytical and practical skills necessary to protect the local, regional, and global environment, while achieving sustainable development. Students develop skills in epidemiology, global environmental health, statistics, and risk analysis in a global context, and can apply what they learn to address some of the most pressing and complicated environmental health challenges facing the global community. The curriculum emphasizes a sophisticated understanding of the sources, pathways, exposures, health impacts, and control measures for global environmental pollutants—including pesticides, air pollution, vector-borne diseases, greenhouse gases, waterborne infectious diseases, and industrial contaminants—at the household, workplace, community, regional, and global levels. The Division offers a 2-year MPH program in Global Health and Environment.

## COMPETENCIES

Upon completion of the MPH program, graduates will be able to:

- » Identify the sources and health effects of major environmental and occupational hazards.
- » Describe general mechanisms of toxicity relevant for these hazards and interpret data to assess hazards.
- » Describe how environmental and occupational exposures are measured.
- » Interpret epidemiologic data to assess evidence for health effects caused by environmental and occupational exposures.
- » Identify factors that affect susceptibility and vulnerability of sub-populations to health effects of environmental and occupational exposures.
- » Use risk assessment and other methods to assess hazards and identify ways to reduce them.
- » Describe health policy and regulatory institutions in the United States and worldwide and develop approaches to improve health.
- » Define environmental justice and how it relates to environmental health
- » Understand the health risks posed by the built environment and how to improve community environments.
- » Explain climate change and potential impacts on health, as well as major mitigation and adaptation strategies.
- » Organize written and oral material for EHS presentations and communicate to diverse audiences.

## CURRICULUM IN ENVIRONMENTAL HEALTH SCIENCES (EHS) MPH PROGRAMS

The EHS curriculum prepares students to assess the health impacts of physical, chemical, and biological agents in the environment and workplace, and the means for their measurement and control. EHS integrates several disciplines with emphasis on assessment of exposures to environmental contaminants, global environmental health, toxicology, environmental and occupational epidemiology, infectious disease and environment, risk assessment, control strategies, and policy solutions. Students learn to apply tools in these disciplines to problems in both domestic and international settings.

## REQUIREMENTS FOR THE MPH IN ENVIRONMENTAL HEALTH SCIENCES (EHS)

The curriculum for MPH students is a combination of elements developed by the School of Public Health for all students and those developed by the EHS Division for its students.

**SPH Required Courses**

- PB HLTH 200J Health Policy & Management Breadth (Fall)  
 PB HLTH 200L Health and Social Behavior Breadth (Fall)

**Essential Methods Courses**

- PB HLTH 250A & PB HLTH 250B Epidemiologic Methods I or II  
 PB HLTH 142 Biostatistics – Probability and Statistics (Fall and Spring)  
 PB HLTH 145 Biostatistics – Continuous Outcome Data (Fall)

**EHS Core Courses**

- PB HLTH 270 Introduction to Environmental Health Sciences (Fall)  
 PB HLTH 270B Toxicology (Spring)  
 PB HLTH 270A Exposure Assessment and Control I (Spring)  
 PB HLTH 220C Risk Assessment, Regulation, and Policy (Spring)  
 PB HLTH 271E Science and Policy for Environmental Health (Spring)

**“Selectives” (Students must take at least one of these)**

- PB HLTH 256 Human Genome, Environment, and Public Health (Spring)  
 PB HLTH 254 Occupational and Environmental Epidemiology (Offered Spring 2018)  
 PB HLTH 290 Environmental Determinants of Infectious Disease (Fall)  
 CY PLAN 204C Introduction to GIS and City Planning (Spring)

**Seminar and Field Placement**

- PB HLTH 292 MPH Seminar (3 units, graded)  
 PB HLTH 297 (Enroll in final year spring semester)

**Strongly Recommended Electives**

- PB HLTH 269E Current Topics in Environmental Medicine, (3 units) (Fall)  
 PB HLTH 254 Occupational and Environmental Epidemiology (3 units) (Spring)  
 PB HLTH 204C Introduction to GIS and City Planning  
 (City & Regional Planning) (4 units) (Spring)  
 CE 265 Traffic Safety and Injury Prevention (3 units) (Fall)  
 PB HLTH 290 Social Justice and Worker Health (2-3 units) (Fall, Spring)

**Advanced EHS Courses – Electives**

- PB HLTH 267B Characterization of Airborne Contaminants (3)  
 (Spring, alternating odd years)  
 PB HLTH 290 Exposure Assessment & Control II (Spring, alternating even years)  
 PB HLTH 269C Occupational Biomechanics (3) (Spring)  
 PB HLTH 269D Ergonomics Seminar (2) (Fall)  
 PB HLTH 269E Current Topics in Environmental Medicine (3) (Fall)  
 PB HLTH 271C Drinking Water and Health (3) (Spring)  
 PB HLTH 290X Global Air Quality and Public Health (2) (Spring)  
 PB HLTH 271G Public Health Implications of Global Climate Change (3) (Spring)

---

**NOTE:** Additional elective units are required.

## SAMPLE SCHEDULE FOR EHS MPH STUDENTS

### First Year Program (A)

Fall Semester		Units
PB HLTH 142	Probability & Statistics	4
PB HLTH 200J	Health Policy & Management	2
PB HLTH 250A or B	Epidemiologic Methods	3 or 4
PB HLTH 270	Introduction to Environmental Health Sciences	3
PB HLTH 200L	Health and Social Behavior	2
Spring Semester		Units
PB HLTH 270A	Exposure Assessment & Control I	3
PB HLTH 270B	Toxicology	3
	Selective(s)	3 or 4
	Elective(s)	2-7
Summer Semester		Units
	Internship, full time (Register Fall 207)	3

### Second Year Program (A)

Fall Semester		Units
PB HLTH 145	Statistical Analysis of Continuous-Outcome Data or another Biostatistics Course	4
	Selective(s)	3 or 4
	Elective(s)	2-7
Spring Semester		Units
PB HLTH 220C	Health Risk Assessment, Policy & Regulation	3
PB HLTH 271E	Science and Policy for Env. & Hlth or, PB HLTH 220 Health Policy Decision Making (Fall)	3
	Selective(s)	3 or 4
	Elective(s)	5-8

**NOTE:** Additional elective units are required.

### REQUIREMENTS FOR THE MPH IN GLOBAL HEALTH AND ENVIRONMENT (GHE)

This transdisciplinary MPH program emphasizes the analytical and practical skills necessary to protect the local, regional, and global environment, while achieving sustainable development. Students develop skills in epidemiology, global environmental health, statistics, and risk analysis in a global context, and can apply what they learn to address some of the most pressing and

complicated environmental health challenges facing the global community. The curriculum emphasizes a sophisticated understanding of the sources, pathways, exposures, health impacts, and control measures for global environmental pollutants—including pesticides, air pollution, vector-borne diseases, greenhouse gases, waterborne infectious diseases, and industrial contaminants—at the household, community, and global levels.

### SPH Required Courses

- PB HLTH 200J Health Policy & Management Breadth (Fall)
- PB HLTH 200L Health and Social Behavior Breadth (Fall)

### Essential Methods Courses

- PB HLTH 250A & PB HLTH 250B Epidemiologic Methods I or II
- PB HLTH 142 Biostatistics – Probability and Statistics (Fall and Spring)
- PB HLTH 145 Biostatistics – Continuous Outcome Data (Fall)

### EHS Core Courses (GHE MPH students must take at least two)

- PB HLTH 270 Introduction to Environmental Health Sciences (Fall)
- PB HLTH 270B Toxicology (Spring)
- PB HLTH 270A Exposure Assessment and Control I (Spring)
- PB HLTH 220C Risk Assessment, Regulation, and Policy (Spring)
- PB HLTH 271E Science and Policy for Environmental Health (Spring)

### GHE MPH “Selectives” in EHS (GHE MPH students must take at least two)

- PB HLTH 271G Global Climate Change and Health (Spring)
- PB HLTH 271C Drinking Water and Health (Spring)
- PB HLTH 271E Science and Policy for Environmental Health (Spring)
- PB HLTH 273 Environmental Determinants of Infectious Disease (Fall)

### GHE MPH “Selectives” outside EHS (Students must take at least one)

- PB HLTH 260A Principles of Infectious Disease (Fall)
- PB HLTH 235 Impact Evaluation for Health Professionals (Fall)
- PB HLTH 213A Family Planning, Population Change and Health (Fall)
- PB HLTH 226D Global Health Economics (Fall)
- CRP 115 Global Poverty: Challenges and Hopes in the New Millennium (Fall)

### EHS MPH Requirements

- CRP 251 Housing in Developing Countries (Fall)
- ERG 275 Water and Development (Spring, even years)
- ESPM 260 International Environmental Politics (Fall)
- ERG 102 Quantitative Aspects of Global Environmental Problems (Spring)

### Seminar and Field Placement

- PB HLTH 292 MPH Seminar (3 units, graded)
- PB HLTH 297 (Enroll in final year spring semester)

### Additional Global Electives and Advanced Coursework for GHE MPH

- PB HLTH 212D Global Health Core Course (3) (Spring)
- PB HLTH 267B Characterization of Airborne Contaminants (3) (Spring, odd years)

PB HLTH 290	Exposure Assessment & Control II (Spring, even years)
PB HLTH 269C	Occupational Biomechanics (3) (Spring)
PB HLTH 269D	Ergonomics Seminar (2) (Fall)
PB HLTH 269E	Current Topics in Environmental Medicine (3) (Fall)
PB HLTH 271C	Drinking Water and Health (3) (Spring)
PB HLTH 271G	Global Climate Change and Health (3) (Spring)
PB HLTH 290X	Global Air Quality and Public Health (2) (Spring)
PB HLTH 292	International Internship Seminar (1) (Fall, Spring)
PB HLTH 212A	International Maternal & Child Health (2) (Fall)
PB HLTH 256	Human Genome, Environment, and Public Health (3) (Spring)
CE 111	Environmental Engineering (3) (Fall, Lab offered in Spring)
CRP 256	Healthy Cities (3) (Fall)
ESPM 167/PB HLTH C160	Environmental Health and Development (4) (Spring)
PB HLTH 219E	Introduction to Qualitative Methods in PB HLTH Research (3) (Spring)
PB HLTH 205	Program Planning, Development, and Evaluation (3) (Spring)
PB HLTH 206D	Food/Nutrition Policies/Programs in Dev. Countries (3) (Spring, even years)
PB HLTH 211	Health and Human Rights (3) (Fall)
PB HLTH 252C	Intervention Trial Design (3) (Fall)
CRP 220	Urban and Regional Economy (3) (Fall)
ESPM. C234	Green Chemistry: Interdisciplinary Approaches to Sustainability (3) (Spring)
ESPM 290-PO09	Biodiversity and Human Health (3) (Spring)
PB HLTH 253B	Epidemiology and Control of Infectious Diseases (3) (Spring)

**NOTE:** Additional elective units are required.

### SAMPLE SCHEDULE FOR GHE MPH STUDENTS

#### First Year Program 2017-2018 (B)

Fall Semester		Units
PB HLTH 142	Probability & Statistics (Fall and Spring)	4
PB HLTH 200L	Intro. to Health and Social Behavior	2
PB HLTH 200J	Health Policy & Management	2
PB HLTH 250A or B	Epidemiologic Methods	3 or 4
PB HLTH 270	Introduction to Environmental Health Sciences	3
PB HLTH 273	Environmental Determinants of Infectious Disease	3
Spring Semester		Units
PB HLTH 270A	Exposure Assessment & Control I	3
PB HLTH 270B	Toxicology	3
PB HLTH292	EHS MPH Capstone Seminar 1	1
	Selective(s) (e.g. Global Air Quality & Public Health)	3 or 4
	Elective(s) (e.g., Global Health Economics or Global Poverty)	2-7
Summer Semester		Units

PB HLTH 297	Internship, full time (Register Fall 2018)	3
-------------	--	---

### Second-Year Program (2018-2019)

Fall Semester		Units
PB HLTH 145	Statistical Analysis of Continuous-Outcome Data or another Biostatistics Course	4
PB HLTH 292	MPH Capstone Seminar	1
	Selective(s) (e.g., Health implications of Climate Change or Drinking Water and Health)	3 or 4
	Elective(s) (e.g., Principles of Infectious Diseases or International Environmental Politics)	2-7
Spring Semester		Units
PB HLTH 220C	Health Risk Assessment, Policy & Regulation	4
PB HLTH 292	EHS MPH Capstone Seminar	1
	Selective(s) (e.g., Quantitative Aspects of Global Environmental Problems)	3 or 4
	Elective(s) (e.g., Biodiversity and Human Health)	5-8

### REQUIREMENTS FOR THE EHS MPH – INDUSTRIAL HYGIENE (IH) SPECIALIZATION

The curriculum for the Industrial Hygiene specialization is less flexible than the EHS MPH or GHE MPH curricula. Students must complete the IH required courses as well as two electives related to occupational health. The student with her/his adviser should plan a program that best meets the student's needs and interests. For example, a student might wish to change the order of some of the required courses.

#### SPH Required Courses

PB HLTH 200J	Health Policy & Management Breadth (Fall)
PB HLTH 200L	Health and Social Behavior Breadth (Fall)

#### Essential Methods Courses

PB HLTH 250A & PB HLTH 250B	Epidemiologic Methods I or II
PB HLTH 142	Biostatistics – Probability and Statistics (Fall and Spring)
PB HLTH 145	Biostatistics – Continuous Outcome Data (Fall)

#### EHS Core Courses

PB HLTH 270	Introduction to Environmental Health Sciences (Fall)
PB HLTH 270B	Toxicology (Spring)
PB HLTH 270A	Exposure Assessment and Control I (Spring)
PB HLTH 220C	Risk Assessment, Regulation, and Policy (Spring)
PB HLTH 271E	Science and Policy for Environmental Health (Spring)

#### IH Specific Required Courses

PB HLTH 267B	Characterization of Airborne Contaminants, 4 units (Spring 2017, alt Odd yrs)
PB HLTH 290	Exposure Assessment & Control II, 3 units (Spring 2018, alt Even yrs)

- PB HLTH 269C Occupational Biomechanics (3) (Spring)  
 PB HLTH 234 Green Chemistry: An Interdisciplinary Approach to Sustainability (3 units) (Spring),  
 or PB HLTH290-02 Greener Solutions: An interdisciplinary (3-unit project based course)  
 PB HLTH 299 Fundamentals of Workplace Safety 2 units (COEH Summer Institute & Fall)  
 PB HLTH 298 Occupational Health Clinic 1 unit (Fall & Spring, on-going, min 5 visits)  
 PB HLTH 299 Workplace Site Visits (1 unit, min 5 visits)

**“Selectives” (Students must take at least one of these)**

- PB HLTH 256 Human Genome, Environment, and Public Health (Spring)  
 PB HLTH 254 Occupational and Environmental Epidemiology (Offered Spring 2018)  
 PB HLTH 290 Environmental Determinants of Infectious Disease (Fall)  
 CY PLAN 204C Introduction to GIS and City Planning (Spring)

**Seminar and Field Placement**

- PB HLTH 292 MPH Seminar (3 units, graded)  
 PB HLTH 297 (Enroll in final year spring semester)

**IH Occupational Health Related Electives**

- MPH IH students are required to take two electives in courses related to occupational health.

**Examples of suitable courses are:**

- CE 111 Environmental Engineering 3 units (Fall, Lab offered in spring)  
 PB HLTH 162A Public Health Microbiology 3 units (Fall)  
 PB HLTH 260A Principles of Infectious Disease 3 units (Fall)  
 PB HLTH 256 Human Genome, Environment, and Public Health 3 units (spring)  
 CE 265 Traffic Safety and Injury Prevention 3 units (fall)  
 PB HLTH 269E Current Topics in Environmental Medicine 3 units (Fall)  
 PB HLTH 254 Occupational & Environmental Epidemiology 3 units (Spring 2018)  
 PB HLTH 290 Social Justice and Worker Health 2-3 unit (Fall, Spring)

**NOTE:** Additional elective units are required.

**SAMPLE SCHEDULE FOR IH STUDENTS**

**First Year Program 2017-2018 (B)**

Fall Semester		Units
PB HLTH 142	Probability & Statistics (Fall and Spring)	4
PB HLTH 200J	Health Policy & Management	2
PB HLTH 250A or B	Epidemiologic Methods	3 or 4
PB HLTH 270	Introduction to Environmental Health Sciences	3
PB HLTH 270B	Toxicology OR (PB HLTH 270A)	3

Spring Semester		Units
PB HLTH 200L	Intro. to Health and Social Behavior	2
PB HLTH 270A	Exposure Assessment & Control I OR (PB HLTH 270B)	3
PB HLTH292	EHS MPH Capstone Seminar 1	1
	Selective(s) (e.g., Environmental Determinants of Infectious Disease or Global Burden of Disease) (e.g., Environmental Determinants of Infectious Disease or Global Burden of Disease)	3 or 4
	Elective(s) (e.g., Global Health Economics or Global Poverty)	2-7
Summer Semester		Units
PB HLTH 297	Internship, full time (Register Fall 2018)	3
Second-Year Program (2018-2019)		
Fall Semester		Units
PB HLTH 145	Statistical Analysis of Continuous-Outcome Data or another Biostatistics Course	4
PB HLTH 292	MPH Capstone Seminar	1
	Selective(s) (e.g., Health implications of Climate Change or Drinking water and Health)	3 or 4
	Elective(s) (e.g., Principles of Infectious Diseases or International Environmental Politics)	2-7
Spring Semester		Units
PB HLTH 220C	Health Risk Assessment, Policy & Regulation	4
PB HLTH 292	EHS MPH Capstone Seminar	1
	Selective(s) (e.g., Quantitative Aspects of Global Environmental Problems)	3 or 4
	Elective(s) (e.g., Biodiversity and Human Health)	5-8

In addition to the 12 requirements listed above in the EHS MPH curriculum section, MPH students specializing in industrial hygiene are required to complete a three-month, full-time internship in industry or government during the program, regardless of previous work experience. The Center for Public Health Practice and Leadership coordinates all MPH summer internships to assist IH students with their internships.

#### UNDERSTANDING REQUIREMENTS FOR EHS MPH DEGREES IN EHS

1. The first element of the curricula for all EHS MPH degrees (EHS MPH, GHE MPH, IH) is designed to build a broad understanding of the overall parameters of public health. This is referred to as the “breadth” requirement. The School has established courses to provide this foundation, and all MPH students take these.

- » PB HLTH 200J Introduction to Health Policy & Management (2 units)
  - » PB HLTH 200L Introduction to Health and Social Behavior (2 units)
  - » PB HLTH 200K is not required for EHS students.
2. The second element of the curricula is about skills and knowledge that are important for all MPH students. These are biostatistics and epidemiology. The School requires all MPH students to take courses in these two disciplines. All MPH students are required to take at least one epidemiology course and may choose from:
- » PB HLTH 250A Epidemiologic Methods I (3 units)
  - » PB HLTH 250B Epidemiologic Methods II (4 units)

---

**NOTE:** EHS MPH students are encouraged to take PB HLTH 250B if possible.

3. The third element of the curricula are core courses in environmental health required for each specific MPH program (EHS MPH, GHE MPH, IH). The core courses represent the main intellectual foci of Environmental Health Sciences, Global Health and Environment and Industrial Hygiene, and constitute the basis for the competencies established for students in EHS.

In addition to the coursework requirements listed above, MPH students must fulfill the following degree requirements:

4. Advanced courses (200 series) - 9 units, minimum. At least 4 units in EHS beyond the core courses, with the remainder relating to the individual's program either in the School of Public Health or outside the department. Students should check with their adviser about which courses count as advanced courses. This includes the "selectives."
5. Electives, including seminars - 6 units, minimum
6. A minimum of 12 units must be taken in the graduate series (Courses numbered in the 200's).
7. At least 12 units must be taken in the School of Public Health.
8. Public Health Practice - 3 units. Every MPH student is expected to complete field training or a project-based public health practice activity for a minimum of 12 weeks. Students presenting evidence of previous qualifying experience may meet this requirement. A request for waiver is initiated with the student's adviser during Fall 2017 semester. This requirement may be waived for students admitted in advanced standing.
9. Students must register for course PB HLTH 297 after undertaking public health practice training in the summer during the Fall 2017 semester. The Center for Public Health Practice and Leadership, in conjunction with the EHS Program Coordinator, assists MPH students in locating potential internship placements.
10. At least a B (3.0 grade-point) average in all work completed in graduate standing.
11. Establishing competency – The MPH program requires the completion of either a thesis or capstone project that demonstrates the student's competence in environmental health.
12. A minimum of four semesters of academic residence (exception: a minimum of two semesters for Occupational Medicine Residents).

Except for students admitted with advanced standing, a minimum of 48 units is required

for the MPH degree. Students admitted with advanced standing are required to complete a minimum of 24 units. Only one-third of the total units completed are allowed on an S/U grading basis (Courses numbered Public Health 291, 297, 299, and 300 through 600 series are discounted from the one-third limit). Additionally, no more than 6 units for the degree may be research units (PB HLTH 299).

Students who enroll full time each semester and successfully complete the EHS core courses, SPH breadth courses, and specialty area requirements generally have no problem meeting the degree requirements. Please refer to the appropriate course requirement check sheet in the appendix to use as a guide in planning your courses. If you have questions about the requirements, contact your faculty adviser or the EHS Program Coordinator.

### **CAPSTONE/THESIS INFORMATION**

The MPH program requires the completion of either a thesis or capstone project that demonstrates the student's competence in environmental health.

## **III. EHS MS Requirements**

### **PROGRAM OVERVIEW**

MS students in the Environmental Health Sciences division are trained to make research and technical contributions to the field of environmental health science. EHS offers an MS degree in *Environmental Health Sciences* and *Global Health and Environment*. The EHS MS educational objectives are to develop an understanding of the human health impacts of physical, biological, and chemical agents in the environment and workplace and to explore the means of their recognition and control.

### **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 and other stressors in the general environment and the workplace.

The MS program emphasizes interdisciplinary training in environmental health sciences. 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

## CURRICULUM

The EHS curriculum prepares students to assess the health impacts of physical, chemical, and biological agents in the environment and workplace, and the means for their measurement and control. EHS integrates several disciplines with emphasis on assessment of exposures to environmental contaminants, toxicology, environmental and occupational epidemiology, risk assessment, control strategies, and policy solutions. Students learn to apply tools in these disciplines to problems in both the U.S. and other parts of the world.

Students for the MS degree in EHS are either in the regular MS program or in the Global Health and Environment (GHE) program. The requirements for these programs differ as indicated below. For descriptions of courses, see the Berkeley catalogue is online at: [schedule.berkeley.edu/](http://schedule.berkeley.edu/). Current schedules for EHS and other Public Health courses are available at the EHS Program Coordinator's Office.

## REQUIREMENTS FOR THE EHS MS PROGRAM (NON-GHE STUDENTS)

### Required Courses

PB HLTH 220C	Health Risk Assessment, Regulation, and Policy (3) (Sp)
PB HLTH 250A	Epidemiologic Methods I (3) (F)
or PB HLTH 250B	Epidemiologic Methods II (4) (F)
PB HLTH 270	Introduction to Environmental Health Sciences (3) (F)
PB HLTH 270A	Exposure Assessment and Control (3) (Sp)
PB HLTH 270B	Toxicology (3) (Sp)

Two biostatistics courses are also required of which the following are generally selected (other courses can be substituted):

PB HLTH 142	Introduction to Probability and Statistics in Biology and Public Health (4) (F, Sp)
PB HLTH 145	Statistical Analysis of Continuous Outcome Data (4) (F)

## RECOMMENDED ADVANCED AND ELECTIVE EHS COURSES

### Advanced courses

PB HLTH 220	Health Policy Decision Making (3) (F)
PB HLTH 256A	Human Genome, Environment, and Health (3) (Sp)
PB HLTH 256B	Genetic Analysis Methods (3) (Sp)
PB HLTH 267B	Characterization of Airborne Contaminants (3) (Sp, every odd yr)
PB HLTH 269C	Occupational Biomechanics (3) (Sp)

PB HLTH 269D	Ergonomics Seminar (2) (F)
PB HLTH 269E	Current Topics in Environmental Medicine (3) (F)
PB HLTH 270C	Practical Toxicology (2) (Sp)
PB HLTH 271C	Drinking Water and Health (3) (Sp)
PB HLTH 271E	Policy for Health and Environment (3) (Sp)
PB HLTH 271G	Public Health Implications of Global Climate Change (3) (Sp)
PB HLTH 290	Quantitative Exposure Assessment (3) (F, Sp)
PB HLTH 290	Infectious Disease (2) (F)
PB HLTH 290X	Global Air Quality & Public Health (2) (Sp)

### Other Elective Courses

City Planning 204C	Introduction to Geographic Information Systems (GIS) and City Planning (4) (Sp)
Energy & Resources 100	Energy and Society (4) (F)
Energy & Resources 102	Quantitative Aspects of Global Environ. Problems (4) (Sp)
Energy & Resources 200	Energy Analysis (4) (F)
ESPM 148	Pesticide Chemistry & Toxicology (3) (Sp, alt. yrs.)
ESPM 160AC	American Environment & Cultural History (4) (F)
ESPM 161	Environmental Philosophy and Ethics (3) (F)
ESPM 167	Environmental Health & Development (3) (Sp)
Civil & Env. Engineering 111	Environmental Engineering (3) (F, Lab offered in Sp)
Civil & Env. Engineering 114	Environmental Microbiology (3) (Sp)
Civil & Env. Engineering 173	Groundwater & Seepage (3) (F)
Civil & Env. Engineering 218A	Air Quality Engineering (3) (F)
Nuclear Engineering 162	Radiation Biophysics and Dosimetry (3) (Sp)
Boalt 271	Environmental Law & Policy (4) (F)
MBA 209F	Fundamentals of Business: An Introduction to Business for Graduate Students (3) (F)
PB HLTH 254	Environmental and Occupational Epidemiology (3) (Sp)

### REQUIREMENTS FOR MS STUDENTS IN THE GHE PROGRAM

Students enrolled in the GHE program are required to take a set of courses covering four core skill areas: EHS, biostatistics and epidemiology, international development, and environmental health policy with a focus on problems in low- and middle-income countries. Elective courses can be chosen from upper division and graduate courses in the four core areas or in a range of closely related fields including, but not limited to: international health, demography, maternal and child health, urbanization and health cities, nutrition and malnutrition, environmental sciences, environmental engineering, industrial hygiene and occupational health, and energy and resources.

GHE students are required to pursue the MS Plan II (non-thesis option) and have six semesters in which to complete requirements for their degrees. Plan II requires a minimum of 24 units of upper division and graduate courses. At least 12 of these units must be in graduate courses (200 level) in the student's major subject. Additionally, no more than 6 units may be research units (PB HLTH 299). A minimum of 41 units are to be completed in these core areas, and a total of 44 units are required to complete the program, including the completion of a 3 unit research project seminar.

MS students under Plan II must complete a Comprehensive Final Examination, which covers the knowledge and skills reasonably expected of a master's degree recipient in EHS. Under most circumstances the Comprehensive Final Examination in GHE takes the form of an original

project, nearly always using field data taken by the student but sometimes utilizing pre-existing data. A committee of two EHS Graduate Group Members will supervise the Comprehensive Final Examination (see section 2.3 for a list of members of the EHS Graduate Group).

### Required Courses

Environmental Health Sciences (3 Courses, courses in **bold face** are required)

**PB HLTH 270 Introduction to Environmental Health Sciences (first term if possible) (3) (F)**

**PB HLTH 270A Exposure Assessment and Control I (3) (Sp)**

PB HLTH260A Principles of Infectious Disease (4) (F)

or PB HLTH270B Toxicology I (3) (F)

CRP 204C Introduction to GIS and City Planning (4) (Sp)

Biostatistics and Epidemiology (3 Courses, courses in bold face are required)

PB HLTH 142 Introduction to Probability & Statistics in Public Health (4) (F, Sp)

or PB HLTH141 Introduction to Biostatistics (4), (Su)

PB HLTH 250A Epidemiological Methods – I (3) (F, Su)

**or PB HLTH 250B Epidemiological Methods – II (4) (F)**

PB HLTH 145 Statistical Analysis of Continuous Outcome Data (4) (F)

PB HLTH 241 Statistical Analysis of Categorical Data (4) (Sp)

PB HLTH 245 Introduction to Multivariate Statistics (4) (F)

Students should take a minimum of 3 courses in either one of the following categories: (1) International Development or (2) Environmental Health Policy

### International Development

ARE/PP C253 International Economic Development Policy (3) (F)

ARE C251/Econ C270A Microeconomics of Development (3) (F)

Demography/Econ C275A Economic Demography (3) (Sp)

CRP 115/Global Poverty and Practice 115 Global Poverty: Challenges and Hopes in the New Millennium (4) (F)

CRP 251 Housing in Developing Countries (3) (F)

Development Studies C100/Geography 112 History of Development and Underdevelopment (4) (Sp)

ERG 275 Water and Development (4) (Sp, even years)

ESPM 169 Governance of Global Production (3) (Sp)

ESPM 260 International Environmental Politics (4) (F)

PB HLTH 213A Family Planning, Population Change and Health (3) (F)

PB HLTH 226D Global Health Economics (3) (F)

### Environmental Health Policy

PB HLTH 290X Global Air Quality and Public Health (2) (Sp)

PB HLTH 271E Science and Policy for Environment and Health (3) (Sp)

PB HLTH 220C Health Risk Assessment, Regulation and Policy (3) (Sp)

ERG 102 Quantitative Aspects of Global Environmental Problems (4) (Sp)

PB HLTH 235 Impact Evaluation for Health Professionals (3) (F)

GHE Project Seminar (3-6 units to be taken during the last semester or during the summer)

PB HLTH 299 GHE Project Seminar (3-6) (F, Sp)

### Elective Courses

Remaining units to be chosen from upper division or graduate courses in the above areas and from courses in a range of closely related fields, including but not limited to the following:

PB HLTH 212D	Global Health Core Course (3) (Sp) [required for the Global Health Specialty Area certificate – not environmentally oriented]
PB HLTH 292	International Internship Seminar (1) (F, Sp)
PB HLTH 212A	International Maternal & Child Health (2) (F)
PB HLTH 256B	Genetic Analysis Methods (3) (Sp)
PB HLTH 267B	Characterization of Airborne Contaminants (3) (Sp, every odd yr)
CE 111	Environmental Engineering (3) (F, Lab offered in Sp)
CRP 256	Healthy Cities (3) (F)
ESPM 167/PB HLTH C16o	Environmental Health and Development (4) (Sp)
PB HLTH 219E	Introduction to Qualitative Methods in Public Health Research (3) (Sp)
PB HLTH 205	Program Planning, Development, and Evaluation (3) (Sp)
PB HLTH 260B	Principles of Infectious Disease (4) (Sp)
PB HLTH 206D	Food and Nutrition Policies and Programs in Developing Countries (3) (Sp, every even yr)
PB HLTH 271G	Public Health Implications of Global Climate Change (3) (Sp) By petition Courses for Designated Emphasis in Global Metropolitan Studies
PB HLTH 211	Health and Human Rights (3) (F)
PB HLTH 252C	Intervention Trial Design (3) (F)
CRP 220	Urban and Regional Economy (3) (F)
ESPM C234	Green Chemistry: An Interdisciplinary Approach to Sustainability (3) (Sp)
ESPM 290-PO09	Biodiversity and Human Health (3) (Sp)
PB HLTH 253B	Epidemiology and Control of Infectious Diseases (3) (Sp)
PB HLTH 271C	Drinking Water and Health (3) (Sp)

**NOTE:** Courses are subject to change.

### SAMPLE SCHEDULE

#### EHS MS Sample Schedule (non-GHE students)

##### First Year

Fall Semester		Units
PB HLTH 142	Probability & Statistics	3
PB HLTH 145	Statistical Analysis of Continuous-Outcome Data	4
PB HLTH 270	Introduction to EHS	3
PB HLTH 250A or B	Epidemiologic Methods	3/4
	Elective	3
Spring Semester		Units
PB HLTH 270B	Toxicology	3
PB HLTH 299	Independent Research	2
	Electives	3+6

**Second Year**

<b>Fall Semester</b>		<b>Units</b>
PB HLTH 299	Independent Research	2
	Electives	6-9
<b>Spring Semester</b>		<b>Units</b>
PB HLTH 220C	Risk Assessment, Policy & Toxics Regulations	3
PB HLTH 299	Independent Research	2
	Electives	6-9

**GHE MS Sample Schedule****First Year**

<b>Fall Semester</b>		<b>Units</b>
PB HLTH 142	Probability & Statistics	3
PB HLTH 270	Introduction to EHS	3
PB HLTH 250A or B	Epidemiologic Methods	3/4
	Skill area course**	3/4
	Elective	3
<b>Spring Semester</b>		<b>Units</b>
PB HLTH 270A	Exposure Assessment and Control	3
PB HLTH 299	Independent Research	2
	Skill area course**	4
	Electives	3+6

**Second Year**

<b>Fall Semester</b>		<b>Units</b>
PB HLTH 299	Independent Research	2
	Skill area course**	4
<b>Spring Semester</b>		<b>Units</b>
PB HLTH 299	Independent Research	2
	Skill area course**	4
	Electives	6-9

**COMPREHENSIVE EXAM**

MS students have four semesters in which to complete requirements for their degree and have the option to pursue Degree Plan I (thesis option) or Degree Plan II (non-thesis option) as described below. MS students should discuss the Plan options with their faculty advisers during the first semester of academic residency and a final decision should be made by the end of the first academic year. In addition to the requirement of 8-12 units of advanced study in the major field of

EHS (the number of units is determined by the Degree Plan as indicated below), MS students are required to take at least two courses outside the graduate group and, preferably, outside the SPH. The faculty adviser must approve these courses. Research efforts will begin in the second semester of the first year with Independent Research (PB HLTH 299, 2 units) under the supervision of the faculty adviser. During the second year, students will take additional units of PB HLTH 299 as they conduct their research projects or theses. Students will be encouraged to pursue their research during the summer between years one and two.

### **Plan I (Thesis Option)**

This option requires at least 20 semester units of upper division and graduate courses, and a thesis. A minimum of 8 of these units must be in graduate courses (200 series) in EHS. No more than 6 units of the program may be research units (PB HLTH 299), unless the EHS graduate adviser requests special permission and the request is approved by the Dean of the Graduate Division. A minimum of two semesters of academic residence is required. Course units are not granted for the thesis.

MS students must have a properly constituted thesis committee of three members, two of whom must be members of the EHS Graduate group (see section 2.3 for a list of faculty in the EHS Graduate Group). If a proposed committee member does not belong to the Academic Senate, the EHS Graduate Adviser must petition the Graduate Division for an exception.

For filing requirements, including information on deadlines, preparing the thesis, registration, and use of human or animal subjects, please see [“Instructions for Preparing and Filing Your Thesis or Dissertation”](#) on the UC Berkeley Graduate Division website.

### **Plan II (Non-Thesis Option)**

This option requires a minimum of 24 units of upper division and graduate courses. At least 12 of these units must be in graduate courses (200 level) in the student’s major subject. Additionally, no more than 6 units may be research units (PB HLTH 299).

MS students under Plan II must complete a Comprehensive Final Examination, which covers the knowledge and skills reasonably expected of a master’s degree recipient in EHS. Under most circumstances the Comprehensive Final Examination takes the form of an original project, such as a literature review or a research paper utilizing pre-existing data. Alternatively, upon request of the student’s faculty adviser and approval of the EHS Graduate Adviser, an oral examination can be used for the Comprehensive Final Examination. In either case, a committee of two EHS Graduate Group Members will conduct the Comprehensive Final Examination (see section 2.3 for a list of members of the EHS Graduate Group).

## **REQUIREMENTS FOR THE MS/PHD PROGRAM**

If a current Masters student wishes to apply for the PhD program in Environmental Health Sciences, the following items must be submitted to 417 University Hall by December 1:

1. New SPH application
2. Updated statement of purpose
3. At least one new letter of recommendation (although three new letters are preferred)
4. Petition to Add or Change Degree Goal

For students entering the joint MS/PhD program, continuation to the doctoral program is contingent upon superior performance throughout the MS program and completion of an MS thesis (Plan I) or project (Plan II) as described in the [“Procedure for Filing your Thesis”](#) on the UC Berkeley Graduate Division website. After completion of the MS degree, students in the joint MS/PhD program complete requirements for the PhD program described below.

## IV. EHS PhD Requirements

### PROGRAM OVERVIEW

The EHS program promotes understanding of the human health impacts of physical, biological, and chemical agents, as well as the impacts of climate and the built environment. It allows students to explore means to assess and control the stressors that lead to health-damaging exposures in the general environment and the workplace.

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.

### COMPETENCIES

While completing the PhD program, our graduates work 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
- » 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.

## CURRICULUM

The EHS curriculum prepares students to assess the health impacts of physical, chemical, and biological agents and other stressors in the environment and workplace, and the means for their measurement and control. EHS integrates several disciplines with emphasis on assessment of exposures to environmental contaminants, toxicology, environmental and occupational epidemiology, risk assessment, control strategies, and policy solutions. Students learn to apply tools in these disciplines to problems in both the U.S. and other parts of the world.

### Course Requirements

There are no specific course requirements for PhD students but before the Graduate Group exam, all PhD students are expected to understand the principles of exposure and risk assessment, epidemiologic methods, and toxicology. If courses in these subjects have not been taken earlier, students may find it most efficient to take the core courses below in order to acquire the needed understanding:

PB HLTH 270A	Exposure Assessment I
PB HLTH 250B*	Epidemiologic Methods II
PB HLTH 220C	Health Risk Assessment, Regulation, and Policy
PB HLTH 270B	Toxicology
PB HLTH 271E	Science and Policy for Environment and Health
PB HLTH 293	EHS Doctoral Seminar

\*For the Biostatistics and Epidemiology requirements any 200 level courses will satisfy the requirements.

PhD students must not only develop expertise in the major field (EHS) but also in two minor fields, such as (but not limited to) biostatistics, epidemiology, environmental law, policy, GIS and spatial statistics, or molecular and cell biology, which are selected in consultation with the faculty adviser and are appropriate for the student's dissertation topic. Each minor field will typically require the equivalent of three semesters of graduate study (i.e. 200-level courses). In addition, PhD students are required to take the PhD seminar, PB HLTH 293, each semester prior to advancement to candidacy (see section 6.2.3) and should carry at least 3 units of independent research (PB HLTH 299) in each of the first two semesters and increased units of research in subsequent semesters. These courses, or equivalent, constitute the basis for the PhD examinations (described in section 6.2).

In practice, PhD students take courses during their first three or four semesters in preparation for the examinations. During the first year, each PhD student works closely with his or her faculty adviser to ensure mastery of the material that will be covered in examinations.

PhD students should register for a full course load of 12 units each semester. Students who have completed the necessary coursework should enroll in 12 units of independent research, PB HLTH 299. During the entire period of study, a PhD student is required to be in continuous registration, except during those semesters for which the Dean of the Graduate Division has approved a petition for withdrawal, or during the semester when the Filing Fee is used in lieu of registration.

### GSI Requirements

All PhD students are required to serve as a Graduate Student Instructor (GSI) for at least one semester while in residence at Berkeley.

## EXAMINATIONS

Two examinations are required to complete the requirements for the PhD degree in EHS, namely, the EHS Graduate Group Preliminary Examination and the Qualifying Examination. The student's faculty adviser is not allowed to participate in either examination committee. In addition, a dissertation describing original research must be formally approved by the dissertation committee and filed with the university, as described in section 6.3. Specific faculty committees are selected and approved by the student, the faculty adviser, and the EHS Graduate Group Adviser (in consultation with the Graduate Division of the University).

### EHS Graduate Group Preliminary Examination

This preliminary examination normally takes place after 3-4 semesters of course work. It is administered by a committee consisting of three members selected by the student and his or her faculty adviser from the list of members of the EHS Graduate Group and/or Division (see section 1.3 for a list of EHS Graduate Group and Division members). At least two of the faculty members must be a member of the EHS Graduate Group. The examination has both a written and an oral component. The written component takes the form of a NIH-style research proposal covering a topic selected by the student and his or her faculty adviser. The proposal must be submitted to the EHS Graduate Group Committee a minimum of two weeks prior to the oral component of the examination which covers both specific details related to the submitted proposal and general knowledge in EHS. (See Appendix A for details regarding the EHS Graduate Group Preliminary Examination).

### PhD Qualifying Examination

The PhD qualifying examination is generally taken a few months after successful completion of the EHS Graduate Group Preliminary Examination. It is administered by a committee consisting of four members. At least two committee members must be members of the EHS Graduate Group (see section 2.3 for a list of EHS Graduate Group members) and at least one committee member must be a member of the Berkeley Academic Senate that is not a member of the EHS Graduate Group. The fourth committee member can, upon approval of the EHS Graduate Adviser and the Graduate Division, be an EHS Division member who is not a member of the EHS Graduate Group (see section 2.3 for a list of EHS Division members). One member of the Qualifying Examination Committee must have expertise in each of the student's two minor areas of study and must certify that the student has demonstrated an acceptable level of competence in the minor area. Students should consult with their faculty advisers and the EHS Group Graduate Adviser to ensure that the Qualifying Examination is properly constituted. Application to take the Qualifying Examination is available at [grad.berkeley.edu/policies/pdf/](http://grad.berkeley.edu/policies/pdf/qe_application.pdf)  
[qe\\_application.pdf](http://grad.berkeley.edu/policies/pdf/qe_application.pdf).

After the Qualifying Examination has been taken, a formal report of the results, signed by all Qualifying Examination committee members, must be sent to the Graduate Division. The EHS Program Coordinator will retain a copy of the report for EHS files and will forward the report to the School and Graduate Division. (See Appendix B for details regarding the PhD Qualifying Examination).

## ADVANCEMENT TO CANDIDACY

When a PhD student has satisfied all requirements and passed the qualifying examination, he or she must complete an application for Advancement to Candidacy (forms are available from the EHS Program Coordinator or from the Graduate Division at [grad.berkeley.edu/policies/forms](http://grad.berkeley.edu/policies/forms))

The student must return the completed application with a check for the candidacy fee (currently \$90) made payable to the Regents of the University of California, to the EHS Program Coordinator to obtain the signature of the EHS Head Graduate Adviser. The EHS Program Coordinator will forward these documents to Graduate Division Degrees office.

The student must also indicate on the form whether human subjects or animal research will be involved in the dissertation research. Human-subjects protocols and/or animal-subjects protocols must be approved by the appropriate Berkeley committees before any dissertation research is conducted (see [grad.berkeley.edu/policies/guides/research-human-animal](http://grad.berkeley.edu/policies/guides/research-human-animal)).

Students who have been advanced to candidacy are eligible to apply for the doctoral student support award for research administered by the SPH (contact the EHS Program Coordinator for more information). The tuition of nonresident graduate students, including international students, who have been advanced to PhD candidacy, is reduced to zero for a maximum calendar period of three years calculated from the semester subsequent to the students' advancement, whether registered or not. Any student who continues to be enrolled or who re-enrolls after the three-year period will be charged the full nonresident tuition rate that is in effect at the time.

Doctoral students advanced to candidacy are required to meet annually with at least two committee members (including the dissertation chair) and must complete the online [Academic Progress Report](#). Having a positive Academic Progress Report on file from the previous year is required for students in participating programs seeking to use the Doctoral Completion Fellowship. This Annual Review of Doctoral Candidates is part of the Graduate Council's efforts to improve the doctoral completion rate and to shorten the time it takes to obtain a doctorate. The dissertation committee members should comment on the student's progress and objectives also using the online [Academic Progress Report](#).

PhD students who have not yet been advanced to candidacy must meet annually with their faculty advisers to discuss progress and plans. The EHS Program Coordinator will distribute the form to be used for this review at the end of each Fall semester.

## **DISSERTATION**

### **The Dissertation Committee**

Once a PhD student passes the Qualifying Exam and has advanced to candidacy, he or she formally begins the dissertation process. PhD students in EHS fall under the guidelines of Plan B of the Berkeley Graduate Division which stipulate that a committee of three Berkeley Academic Senate members (or specific non-Senate EHS faculty as indicated above) will guide the research and judge the merits of the dissertation. Two members of the dissertation committee must be members the EHS Graduate Group and one must be an Academic Senate member who is not in the EHS Graduate Group. If the student's faculty adviser is an EHS Division member who is not in the EHS Graduate Group, then the faculty adviser will serve as the fourth member, and co-chair, of the dissertation committee. Because the EHS faculty adviser is either the chair or co-chair of the dissertation committee, it is important that the PhD student have regular contact with his or her faculty adviser throughout the dissertation research.

### **Writing and Filing the Dissertation**

The dissertation research should comprise sufficient original work to motivate at least three peer-reviewed first-authored publications. Students are strongly urged to submit manuscripts

for journal review as each portion of the dissertation research has been completed. Although not a formal requirement, it is generally expected that at least two manuscripts will have been submitted by the time of graduation with the third to be submitted shortly afterwards. PhD students and their faculty advisers should consider manuscripts for peer-reviewed publications to be important milestones in the dissertation process and should use such manuscripts (or equivalent chapters) to judge when the work has matured sufficiently for the dissertation to be filed. For filing requirements, including information on deadlines, preparing the dissertation, and use of human or animal subjects, please see [“Instructions for Preparing and Dissertation Writing and Filing”](#).

PhD degrees are awarded in December, May, and August, and all work for the dissertation must be completed by the last day of the respective semester. This is a firm deadline. While students may file their dissertations earlier, the last opportunity to file a dissertation is the last working day of the semester. All members of the dissertation committee must sign the dissertation, and the chair of the dissertation committee also must sign the abstract page.

Doctoral students are required to present their thesis research. This is a celebratory event—not an examination or defense.

PhD students must be registered in order to file the dissertation. Only students on approved Filing Fee status are exempt from meeting the registration requirement to file their dissertations. 

## **Areas of Study**

# **EPIDEMIOLOGY**

**(MPH, MS, PhD)**

# EPIDEMIOLOGY (MPH, MS, PhD)

## I. Epidemiology Programs

Introduction

Mission

## II. Epidemiology 1-Year MPH Requirements

Overview

Mission

Competencies

Learning Objectives

Curriculum

Sample Schedule

Comprehensive Exam

## III. Epidemiology MS Requirements

Overview

Competencies

Learning Objectives

Curriculum

Sample Schedule

Comprehensive Exam

## IV. Epidemiology PhD Requirements

Overview

Competencies

Learning Objectives

Curriculum

Residency Requirements

Qualifying Examination

Advancement to Candidacy

Dissertation

## I. Epidemiology Programs

### INTRODUCTION

Epidemiology is concerned with the study of factors that determine the distribution of health and disease in human populations. The purposes of epidemiological research are to discover the causes of disease, to advance and evaluate methods of disease prevention, and to aid in planning and evaluating the effectiveness of public health programs. Epidemiologists are interested in the study of infectious and noninfectious diseases. In recent years they have turned their attention increasingly toward the study of conditions affected by forces in the social and physical environment.

### MISSION

The mission of Epidemiology is to generate new knowledge that can lead to improvements in health, while emphasizing and identifying emerging areas of inquiry, especially those that cross disciplinary boundaries; disseminate and apply existing and new knowledge in the training of health professionals who will engage directly with populations at highest risk of poor health, and/or who will conduct research in epidemiology and biostatistics; and serve the larger communities in which we live and work by using our skills and knowledge. In addition, epidemiologic studies are an essential component of the evaluation of the effectiveness of such programs.

## II. Epidemiology 1-Year MPH Requirements

### OVERVIEW

The one-year MPH curriculum in epidemiology is an intensive, full-time course of study extending over eleven months (July to May) and requiring enrollment during the summer, fall, and spring. This program is generally limited to students with a prior doctoral degree (e.g., PhD, MD, DDS, DVM, etc.). In addition to completing required schoolwide breath courses in public health, students are required to complete advanced coursework in epidemiologic and biostatistical methods as well as electives in epidemiology, totaling at least 42 units of coursework. A comprehensive oral exam and Masters Paper is required.

Students in this program who wish to extend their academic course work for an additional semester or two may do so with prior consent of the program head, but must be registered, full-time students throughout all semesters in residence. Graduates of the program will be qualified for positions utilizing their epidemiologic and statistical training in federal, state and local health departments as well as for a wide variety of academic research positions and positions in the private medical and health care fields. On completion of the MPH in Epidemiology, some students may be admitted to doctoral studies in Epidemiology or Biostatistics when such admission is compatible with their interests, goals, and prior performance, and is within the admission quota and resources of the program.

### COMPETENCIES

Upon satisfactory completion of the MPH curriculum with a concentration in Epidemiology, graduates will be able to demonstrate the following competencies:

- » Identify the principles and limitations of public health screening programs
- » Describe a public health problem in terms of magnitude, person, time, and place

- » Explain the importance of epidemiology for informing scientific, ethical, economic, and political discussion of health issues
- » Comprehend basic ethical and legal principles pertaining to the collection, maintenance, use, and dissemination of epidemiologic data
- » Apply the basic terminology and definitions of epidemiology
- » Calculate basic epidemiology measures
- » Communicate epidemiologic information to lay and professional audiences
- » Draw appropriate inferences from epidemiologic data
- » Evaluate the strengths and limitations of epidemiologic reports

### **LEARNING OBJECTIVES**

Upon satisfactory completion of the one-year MPH program in Epidemiology, graduates will have specific skills in the following areas:

- » Formulating and pursuing research question(s)
- » Design of epidemiological studies
- » Accessing public health data
- » Data management
- » Data analysis
- » Interpreting published epidemiologic studies
- » Mastery of central concepts in epidemiology
- » Population health issues

#### **Specific skills to be mastered in these areas are:**

Formulating and pursuing research question(s):

- » Pose an appropriate research question or questions when given a public health or medical problem requiring an epidemiologic investigation
- » Identify demographic, social/behavioral and environmental factors which have an impact on the problem under investigation
- » Write a study protocol detailing the objects and methods for such an investigation

Design of epidemiologic studies

- » Describe the basic study designs used in epidemiological research, i.e. cross-sectional, ecological, case-control, and experimental (field trials) designs and the analytic techniques and limitations of each design.
- » Prepare a study protocol detailing the objects and methods for such an investigation

Accessing Public Health data

- » Identify sources of health data such as demographic reports, vital statistics records, disease registries, and clinic and hospital records and how to access these sources
- » Interpret health status indices based on these data, such as mortality and morbidity rates

Data management

- » Plan, organize and manage procedures for collecting data from existing sources as well as original sources such as household surveys or subjects identified for specific studies
- » Use computer software for data processing preparatory to statistical analysis
- » Evaluate the integrity and comparability of data and identify gaps in data sources
- » With consultation and under supervision, develop data collection and quality control protocols

- » With consultation and under supervision, manage data for a small or medium-scale epidemiologic or clinical study, including preparation of data management plans, data collection protocols, and documentation.

#### Data analysis

- » Analyze data using appropriate statistical techniques under the guidance of someone with more advanced training
- » Use biostatistical concepts and methods appropriate to epidemiological research
- » Estimate epidemiologic parameters such as the relative risk, and use statistical tests and confidence intervals based on contingency table analyses while
- » Controlling one or two categorical variables
- » Estimate sample size requirements
- » Conduct standard statistical analyses
- » Communicate the results of analyses both orally and in writing
- » Interpret the results in consultation with an experimenter experienced in the problem area

#### Interpreting published epidemiologic literature

- » Critique epidemiologic literature for strengths and weaknesses of the methodology in published studies
- » Evaluate critically the research questions, methods, analyses, and findings of epidemiological research reports and presentations
- » Write a thesis or equivalent that demonstrates the ability to critique the epidemiologic literature and interpret epidemiologic data

#### Mastery of central concepts in epidemiology

- » Describe the basic study designs used in epidemiological research, i.e. cross-sectional, ecological, case-control, and experimental (field trials) designs and the analytic techniques applicable to each design
- » Explain prevalence, incidence, rates, relative risk, attributable risk, direct and indirect standardization of rates, standardized mortality ratio, cohort, case-control, precision, bias, confounding, and effect modification.
- » Explain and apply methods of standardization or adjustment for factors such as age or gender in a study population
- » Explain major categories of bias, assess the potential for their occurrence in specific study situations, and propose methods to evaluate and/or reduce their influence on the measures of major interest
- » Evaluate the evidence in favor of and against the likelihood that an association observed in epidemiologic studies is causal
- » Present the purpose and problems of interpretation in surveillance for acute and chronic disease and other factors important for public health

#### Population health issues

- » Define, assess, and understand the health status of populations, determinants of health and illness, factors contributing to health promotion and disease prevention, and factors influencing the use of health services
- » Contrast the clinical and population perspectives on improving public health
- » Articulate the role of epidemiology in preserving and improving public health
- » Describe the nature of disease distributions in populations and the factors which influence these distributions

## CURRICULUM

Each student is expected to work closely with an assigned faculty adviser in the planning of his or her individual schedule of courses. Students in the one-year MPH programs must meet all school-wide breadth requirements, either by passing the appropriate exemption exams or by taking courses that are approved for meeting these requirements.

The one year MPH curriculum in epidemiology is an intensive, full-time course of study extending over eleven months (July to May) and requiring enrollment during the summer, fall, and spring. In addition to completing required school-wide breadth courses in public health, students are required to complete advanced coursework in epidemiologic and biostatistical methods, and electives in epidemiology. Students in the one-year MPH program are expected to take PB HLTH 200J, PB HLTH 200L, PB HLTH 250B and PB HLTH 290 during the fall semester and PB HLTH 200K, PB HLTH 241, and/or Epidemiology electives in the spring semester, all for a letter grade. All students in the one-year MPH program must take the epidemiology seminar PB HLTH 292 in the fall and spring semesters. The seminar is graded on a satisfactory/unsatisfactory basis only.

Students are also required to write a master's paper on an epidemiologic topic previously approved by and under the supervision of the faculty and to present and defend their master's paper during a required oral examination in the spring semester prior to graduation.

---

**IMPORTANT NOTE:** Breadth courses MUST BE TAKEN FOR A LETTER GRADE and a student must receive a B- or above to fulfill this requirement. Exceptions to this policy are rare and made on a case-by-case basis.

## SAMPLE SCHEDULE

### 11-month Schedule

Summer Session D		Units
PB HLTH 141	Intro to Biostats	5
PB HLTH 299	Independent Study	3
Fall Semester		Units
PB HLTH 200J	HPM Breadth	2
PB HLTH 200L	HSB Breadth	2
PB HLTH 290	Applied Linear Models	4
PB HLTH 250B	EPI methods II	4
PB HLTH 292	Seminar for 11-mo students	2
	Electives as desired	≥3
Spring Semester		Units
PB HLTH 200K	EHS Breadth	
PB HLTH 241	Anal Categorical Data	4
PB HLTH 292	MPH Seminar	2
PB HLTH 299	Independent Study	3
	Electives as desired	≥6

**COMPREHENSIVE EXAM**

During the spring semester preceding graduation, students in the one-year MPH program must present and defend an in-depth paper on an epidemiologic topic to be handed in early in the spring semester. The paper can take the form of a critical review of the existing epidemiologic literature about a particular topic; a formal meta-analysis; a paper describing the results of an original epidemiologic study by the student; or a detailed research proposal for an epidemiologic study. In the fall semester before the paper is due, each student will be assigned to a faculty member with expertise in the subject matter of the student's proposed paper. The student will work with and receive ongoing input from that faculty member during the various stages of planning and writing the paper. (Details concerning the paper topic, format, due dates for various stages of development of the paper can be found in the Epidemiology Masters Paper Guidelines.) Updated and detailed guidelines will be provided in the MPH Fall seminar.

In the spring semester, each student will give a brief oral presentation concerning his or her paper on a pre-assigned date and will then be questioned by two or more faculty. Specifically, in this oral comprehensive examination, the student will be expected to defend his or her written paper and, in the process, demonstrate competence in and a firm grasp of epidemiologic and biostatistical methods and approaches relevant to studies of disease causation and prevention. Decisions on the outcome of the comprehensive examination will be given to the student the day of the examination as satisfactory or unsatisfactory. In the event of an unsatisfactory outcome, a written and/or oral re-examination is the usual recommended course of action. Students who do not pass the re-examination are not eligible to receive the Masters degree.

### III. Epidemiology MS Requirements

**OVERVIEW**

Students in the M.S. program have as a minimum a bachelor's degree and a strong background in biological, social, or mathematical science that will provide a basis for the application of epidemiological methods and principles to the study of diseases. The M.S. program differs from the MPH program in that students emphasize depth of course work in one or more basic science areas complementary to epidemiologic research and are not required to take the breadth courses in public health. The M.S. program usually takes two years and requires at least 24 credits in courses in epidemiology and biostatistics, and a minimum of three months of epidemiological research. A comprehensive oral exam and Masters Paper is required.

**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

### **LEARNING OBJECTIVES**

- » Demonstrate an in depth knowledge and understanding of theoretical concepts and practical applications of epidemiology and biostatistics, as well as the principles underlying the ethical conduct of human research.
- » Demonstrate competence in epidemiologic research design and methods by preparing, managing, and analyzing epidemiologic datasets.
- » Communicate and present epidemiologic research findings in their area of expertise to peers and fellow students in a lucid, understandable manner.
- » Demonstrate competence in a third area of public health or science appropriate to their research in addition to epidemiology and biostatistics (e.g. anthropology, virology, sociology, health policy, demography, etc.)

### **CURRICULUM**

Unit Requirements. Two-year MS students are required to complete a minimum of 48 total units of coursework over four academic semesters and one summer. The minimum unit enrollment per academic semester is 12 units. Students in the two-year MPH program must meet all school-wide breadth requirements.

Grading. Students have the option of taking a course on a Satisfactory/Unsatisfactory (S/U) basis, but no more than one-third of the master's program may be fulfilled by courses graded Satisfactory. Students cannot take MPH breadth course requirements on an S/U basis. No more than 12 units may be in the 296, 297, 298, 299 series.

Courses. You can enroll in classes through the online system: [calcentral.berkeley.edu](http://calcentral.berkeley.edu). Please check the online schedule at [schedule.berkeley.edu](http://schedule.berkeley.edu) each semester for new courses and for course availability. Courses in the PB HLTH 290, 292, 298, and 299 series may change their section numbers each semester. Course Numbers (previously CCNs) will also change every semester. Additionally courses numbered 99 and below are considered to be undergraduate courses. Graduate students may take no more than half of the required degree units in courses numbered 100 through 199. Courses numbered below 99 do not count toward meeting any graduate degree requirements.

Please be aware that full-time student status requires an enrollment in a minimum of 12 units each semester. Also note that most of the courses listed are only offered in either the FALL or SPRING semester.

### **SAMPLE SCHEDULE**

MS students in epidemiology are under Graduate Division Plan II, which requires a minimum of 48 units and an oral comprehensive examination. The MS degree requires two years of academic residence to meet minimum requirements. Students admitted to the MS program are generally limited to those considered highly likely to seek admission to doctoral studies in epidemiology upon completion of their MS degree.

Students in the MS program generally follow a curriculum similar to that of students in the two-year MPH program in epidemiology/biostatistics, but do not have to meet the school-wide breadth requirements, although they are strongly encouraged to take courses in various public health disciplines outside epidemiology and biostatistics.

### First Year

Fall Semester		Units
PB HLTH 142	Introductory Biostatistics	4
or PB HLTH 145	or Statistical Analysis of Continuous Outcome Data	4
PB HLTH 250A	Epi Methods I	3
or PB HLTH 250B	or Epi Methods II	4
PB HLTH 292	Seminar	2
	Elective	2-3
Spring Semester		Units
PB HLTH 241	Analysis of Categorical Data	4
PB HLTH	Electives	8-10

### Second Year

Fall Semester		Units
PB HLTH 245	Multivariate Statistics	4
or PB HLTH C242C	Longitudinal Data Analysis	4
PB HLTH 250B	Epi Methods II	4
PB HLTH 251C	Meta-Analysis in Epi	2
or PB HLTH 292	or Capstone I Seminar	2
	Electives	≥ 2
Spring Semester		Units
PB HLTH C242C	Longitudinal Data Analysis	4
PB HLTH 292	Capstone II Seminar	2
PB HLTH	Electives	≥ 6

All students in this program are required to take PB HLTH 292, Epidemiology Seminar, in the fall semester of their first year. Students who do not have experience reviewing the epidemiologic literature and writing about epidemiologic topics are strongly encouraged to take PB HLTH 251C, Causal Inference and Meta-Analysis in Epidemiology, in the fall semester. Students interested in a greater depth of understanding of epidemiologic methods and theoretical underpinnings are encouraged to take PB HLTH 250C, Epidemiologic Theory. Students are also encouraged to take courses in a third area related to their research interests (e.g. virology, demography, anthropology, sociology, etc.).

### COMPREHENSIVE EXAM

During the spring semester preceding graduation, students in the two-year MPH program must present and defend an in-depth paper on an epidemiologic topic to be handed in early in the spring semester. Specific guidelines will be provided in the Capstone I seminar. In the

fall semester before the paper is due, each student will be assigned to a faculty member with expertise in the subject matter of the student's proposed paper. The student will work with and receive ongoing input from that faculty member during the various stages of planning and writing the paper. (Details concerning the paper topic, format, due dates for various stages of development of the paper can be found in the Epidemiology Masters Paper Guidelines.)

In the spring semester, each student will give a brief oral presentation concerning his or her paper on a pre-assigned date and will then be questioned by two or more faculty. Specifically, in this oral comprehensive examination, the student will be expected to defend his or her written paper and, in the process, demonstrate competence in and a firm grasp of epidemiologic and biostatistical methods and approaches relevant to studies of disease causation and prevention. Decisions on the outcome of the comprehensive examination will be given to the student the day of the examination as satisfactory or unsatisfactory. In the event of an unsatisfactory outcome, a written and/or oral re-examination is the usual recommended course of action. Students who do not pass the re-examination are not eligible to receive the Masters degree.

## IV. Epidemiology PhD Requirements

### OVERVIEW

The PhD program is administered by the Group in Epidemiology, which is appointed by the Graduate Division and includes faculty members from a number of other disciplines and departments at Berkeley, as well as faculty from the UC San Francisco campus. In addition to the courses required for the master's degree, PhD students identify a third area of scientific knowledge in which they will develop competence. Normally, a minimum of one additional year of study is required following receipt of the master's degree before taking the qualifying examination and being advanced to candidacy for the PhD degree. After advancement to candidacy, students must conceive, conduct, and complete an original research project culminating in a dissertation. The normative time in the PhD program is four years.

In order to be admitted to candidacy, the student must submit a prospectus and pass a three-hour oral qualifying examination which is conducted by a four-member faculty committee. The four-member committee must be approved by the Graduate Division. After being admitted to candidacy, a three-member Dissertation Committee (approved by the Graduate Division) monitors the progress of the student. The Dissertation Committee is responsible for guiding and supervising the student's research and for assuring that the thesis meets the highest standards of excellence.

### 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 which satisfy the criteria for sound science

## LEARNING OBJECTIVES

PhD degree recipients in epidemiology are preparing to assume academic and/or public health careers in research and teaching. Students should be able to do the following upon completion of the PhD degree in epidemiology:

- » Demonstrate a high degree of mastery of epidemiologic research design and methods by successfully designing and carrying out original research to discover new knowledge in epidemiology and the biological or social sciences related to human health or making advances in methodologic theory or applications.
- » Demonstrate an in depth knowledge and understanding of theoretical concepts and practical applications of epidemiology and biostatistics, as well as the principles underlying the ethical conduct of human research.
- » Communicate and present epidemiologic research findings in their area of expertise to peers and fellow students in a lucid, understandable manner.
- » Demonstrate competence in a third area of public health or science appropriate to their research in addition to epidemiology and biostatistics (e.g. anthropology, virology, sociology, health policy, demography, etc.)

## CURRICULUM

The amount of coursework necessary for each doctoral student in the PhD program will vary depending on the student's previous educational experience and background. However, the Graduate Group requires competence in the material covered by the following courses.

---

**NOTE:** Graduate Division requires that no more than one-third of units in an individual's total curriculum while at UC Berkeley be taken as Satisfactory/Unsatisfactory. Any PB HLTH 299 series units are not counted in this calculation.

### Required Courses during Years 1 and 2

PB HLTH 250B (Fall) Epidemiologic Methods II (Letter-grade)

PB HLTH 250C (Spring) Advanced Epidemiologic Methods (Letter-grade)

PB HLTH 293 (Fall & Spring) Epidemiology Doctoral Seminar

Enroll for the appropriate section (noted on the course offerings at [epi.berkeley.edu](http://epi.berkeley.edu))

Required every-semester for years 1 & 2, and strongly recommended through the remaining years in the program

PB HLTH 241 (Spring) Statistical Analysis of Categorical Data (Letter-grade)

PB HLTH 252D (Causal Inference I) and PB HLTH 252E (Causal Inference II)

At least one semester of causal is required. Exceptions may be made, but on a case-by-case basis

PB HLTH 290 Grant Writing Seminar

### Recommended Courses

PB HLTH 207A	(Spring) Public Health Aspects of Maternal/Child Nutrition (Letter-grade)
PB HLTH 235	(Fall) Impact Evaluation for Health Professionals (Letter-grade)
PB HLTH 245	(Fall) Introduction to Multivariate Statistics (Letter-grade)
PB HLTH C242C	(Spring) Longitudinal Data Analysis (Letter-grade)
PB HLTH 252C	(Fall) Intervention Trial Design (S/U)
PB HLTH 252D	(Spring) Causal Inference I (Letter-grade)
PB HLTH 252E	(Fall) Causal Inference II (Letter-grade)
PB HLTH 255A	(Spring) Social Epidemiology (Letter-grade)
PB HLTH 255D	(Spring) Methods in Social Epidemiology (S/U)
PB HLTH 256A	(Spring) Human Genome, Environment and Health (Letter-grade)
PB HLTH 256B	(Spring) Genetic Analysis Methods (Letter-grade)
PB HLTH 257	(Fall, Spring) Outbreak Investigation (S/U)
PB HLTH 258	(Spring, odd years) Cancer Epidemiology (Letter-grade)

Students must take online training in human subject research and obtain prior human subjects approval for planned dissertation research.

In addition, students are expected to develop expertise in a “third” area, which is a content or methods area not included in the above required content. The selection of an area is at the discretion of the student but should be discussed with the student’s adviser as soon as possible, since content in the “third” area is part of the qualification examination for advancement to candidacy.

### Designated Emphasis

A “Designated Emphasis” is defined as an area of study constituting a new method of inquiry or an important field of application relevant to two or more existing doctoral degree programs. It is not a free-standing degree program, but must be added as an additional major along with an existing doctoral degree program. Students electing to add a Designated Emphasis are required to complete the academic work in the Designated Emphasis in addition to all the requirements of the doctoral program. There are no adjustments made to the normative time of the student’s major when a student undertakes a Designated Emphasis.

To qualify for the Designated Emphasis, students must have on the Qualifying Examination committee a representative of the DE and must be examined in that area of study. Students are consequently required to be admitted to the DE before taking the Qualifying Examination.

As an Epidemiology student you might be interested in learning more about Computational Biology and Bioinformatics as part of your doctoral curriculum. If so, students should pursue a Designated Emphasis in Computational Biology (“DE”) as part of your PhD experience at UC Berkeley. Please see DE requirements at [ccb.berkeley.edu](http://ccb.berkeley.edu). Contact Kate Chase for more information at [katechase@berkeley.edu](mailto:katechase@berkeley.edu).

### Teaching

Every doctoral student in epidemiology is expected to serve for at least one semester as a Graduate Student Instructor (GSI) before taking the qualifying examination. Teaching fortifies theoretical knowledge gained in coursework, prepares students for academic careers, and provides service to the Division and the School of Public Health. GSIs are required to complete a 300-level semester-long teaching pedagogy seminar before or during their first teaching

appointment at Berkeley. The Graduate Division also mandates that first time GSIs take the online course on GSI Professional Standards and Ethics Course and attend a Teaching Conference. For more information, please see [gsi.berkeley.edu/](http://gsi.berkeley.edu/)

### **Ethics Training**

Knowledge of how to conduct ethical research is essential. In addition to a required course in research ethics in epidemiology, all doctoral students must complete the UC Berkeley Online Human Subjects Training prior to taking the qualifying examination (see below).

### **Annual Review of Progress**

To ensure that students advance in a timely manner, an annual review form will be completed by the PhD student and his/her faculty adviser (can be found on page 19: Links to Important Graduate Division Forms). This form will be included in the student's permanent academic file.

## **RESIDENCY REQUIREMENTS**

Epidemiology doctoral students must register and enroll in at least 12 units per semester for a minimum of four semesters of academic residence at Berkeley.

Information regarding residency for tuition purposes can be found at [registrar.berkeley.edu/Residency/legalinfo.html](http://registrar.berkeley.edu/Residency/legalinfo.html). Questions regarding residency should be directed to the Residence Affairs Unit at [ores@berkeley.edu](mailto:ores@berkeley.edu) or 510-642-5990.

## **QUALIFYING EXAMINATION**

Prior to writing the dissertation, each PhD student in epidemiology must pass a Qualifying Examination, which is required by the Graduate Division of all doctoral students at the University of California, Berkeley. The qualifying process requires the following steps:

1. Preparation of a written prospectus for the dissertation work
2. An Oral Qualifying Examination on the breadth and depth of knowledge in epidemiology, biostatistics, and a "third area"
3. Discussion and approval of the prospectus with the dissertation committee

In most cases, the Qualifying Exam should be complete in the fourth or fifth semester of study.

### **Prospectus**

Each student must prepare a written prospectus, the structure and content of which are provided to students. The prospectus must take the form of a detailed proposal, described elsewhere, for an epidemiologic study. In most instances, the prospectus should be directly related to the student's proposed dissertation research. The prospectus should be written for an audience with general knowledge of epidemiologic and biostatistical principles and methods, but knowledge that is highly specific to the proposed study, particularly knowledge relating to clinical, laboratory, environmental, genetic, or social/behavioral variables, scales, etc. should not be assumed. In preparing their prospectus, students are permitted to use any written materials that are available in the public domain as resources and to consult with their adviser or with other faculty members and fellow students. However, students may not have assistance in the actual writing of their prospectus, which must be entirely the original work of the student (This requirement does not preclude the student from receiving and making improvements in response to feedback from his/her adviser on a preliminary draft of the prospectus.). After the

final version of the prospectus is submitted to the faculty adviser, the adviser must certify that he/she has read the prospectus; that he/she finds the prospectus of acceptable quality; and that to the best of his/her knowledge, the prospectus represents the original work of the student. Through his/her prospectus, the student is expected to demonstrate convincingly that he/she possesses the following skills which are defined in a document provided to all students who are preparing for the QE: 1) conceptual; 2) problem solving; 3) critical/creative; 4) writing. Once the prospectus has been certified by the adviser, the student may proceed to schedule and take the Oral Qualifying Examination. Once the Oral Qualifying Examination has been scheduled, it is advisable to also schedule the Discussion of the Prospectus. The details on the format and content of the prospectus are available from the Epidemiology Student Affairs Officer.

### **Oral Qualifying Examination**

For most epidemiology PhD students, the Qualifying Examination should take place after three or four semesters of coursework, although some students may require either less or more preparation, depending on their level of preparation at the time of entering the PhD program. It is the shared responsibility of the student and his/her faculty adviser to assure that the student is taking appropriate coursework in epidemiology, biostatistics, and the student's chosen "third area" and that the student is adequately prepared to take the Qualifying Examination.

The purpose of the Qualifying Examination is to assess the adequacy of a student's preparation to conduct dissertation research in epidemiology. All epidemiology PhD students will be examined and be required to demonstrate competence in epidemiology, biostatistics, and a "third area" of the student's choosing. The "third area" is typically chosen so as to be relevant to the student's proposed dissertation research. The Qualifying Examination is intended to assess the breadth and depth of the student's knowledge with regard to the history, theory, concepts, and "real world" application of epidemiology, biostatistics, and the specified "third area." The Qualifying Examination is not a defense of the prospectus.

Once the student's adviser has certified that the student's prospectus is of acceptable quality, and that the student is otherwise adequately prepared to take the Qualifying Examination, the student must prepare and submit a formal application for the Qualifying Examination to Graduate Division. This application must be approved by the Head of the Graduate Group in Epidemiology and must be submitted to the Epidemiology Student Affairs Officer. Only the Student Affairs Officer can submit the application to the Graduate Division.

The Graduate Division requires that this application be submitted a minimum of three weeks prior to the proposed date of the Qualifying Examination.

To be eligible to take the Qualifying Examination, the Graduate Division requires that the student:

1. Be registered for the semester in which the exam is taken or, if taken during the winter or summer break, be registered in either the preceding or the following semester.
2. Have completed at least one semester of academic residence.
3. Have at least a B average in all work undertaken in graduate standing.
4. Have no more than two courses graded "Incomplete".

Students may not take the exam before being notified that admission to the exam has been approved in writing by the Graduate Division.

Included in the information on the application for the Qualifying Examination are the three areas in which the student is to be examined (epidemiology, biostatistics, and a “third area” the student selects) and the four faculty who will comprise the Qualifying Examination Committee. The composition of the QE Committee must meet the requirements of and be approved in writing by the Graduate Division. The student’s faculty adviser (who is presumed to be the chair of the student’s dissertation committee) cannot serve on the student’s Qualifying Examination Committee. One member on all QE and Dissertation Committees must be chosen from outside the student’s degree granting program. This Academic Senate Representative is important for ensuring that the committee is conducted in a fair and professional manner. The Academic Senate Representative must be a member of the Berkeley Academic Senate. A student’s Qualifying Examination Committee will consist of four faculty members as follows:

1. Chair: The Chair of the Qualifying Examination Committee must be either a ladder rank faculty (i.e. a member of the UC Berkeley Academic Senate) member of the Epidemiology Graduate Group or an adjunct faculty member of the Epidemiology Graduate Group who has been approved in writing by the Dean of the Graduate Division to serve as the chair of a Qualifying Examination Committee.
2. Member: A ladder rank faculty member (i.e. a member of the UC Berkeley Academic Senate) of the Epidemiology Graduate Group or an adjunct faculty member of the Epidemiology Graduate Group who has been approved in writing by the Dean of the Graduate Division to serve as a member of a Qualifying Examination Committee.
3. 2nd Member: A second ladder rank faculty member (i.e. a member of the UC Berkeley Academic Senate) of the Epidemiology Graduate Group or an adjunct faculty member of the Epidemiology Graduate Group who has been approved in writing by the Dean of the Graduate Division to serve as a member of a Qualifying Examination Committee. This member must also be a faculty member in the Division of Biostatistics.
4. Academic Senate Representative: A ladder rank faculty member of the UC Berkeley Academic Senate who is *not* a core member of the Epidemiology Graduate Group.

Affiliated members who are Academic Senate faculty may serve as Academic Senate Representatives for students in that graduate group, and by exception, as Chair, Co-Chair, or Additional Member. Affiliated members who are not Academic Senate faculty may serve by exception as Co-Chair or Additional Member. There are no restrictions on an affiliated member serving as a Chair, Additional Member, and/or Academic Senate Representative simultaneously for different students in the same graduate group.

A link to the list of Epidemiology Graduate Group members can be found on page 19: Links to Important Graduate Division Forms, including information concerning which adjunct faculty members have standing permission to chair and/or serve on Qualifying Examination Committees. The chair and the second epidemiology faculty member of each Student’s Qualifying Examination Committee will be selected by the Head of the Graduate Group (or his designee) from among the eligible faculty by a process intended to assure that appropriate expertise is represented on each committee and that all eligible faculty participate in examinations periodically. The biostatistics faculty member and the “Academic Senate Representative” for each QE Committee will be selected in consultation with the respective student, taking into account the student’s prior coursework; his/her chosen “third area;” and the willingness and availability of suitable faculty to serve.

### **Conduct and Content of the Qualifying Examination**

Materials are provided to students that explain the structure of the examination and a listing of areas of theory, practice and subject matter that are the domain for the examination. These materials will be made available to students upon request by the Epidemiology Student Affairs Officer.

A student who fails or partially fails the Qualifying Examination, as well as his/her faculty adviser, will be informed about the area(s) of deficiency that led to the failure. A student may re-take the Qualifying Examination once, it must be scheduled at least 90 days after the first exam was held; any student who fails the Qualifying Examination a second time may not advance to candidacy or remain in the doctoral program.

### **Discussion of Prospectus**

Once the student has passed the Oral Qualifying Examination, the student must establish a dissertation committee through the Graduate Division and then have a discussion of the prospectus with all members of the committee. This discussion needs to occur within 90 days after the Oral Qualifying Examination. The prospectus will be distributed to the dissertation committee at least three weeks before the scheduled date of the discussion of the prospectus. Committee members will have read the prospectus before the discussion. The committee members will discuss the research plan for the dissertation with the student, resolve any differences of opinion on approach amongst the committee members and the student, and decide on any changes to the research plan that are necessary. The discussion will be scheduled for a 2 hour period. The committee can decide whether to request an opportunity to review the prospectus again after the changes have been implemented by the student. Once the committee agrees that the prospectus is acceptable, the student can commence work on the dissertation. It is recommended that the full committee meet annually with the student to discuss the progress of the student and the dissertation work.

### **ADVANCEMENT TO CANDIDACY**

To be advanced to candidacy, doctoral students must:

1. Pass the Oral Qualifying Examination;
2. Have no more than two courses graded incomplete;
3. Have a minimum 3.0 grade-point average in all upper division and graduate courses taken in graduate standing.

Dissertation committees must be chaired by a UC Berkeley Academic Senate member. The dissertation committee for the PhD consists of three faculty members, one of whom must be from outside the Group in Epidemiology and a UC Berkeley Academic Senate member.

Doctoral students are expected to meet with all members of the dissertation committee at least annually to review progress toward completion of the dissertation research. Students are encouraged strongly to have a schedule of regular meetings with the dissertation chair.

Once a student has passed the Oral Qualifying Examination, the student submits an "Application for Advancement to Candidacy" form (can be found on page 19: Links to Important Graduate Division Forms) and a copy of the student's CITI certification (see below) to the Division's Student Affairs Officer, Janene Martinez (Room 113 Haviland Hall). The application form must be signed by

the chair of the dissertation committee and accompanied by a check for \$90 made payable to the UC Regents. Please note: The proposed members of the dissertation committee must be listed on this application form.

### **Human Subjects Training and Approvals**

Doctoral students are responsible for obtaining any necessary approvals or exemptions from the UC Berkeley Committee for the Protection of Human Subjects for carrying out their dissertation research BEFORE they begin data collection or analysis of an extant data set, even if the study has received institutional review board approval elsewhere and/or previously collected data are being used.

All students who plan to engage in human subjects research must first complete and pass the appropriate Collaborative IRB Training Initiative (CITI) web-based education program modules. They can then be *certified* to serve as a “lead investigator” or as “key personnel” on any UC Berkeley human subjects research project.

No protocol submitted to CPHS with a student listed on the application coversheet or added as an amendment will be approved, re-approved, or determined to be exempt without documentation of the student having completed and passed all CITI course modules and quizzes as required and as appropriate to the type of research (biomedical or social-behavioral) to be conducted. Completing the training and passing the quiz modules associated with the CITI program will certify a UC Berkeley-affiliated individual as trained in human subjects research. This training will also fulfill NIH human subjects training requirements, and for individuals who qualify for Principal Investigator (PI) status, will certify eligibility to serve as the PI or key personnel on a human subjects research project funded by NIH. NIH-funded investigators are encouraged to complete the appropriate CITI training modules even if they have documentation of training elsewhere or through other programs. Certification from the initial CITI training program is valid for three years. Recertification through the CITI continuing education program is required every three years thereafter. The passing score for the Core Course Modules or the Continuing Education Course is 80%. The CITI program can be found at [citiprogram.org/default.asp](http://citiprogram.org/default.asp). Students are also encouraged to take the NIH course on human subjects research, which can be found at [phrp.nihtraining.com/users/login.php](http://phrp.nihtraining.com/users/login.php).

After a student has completed and passed the appropriate modules for his/her research project, a message is automatically sent directly to the UC Berkeley Office for the Protection of Human Subjects (OPHS). Once the student finishes the course, a link will appear in his/her Learner’s Menu (main menu) called “Completion Report.” *The student should print out and maintain a copy of the Completion Report.* All students must submit a copy of their certification at the time of protocol submission to CPHS, and must attach a copy to their “Advancement to Candidacy” form. Any questions about human subjects training and approvals should be directed to the Office for the Protection of Human Subjects (OPHS), Power Building at 2150 Shattuck Avenue, Suite 313. Email: [cphs@berkeley.edu](mailto:cphs@berkeley.edu).

### **Advancement to Candidacy Award**

Students who have submitted their advancement to candidacy documents are eligible to receive a one-time stipend from the School of Public Health Grossman Fund of \$2,500.

### Doctoral Candidacy

Candidacy for the PhD degree is of limited duration. When a student is advanced to candidacy, the Graduate Division informs him or her of the number of semesters he or she is eligible to be a candidate, based on time in candidacy, or “Normative Time.” Students who do not complete the PhD within that time, plus a two-year grace period, will have their candidacy lapsed by the Graduate Division.

### Lapsing of Candidacy

Lapsing of candidacy is a probationary status, usually lasting two years, for students who have not completed the final requirements for their degree at an adequate rate. Usually, a student’s candidacy is lapsed by the Graduate Division two years after he or she exceeds the Normative Time in candidacy for the discipline, unless the department requests and the Graduate Division grants an extension. Departments can recommend that a student’s candidacy be lapsed earlier if the student is given a written warning six months before lapsing is to take effect. A student whose candidacy has been lapsed may not hold any academic appointment on campus, including that of Graduate Student Instructor or Graduate Student Researcher.

---

**PLEASE NOTE:** The Graduate Division usually will not accept Oral Qualifying Examinations more than five years old as representing current knowledge, unless the student provides other evidence of continuing scholarly activity besides research for the dissertation. This policy is based on the Graduate Council’s belief that the Oral Qualifying Examination and submission of the dissertation are not separate “hurdles,” but together form an integrated educational experience for the PhD candidate.

## DISSERTATION

General but very helpful information on writing and filing the dissertation can be found on the Graduate Division site, [Dissertation Writing and Filing](#), and [Graduate Division Writing Workshops](#).

### The Dissertation Writer’s Room

An additional resource for students working on dissertations is the Dissertation Writer’s Room, a space dedicated to doctoral students advanced to candidacy, opened in Room 215 of the Doe Library on June 21, 2010. The room provides a dedicated space encouraging focus and concentration on your writing in the quiet company of fellow doctoral candidates from humanities and social science disciplines.

Located in Room 215 of the Doe Library, at the rear of Graduate Services (208 Doe), the Dissertation Writer’s Room hours are Monday through Thursday, 9 am to 9 p.m.; Friday, 9 a.m. to 5 p.m.; and Sunday, 1 to 9 p.m. You must sign up beforehand and show your UC Berkeley ID card when you enter 208 Doe, as the Doe Library’s Graduate Services is reserved for the exclusive use of UC Berkeley graduate students, faculty, and staff. The Dissertation Writer’s Room accommodates six students using the study tables and two using the reading chairs. As utilization increases, this will be expanded. Wireless Internet connections are available via AirBears2.

Doe’s Graduate Services section is a study space for all graduate students, housing around 25,000 volumes and a reserve library for graduate courses in the humanities and social sciences. The core collection comprises standard editions of core texts, works of major theorists, titles on master’s exams reading lists, and other materials heavily used by graduate

students in the humanities and social sciences. Graduate Services also houses the Modern Authors Collection (XMAC), comprising the works of major 20th century English, American, and Anglophone literary authors, and a small collection of English and foreign language dictionaries.

In addition to the study spaces in Graduate Services, study carrels in the Gardner (main) Stacks can be reserved by graduate students. Graduate students may apply at the Doe Circulation Desk for these carrels, and books from the Gardner Stacks may be charged out and kept in the carrels.

### **Presentation of Dissertation Research**

Doctoral students are expected to present their research plans and progress/results periodically in the epidemiology doctoral seminar PB HLTH 293. While the Graduate Division does not require a public thesis defense, all doctoral students are expected to present the findings of their dissertation research in a scheduled seminar during the semester. Two venues are available: PB HLTH 293 and the Epidemiology Research Seminar Series.

### **Annual Review of Doctoral Students**

The Graduate Council requires that all doctoral students who have advanced to candidacy meet annually with at least two members of their dissertation committee. This annual review is part of the Graduate Council's efforts to improve the doctoral completion rate and to shorten the time it takes to obtain a doctoral degree.

### **Withdrawal**

Students who choose not to register for a given semester *must* formally withdraw in order to remain in good standing. Withdrawing from the University must be approved by the graduate adviser chair and the Graduate Division. Students are entitled to *two* semesters of formal withdrawal which do not count in the accrued time to degree.

### **How to Withdraw from the University**

There are two forms that need to be submitted (to the Division's Student Affairs Officer, Janene Martinez in 113 Haviland Hall) to withdraw from the University and then to be re-admitted.

1. "Notice of Withdrawal" petition
2. "Application for Readmission"
3. "Legal Residence Petition"

### **Filing the Dissertation**

Doctoral degrees are awarded in December and May. Academic senate regulations state that in order to receive a degree in any given term, all work for the degree must be completed by the last day of the term. *This is a firm deadline.* 

**Areas of Study**

# **EPIDEMIOLOGY/ BIOSTATISTICS**

**(MPH)**

# EPIDEMIOLOGY/BIOSTATISTICS

## I. Epidemiology/Biostatistics Program

About the Program

Mission

Core Competencies

## II. Epidemiology/Biostatistics Curriculum

Two-Year MPH Curriculum

Two-Year Sample Schedule

## III. Epidemiology/Biostatistics Capstone

Comprehensive Exam

## I. Epidemiology/Biostatistics Program

### **ABOUT THE PROGRAM**

The two-year MPH has a flexible structure, allowing students to explore the field of public health, epidemiology and biostatistics according to their individual interests. Most students take about 1/3 epi classes, 1/3 biostat classes, and 1/3 electives. All MPH students must enroll in the breadth courses (PB HLTH 200J, K, L). Epi/Biostat MPH students are expected to take the first year and second year seminars (Epi/Biostat first year seminar PB HLTH 292.X and Epi/Biostat second year seminar PB HLTH 292.X). Most graduates work in research positions or with a state or local health agency, or go on to further doctoral study.

### **MISSION**

The mission of Epidemiology/Biostatistics is to generate new knowledge that can lead to improvements in health, while emphasizing and identifying emerging areas of inquiry, especially those that cross disciplinary boundaries; disseminate and apply existing and new knowledge in the training of health professionals who will engage directly with populations at highest risk of poor health, and/or who will conduct research in epidemiology and biostatistics; and serve the larger communities in which we live and work by using our skills and knowledge. In addition, epidemiologic studies are an essential component of the evaluation of the effectiveness of such programs.

### **CORE COMPETENCIES**

Upon satisfactory completion of the MPH curriculum with a concentration in Epidemiology, graduates will be able to demonstrate the following competencies:

- » Demonstrate methodological expertise in selecting and formulating a research hypothesis, study design, obtaining or collecting epidemiologic data, 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 write clear grant proposals and results of research studies.

## II. Epidemiology/Biostatistics Curriculum

### TWO-YEAR MPH CURRICULUM

#### Unit Requirements

Two-year MPH students are required to complete a minimum of 48 total units of coursework over four academic semesters and one summer. The minimum unit enrollment per academic semester is 12 units. Students in the two-year MPH program must meet all school-wide breadth requirements.

#### Grading

Students have the option of taking a course on a Satisfactory/Unsatisfactory (S/U) basis, but no more than one-third of the master's program may be fulfilled by courses graded Satisfactory. Students cannot take MPH breadth course requirements on an S/U basis. No more than 12 units may be in the 296, 297, 298, 299 series.

---

**IMPORTANT NOTE:** breadth courses MUST BE TAKEN FOR A LETTER-GRADE and a student must receive a B- or above to fulfill this requirement. Exceptions to this policy are rare and made on a case-by-case basis.

#### Courses

You can enroll in classes through the online system: [calcentral.berkeley.edu](http://calcentral.berkeley.edu). Please check the online schedule at [schedule.berkeley.edu](http://schedule.berkeley.edu) each semester for new courses and for course availability. Courses in the PB HLTH 290, 292, 298, and 299 series may change their section numbers each semester. Course Numbers (previously CCNs) will also change every semester. Additionally courses numbered 99 and below are considered to be undergraduate courses. Graduate students may take no more than half of the required degree units in courses numbered 100 through 199. Courses numbered below 99 **do not** count toward meeting any graduate degree requirements.

#### Required Courses for the MPH Degree

PB HLTH 200J, L	Public Health Core Breadth Seminar (2 units each, Fall)
PB HLTH 200K	Public Health Core Breadth Seminar (2 units, Spring)
PB HLTH 297	Public Health Field Placement (3 units, Fall)

Please be aware that full-time student status requires an enrollment in a minimum of 12 units each semester. Also note that most of the courses listed are only offered in either the FALL or SPRING semester.

**TWO-YEAR SAMPLE SCHEDULE****First Year Program**

Fall Semester		Units
PB HLTH 200J	HPM Breadth	2
PB HLTH 200L	HSB Breadth	2
PB HLTH 142 or 145	Intro to Prob Stat or Cont Outcome Data	4
PB HLTH 250A or 250B	EPI methods I or EPI methods II	3
PB HLTH 292.X	MPH SEMINAR	3
PB HLTH	Elective(s)	2

Spring Semester		Units
PB HLTH 200K	EHS Breadth	2
PB HLTH 144A	Intro SAS Program	2
PB HLTH 144B	Intermediate SAS Program	2
PB HLTH 241	Analys Categorical Data	4
PB HLTH	Elective(s)	

**Second Year Program**

Fall Semester		Units
PB HLTH C242C	Longitudinal Analysis	4
PB HLTH 250B	EPI methods II, if not taken first year	4
PB HLTH 297	PB HLTH Field Study	4
PB HLTH 292.X	Capstone I Seminar	3
PB HLTH	Elective(s)	

Spring Semester		Units
PB HLTH XXX	Biostat/Methods Elective	2-4
PB HLTH 292.X	Capstone II Seminar	2
PB HLTH	Elective(s)	to 12 units

**Key Epidemiology Courses**

PB HLTH 142 Introduction to Probability and Statistics in Biology & Public Health (4 units), if no previous coursework in statistics. If you have a solid background in stats you may enroll in PB HLTH 245 (below)

PB HLTH 145 Statistical Analysis of Continuous Outcome Data (4 units)

PB HLTH 241 Statistical Analysis of Categorical Data (4 units)

If, for some reason, you can only take PB HLTH 145 OR PB HLTH 241, we recommend taking PB HLTH 241

- PB HLTH 250A Epidemiologic Methods I, can be waived if student possesses a strong background in Epi (3 units). If so, students can take PB HLTH 250B (below).
- PB HLTH 250B Epidemiologic Methods II (4 units)
- PB HLTH 292.X Thesis seminar for Epidemiology-Biostatistics students (serves to guide students through the process of a Master's thesis using secondary data) (2 units, S/U)

---

**NOTE:** (PB HLTH 251C and PB HLTH 292.X are designed to help guide you through the thesis-writing process)

- PB HLTH 292.X Epidemiology/Biostatistics seminar for Epi/Bio students  
(2 units, 1st semester)
- PB HLTH 292.X Epidemiology/Biostatistics Seminar for Epi/Bio students  
(2 units, 4th semester)

### Recommended Courses:

- PB HLTH 206C Nutritional Epidemiology (3 units)
- PB HLTH 207A Public Health Aspects of Maternal and Child Nutrition (2-3 units)
- PB HLTH 210D Reproductive Perinatal Epidemiology (2 units)
- PB HLTH C242C Longitudinal Analysis (4 units)
- PB HLTH 245 Introduction to Multivariable Statistics (4 units)
- PB HLTH 250C Advanced Epidemiologic Methods (4 units)
- PB HLTH 251C Causal Inference and Meta-Analysis  
(students who do not have experience reviewing the epidemiologic literature and writing about epidemiologic topics; 2 units)
- PB HLTH 251D Applied Epidemiology using R (2 units)
- PB HLTH 252B Infectious Disease Modeling (2-4 units)
- PB HLTH 253B Epidemiology and Control of Infectious Diseases (2 units)
- PB HLTH 253D Behavior & Policy Science in HIV Treatment and Prevention (3 units)
- PB HLTH 253G Sexual Health Promotion and Sexually Transmitted Disease Control (2 units)
- PB HLTH 255A Social Epidemiology (3 units)
- PB HLTH 255D Methods in Social Epidemiology (2 units)
- PB HLTH 256 Molecular & Genetic Epidemiology and Human Health in the 21st Century  
(4 units)
- PB HLTH 257 Outbreak Investigation (2 units)
- PB HLTH 258 Cancer Epidemiology (2 units, odd years)
- EDUC 275G Longitudinal Hierarchical Models (3 units, Fall)

## III. Epidemiology/Biostatistics Capstone

### COMPREHENSIVE EXAM

Each student in the Epidemiology and Epidemiology/Biostatistics master's program is required to submit a written paper in the year-long MPH capstone experience. Papers submitted by the deadline must be considered final. The defense of the paper in the spring semester, in the presence of two or more faculty, is designed to meet the requirement of the Graduate Division and the School of Public Health for an oral examination. All students must receive a separate passing grade for the paper and the oral examination in order to receive the MPH degree. More details about the

final due date for paper submission and dates and process for the defense will be provided later in the document.

Students will be provided with specific guidelines in their Capstone I seminar.

There are five features that should be common to all papers submitted to fulfill this requirement:

1. The paper must be original work done by the student
2. The paper must demonstrate that it is built on existing knowledge
3. The paper must demonstrate knowledge of/competence in basic concepts related to epidemiologic research (e.g. study design and analysis, bias, confounding, effect modification, etc.)
4. The paper must make clear the relevance of the topic to health/public health
5. The paper must be well written. 🌀

**Areas of Study**

**HEALTH AND  
SOCIAL BEHAVIOR  
(MPH)**

# HEALTH AND SOCIAL BEHAVIOR

## I. Health and Social Behavior Program

Introduction

Mission

Core Competencies

## II. Health and Social Behavior Curriculum

Two-Year MPH Curriculum

Two-Year Sample Schedule

## III. Health and Social Behavior Capstone

## I. Health and Social Behavior Program

### INTRODUCTION

Health and Social Behavior is one of three programs of study (the Health and Social Behavior Program, the Maternal and Child Health Program, and the Public Health Nutrition Program) that comprise the division of Community Health Sciences (CHS). The CHS Division's broadly multidisciplinary faculty represents, among others, the fields of medicine, epidemiology, sociology, health education, anthropology, health psychology, human reproduction, nutrition, economics, journalism, and moral philosophy.

### MISSION

Our mission is to train scholars and practitioners to identify and analyze the major social, cultural and biobehavioral determinants of health and health behavior; and to design, implement and evaluate social and behavioral interventions and social policies aimed at improving community and population health.

The core MPH curriculum for the HSB program includes coursework in the behavioral, bio-behavioral and social sciences as these relate to public health; in research methods; and in program planning and evaluation with an emphasis on the role of race/ethnicity, culture, class and gender in influencing physical and mental health status, interactions between the individual and society, and ethical issues in the design and implementation of community-based interventions.

### COMPETENCIES

Upon satisfactory completion of the MPH curriculum with a concentration in Health and Social Behavior, graduates will be able to:

- » Identify, assess and think critically about the determinants of community and population health, including cultural, social and biobehavioral factors contributing to health related behaviors.
- » Apply theoretical and methodological perspectives in analyzing the behavioral, cultural and ethical dimensions of a community health problem.
- » Critically analyze and evaluate the nature and process by which research informs practice and practice influences research in community and population health.
- » Develop a study protocol detailing research questions, sampling strategy and qualitative or quantitative research methods employed.
- » Demonstrate cultural competence and cultural humility and an understanding of diversity.
- » Identify and implement a range of individual, interpersonal and community-wide health promotion and disease prevention models and strategies.
- » Evaluate the effects of community intervention programs and policies.
- » Develop and articulate policy options for the achievement of health promotion and disease prevention objectives within a broad community or population health context.
- » Develop and implement strategies in health promotion advocacy and intervention.
- » Effectively communicate and collaborate with a range of groups and organizations in the community.

## II. Health and Social Behavior Curriculum

### TWO-YEAR MPH CURRICULUM

#### Unit requirements

Two-Year MPH students are required to complete a minimum of 48 units of coursework over four academic semesters and one summer. The minimum unit enrollment per academic semester is 12 units. *Courses on preparation for teaching as a GSI (300-level courses) and lower-division undergraduate courses do not count toward your 48 overall units, though they do count toward your semester 12-unit minimum.*

#### Grading

Required courses must be taken for letter grades except for the field placement which is taken on a Satisfactory/Unsatisfactory (S/U) basis. Recommended courses may be taken for letter or S/U grading unless otherwise stated. *Credit for courses taken on a S/U basis is limited to one-third of your total coursework. Public Health 291, 297, and 299 courses are excluded from the maximum S/U unit limit.*

#### Courses

Please check the online schedule at <http://schedule.berkeley.edu> each semester for new courses and course availability. Please be aware that section numbers of some courses may change each semester, particularly those courses in the PB HLTH 290, 292, 298, and 299 series. Course numbers for enrollment change every semester.

#### Minimum grade requirements

In order for students to be in good standing, they must maintain an overall grade-point average of at least 3.0 on the basis of all upper division and graduate courses (100- and 200-level) taken in graduate standing. Grade-points earned in Berkeley courses numbered below 100 or above 300 are not included in determining a student's grade-point average for remaining in good standing or earning a degree.

---

**IMPORTANT NOTE:** All MPH students must receive a grade of B- or higher in the school-wide breadth courses. This rule also applies to alternate courses. Please consult the School of Public Health Handbook for approved alternate courses. Students receiving less than a B- in a breadth course (or its alternate) will be required to retake the course or pass a waiver exam (if available) to fulfill degree requirements. Passing the waiver exams satisfy the requirement but do not earn units toward your degree.

### SCHOOL-WIDE REQUIREMENTS (14 UNITS)

HSB Program Required Courses (at least 29 units)		Units	Semester
PB HLTH 292.001	MPH Seminar: Introduction to HSB	2	Fall
PB HLTH 203A	Theories of HSB	3	Fall
PB HLTH 292.002	Capstone Course I in HSB	3	Fall
PB HLTH 292.002	Capstone Course II in HSB	1-3	Spring
PB HLTH 290	Program Planning & Needs Assessment	4	Spring
PB HLTH 218B	Evaluation of Health and Social Programs	4	Spring

HSB Program Required Courses (at least 29 units)		Units	Semester
PB HLTH XXX	One Research Methods course from a list	3-4	Fall/Spring
PB HLTH XXX	One course with a focus on Health, Race, and Equity	3	Fall/Spring
PB HLTH XXX	At least 6 units of Public Health/HSB courses taken for a letter grade	6	Fall/Spring

## TWO-YEAR SAMPLE SCHEDULE

As you plan your course of study, many resources are available, including your academic adviser, other faculty, the MPH Program Director and the HSB Field Program Supervisor. You may wish to consider course sequencing in relation to your field placement interests. Be sure to verify that a course is being taught in a given semester as schedules are subject to change to accommodate faculty sabbaticals or other needs.

### First Year Program

Fall Semester (16 units)		Units
PB HLTH 142	Introduction to Probability and Statistics in Biology and Public Health	4
PB HLTH 200J	Health Policy and Management Breadth Course	3
PB HLTH 200K	Environmental Health Sciences Breadth Course	3
PB HLTH 250A	Epidemiologic Methods I	3
PB HLTH 203A	Theories of HSB	3
PB HLTH 292.001	Introduction to HSB	2

Spring Semester		Units
PB HLTH 218B	Evaluation of Health and Social Programs	4
PB HLTH 290	Program Planning/Needs Assessment	4
PB HLTH XXX	Research Methods Course	3-4
PB HLTH XXX	HSB Elective Course	4

Summer Semester		Units
PB HLTH 297	Public Health Field Placement	

### Second Year Program

Fall Semester (at least 12 units)		Units
PB HLTH 292.002	HSB Fall Capstone Course I	3
PB HLTH 297	Public Health Field Placement	3
PB HLTH XXX	Course with a focus on Health, Race and Social Equity	2-3
PB HLTH XXX	HSB Elective Course	2-4

Spring Semester (at least 12 units)		Units
PB HLTH 292.002	HSB Spring Capstone Course II	1-3
PB HLTH XXX	HSB Elective Course	2-4
PB HLTH XXX	Other Elective Courses	2-3

**NOTE:** Field placement occurs during the summer but students register for and receive credit the following fall semester. Students must take at least 6 units of HSB elective courses for a letter grade. Students must complete at least 48 units toward the MPH degree.

### III. Health and Social Behavior Capstone

The Graduate Division of UC Berkeley and the School of Public Health require a capstone—also known as comprehensive exam or integrative learning experience (ILE)—with both written and oral components. The capstone builds on the core curriculum requirements of the School and the student’s MPH concentration and is intended to be a culminating experience requiring synthesis and integration of knowledge acquired through coursework, internships, and other experiences.

HSB faculty are currently revising our program capstone requirements with the goal of making the capstone more relevant to student needs and following the new Council on Education for Public Health (CEPH) accreditation criteria. Details will be provided by each program in the fall semester. 

**Areas of Study**

**HEALTH  
POLICY AND  
MANAGEMENT  
(MPH)**

# HEALTHY POLICY AND MANAGEMENT

## I. Healthy Policy and Management Program

Introduction

Mission

Core Competencies

Learning Objectives

## II. Health Policy and Management Curriculum

Two-Year MPH Curriculum

Two-Year Sample Schedule

One-Year MPH Curriculum

One-Year Sample Schedule

MPP/MPH Concurrent Degree Program

MBA/MPH Concurrent Degree Program

## III. Health Policy and Management Capstone

Comprehensive Exam

## I. Health Policy and Management Program

### INTRODUCTION

The Health Policy & Management Program offers a range of master's programs that allow you to align your graduate studies in health policy and management with how you want to contribute to the professional field. These include the 2-year MPH, the 1-Year MPH, the Online MPH, the MPP/MPH, and the MBA/MPH.

We believe that a foundation in both policy and management is necessary to effect change, but if you want to specialize in one or the other of these areas we can help by advising about electives, concurrent degree options, and field placements.

### MISSION

The mission of the Graduate Program in Health Policy and Management (HPM) is to promote and protect the public's health through the preparation of graduates for careers in health services policy and management, leading toward senior level leadership, and to conduct research and disseminate knowledge that will advance the organization, financing, delivery and access to health and medical services.

The HPM Program prepares students for entry level and higher health management and policy positions in a range of settings including health care delivery, financing, consulting, technology and governmental and nonprofit agencies. HPM students are trained in biostatistics, epidemiology, policy analysis, health promotion and disease prevention, health economics, the organization of health and medical care systems, strategic management, governance, organizational behavior, health finance, health information technology, law and ethics.

The HPM Program sees research as an integral component of its mission. Program faculty engage in basic and applied research that broadens the educational experience and expands the state of knowledge about how health services systems work. Faculty research on issues in the financing, organization, delivery and outcomes of health and medical services is fundamental to the quality of the program. Moreover, the dissemination of new knowledge generated through publishing and continuing education activities contributes to efforts to improve the availability, affordability, and effectiveness of health services and develop policies that reinforce these objectives.

### CORE COMPETENCIES

Upon satisfactory completion of the HPM curriculum, HPM graduates will be able to demonstrate the following health policy and management competencies.

- » 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, and 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.

### **LEARNING OBJECTIVES**

Upon satisfactory completion of the MPH curriculum with a concentration in Health Policy and Management, graduates will be able to demonstrate the skills identified in the following areas.

#### **Policy Analysis and Strategic Planning**

- » Critically assess existing health systems and practices and their political, economic and socio-cultural contexts.
- » Develop policy options for the achievement of an agency's or program's objectives.
- » Analyze the strengths and weaknesses of policy options from the perspectives of multiple stakeholder groups.
- » Gather and organize information on the aspects of the political situation that may affect the ability of an organization to achieve its objectives.
- » Apply core biomedical and public health sciences to policy development and policy implementation, including the use of concepts and scientific findings from epidemiology, biostatistics and the behavioral and social sciences.
- » Evaluate the effects of health policies.

#### **Management of Programs and Organizations**

- » Specify organization, department, or program missions and objectives.
- » Translate legislative mandates into organizational plans and programs.
- » Assess organizational structure and performance.
- » Manage organizational change and innovation.
- » Use methods of continuous quality assessment, assurance and improvement.
- » Conduct economic and financial analyses of health care organizational and benefit plans including managed care.
- » Explain budget processes, including basic accounting and fiscal monitoring techniques.
- » Conduct cost-effectiveness and cost-benefit analyses.

## **II. Health Policy and Management Curriculum**

### **TWO-YEAR MPH CURRICULUM**

#### **Unit requirements**

Two-Year MPH students are required to complete a minimum of 48 units of coursework over four academic semesters and one summer. The minimum unit enrollment per academic semester is 12 units. *Courses on preparation for teaching as a GSI (300-level courses) and lower-division undergraduate courses do not count toward your 48 overall units, though they do count toward your semester 12-unit minimum.*

## Grading

Required courses must be taken for letter grades except for the field placement, Public Health Practice coursework, and PB HLTH 291A, which are taken on a Satisfactory/Unsatisfactory (S/U) basis. Recommended courses may be taken for letter or S/U grading unless otherwise stated.

*Credit for courses taken on a S/U basis is limited to one-third of your total coursework. Public Health 291, 297, and 299 courses are excluded from the maximum S/U unit limit.*

## Courses

Please check the online schedule at <http://schedule.berkeley.edu> each semester for new courses and course availability. Please be aware that section numbers of some courses may change each semester, particularly those courses in the PB HLTH 290, 292, 298, and 299 series. Course control numbers for enrollment will change every semester.

## Minimum grade requirements:

In order for students to be in good standing, they must maintain an overall grade-point average of at least 3.0 on the basis of all upper division and graduate courses (100- and 200-level) taken in graduate standing. Grade-points earned in Berkeley courses numbered below 100 or above 300 are not included in determining a student's grade-point average for remaining in good standing or earning a degree.

Important Note: All MPH students must receive a grade of "B-" or higher in the school-wide breadth courses. This rule also applies to alternate courses. Please consult the School of Public Health Handbook for approved alternate courses. Students receiving less than a B- in a breadth course (or its alternate) will be required to retake the course to fulfill degree requirements.

School-wide Requirements (14 units)		Units	Semester
PB HLTH 142	Introduction to Probability and Statistics in Biology and Public Health	4	Fall
PB HLTH 200K	Environmental Health Sciences Breadth Course	2	Spring
PB HLTH 200L	Health and Social Behavior Breadth Course	2	Fall
PB HLTH 250A	Epidemiologic Methods I	3	Fall
PB HLTH 297	Public Health Field Placement	3	Fall

Though the field placement is completed over the summer, you will register for PB HLTH 297 in the fall semester of your second year. HPM students may add an optional field placement in their second fall semester.

HPM Program Required Courses (20 units)		Units	Semester
<b>Policy Implementation</b>			
PB HLTH 220	PB HLTH Health Policy Decision-Making ( <i>Management and Organization: One of the two following courses</i> )	3	Fall
PB HLTH 223C	Strategic Management and the Organization of Health Services	3	Spring
PB HLTH 224A	Health Care Organizations and Management ( <i>Microeconomics of Health Care: Both of the following taken in same semester</i> )	3	Spring

HPM Program Required Courses (20 units)		Units	Semester
PB HLTH 226A	Health Economics A	2	Fall
PB HLTH 226B	Health Economics B	2	Fall
<b>Statistical Methods</b>			
PB HLTH 231A	Analytic Methods for Health Policy and Management	3	Spring
<b>Professional Development</b>			
PB HLTH 223D	Foundations of Health Policy and Management	2	Fall
<b>Health Finance</b>			
PB HLTH 227A	Health Care Finance	3	Fall
<b>Capstone</b>			
PB HLTH 223E	Capstone Seminar in Health Policy and Management	2	Spring

## TWO-YEAR SAMPLE SCHEDULE

As you plan your course of study, many resources are available, including your academic adviser, other faculty, the MPH Program Director and the HPM Field Program Supervisor. You may wish to consider course sequencing in relation to your field placement interests. Be sure to verify that a course is being taught in a given semester as changes are sometimes made to accommodate faculty sabbaticals or other events.

### First Year Program

Fall Semester		Units
PB HLTH 142	Introduction to Probability and Statistics in Biology and Public Health	4
PB HLTH 200L	Health and Social Behavior Breadth Course	2
PB HLTH 220	Health Policy Decision-Making	3
PB HLTH 223D	Foundations of Health Policy and Management	2
PB HLTH 226A	Health Economics A	2
PB HLTH 226B	Health Economics B	2
PB HLTH 250A	Epidemiologic Methods I	3
Spring Semester		Units
PB HLTH 200K	Environmental Health Sciences Breadth Course	2
PB HLTH 223C <sup>1</sup>	Strategic Management and the Organization of Health Services	3
PB HLTH 224A <sup>1</sup>	Health Care Organizations and Management	3
PB HLTH 227A	Health Care Finance	3
PB HLTH 231A	Analytic Methods for Health Policy and Management	3
XXX	Elective(s)	

**Second Year Program**

Fall Semester		Units
PB HLTH 297 <sup>2</sup>	Public Health Field Placement	3
PB HLTH 297	Optional Public Health Field Placement	8
XXX	Elective(s)	

Spring Semester		Units
PB HLTH 223E	Capstone Seminar in Health Policy and Management	2
XXX	Elective(s)	

<sup>1</sup>PB HLTH 223C and PB HLTH 224A fulfill the same requirement. You may take both, and count one as an elective.

<sup>2</sup>Though the field placement is completed over the summer, you will register for it in the fall of your second year.

**ONE-YEAR MPH CURRICULUM****11-Month MPH Program**

The eleven-month option is available to doctoral-level clinical students or applicants with doctoral-level clinical degrees (such as physicians, dentists or PharmDs). This 42-unit course of study runs from early July through mid May, and includes a practicum completed over the fall and spring semesters. Eleven-month students are exempt from the field placement.

School-wide Requirements (12 units)		Units	Semester
PB HLTH 141	Introduction to Biostatistics	5	Summer
PB HLTH 200K	Environmental Health Sciences Breadth Course	2	Fall
PB HLTH 200L	Health and Social Behavior Breadth Course	2	Spring
PB HLTH 250A	Epidemiologic Methods	3	Summer

HPM Program Required Courses (15 units)		Units	Semester
PB HLTH 200	Health Policy Decision-Making	3	Fall
PB HLTH 223D	Foundations of Health Policy and Management	2	Fall
PB HLTH 223E	Capstone in Health Policy and Management	2	Spring
PB HLTH 226A or PB HLTH 226B	Health Economics A or Health Economics B	2	Fall
PB HLTH 227A	Health Care Finance	3	Spring
PB HLTH 231A	Analytic Methods for Health Policy and Management	3	Spring

**One of the two following courses**

PB HLTH 223C	Strategic Management and the Organization of Health Services	3	Spring
PB HLTH 224A	Health Care Organizations and Management	3	Spring

HPM Practicum	Units	Semester
Additional elective units (variable units)	1-5	Fall/Spring

## ONE-YEAR SAMPLE SCHEDULE

### 11-Month Sample Schedule (42 units)

Summer Semester		Units
PB HLTH 141	Introduction to Biostatistics	5
PB HLTH 250A	Epidemiologic Methods I	3

Fall Semester		Units
PB HLTH 200L	Health and Social Behavior Breadth Course	2
PB HLTH 220	Health Policy Decision-Making	3
PB HLTH 223D	Foundations of Health Policy and Management	2
PB HLTH 226A	Health Economics A or	2
PB HLTH 226B	Health Economics B	2
PB HLTH 299	Practicum	1-5
PB HLTH XXX	Elective(s)	

Spring Semester		Units
PB HLTH 200K	Environmental Health Sciences Breadth Course	2
PB HLTH 223C <sup>1</sup>	Strategic Management and the Organization of Health	3
PB HLTH 224A <sup>1</sup>	Services or Health Care Organizations and Management	3
PB HLTH 223E	Capstone Seminar in Health Policy and Management	2
PB HLTH 227A	Health Care Finance	3
PB HLTH 231A	Analytic Methods for Health Policy and Management	3
PB HLTH XXX	Elective(s)	

### MPP/MPH CONCURRENT DEGREE PROGRAM

Following are the requirements for the concurrent degree program between the Schools of Public Policy and Public Health in Health Policy and Management.

PP 240A & B: Decision Analysis, Modeling, and Quantitative Methods take the place of both PB HLTH 142 Introduction to Probability and Statistics in Biology and Public Health and PB HLTH 231A Analytic Methods for Health Policy and Management. PP 205 Advanced Policy Analysis and PP 299 Independent Study in Preparation for the Master's Essay replace the Capstone Seminar in Health Policy and Management (PB HLTH 223E) and the HPM MPH comprehensive examination.

MPP/MPH concurrent degree students in HPM are required to complete a minimum of **80 units of coursework** over five or six academic semesters and two summers.

Required Public Health Courses		Units	Semester
PB HLTH 200K	Environmental Health Sciences Breadth Course	2	Fall
PB HLTH 200L	Health and Social Behavior Breadth Course	2	Spring
PB HLTH 250A	Epidemiologic Methods	3	Fall
PB HLTH 297 <sup>1</sup>	Public Health Field Placement	3	

Required Health Policy and Management Courses		Units	Semester
PB HLTH 200	Health Policy Decision-Making	3	Fall
PB HLTH 223D	Foundations of Health Policy and Management	2	Fall
PB HLTH 227A	Health Care Finance	3	Spring

**One of the two following courses<sup>2</sup>**

PB HLTH 223C	Strategic Management and the Organization of Health Services	3	Spring
PP 260	Public Leadership and Management	4	Fall

**One of the three following courses**

PB HLTH 226A	Health Economics A	2	Fall
PB HLTH 226B	Health Economics B	2	Fall
PB HLTH 226C	Population Health Economics	3	Spring

**Required Public Policy Courses**

PP 200	Introduction to Policy Analysis ( <i>to be taken first year</i> )
PP 205 and PP 299	Advanced Policy Analysis (Thesis Seminar) and Independent Study in Preparation for the Master's Essay
PP 210A & B	The Economics of Public Policy Analysis ( <i>to be taken first year</i> )
PP 240A & B	Decision Analysis, Modeling, and Quantitative Methods ( <i>to be taken first year</i> )

**At least two of the following courses<sup>2</sup>**

PP 220	Law and Public Policy
PP 250	Political and Agency Management Aspects of Public Policy
PP 260 or PB HLTH 223C	Leadership, Management, and Social Change or Strategic Management and the Organization of Health Services

<sup>1</sup>Though the field placement is completed over the summer, you will register for it in the fall of your third year.

<sup>2</sup>Goldman School of Public Policy recommends that students take all three of the following courses: PP 220, PP 250, and PB HLTH 223C.

### **MBA/MPH CONCURRENT DEGREE PROGRAM**

Following are the course requirements for the 2.5 year concurrent degree program between the Haas School of Business and School of Public Health in Health Policy and Management:

---

**NOTE:** MBA 200S Data & Decision Analysis takes the place of the school-wide requirement for PB HLTH 142 Introduction to Probability and Statistics in Biology and Public Health.

MBA/MPH concurrent degree students in HPM are required to complete a minimum of 80 units of coursework over five academic semesters and two summers. 32 units of which must be Public Health courses and 45 units must be MBA courses. See chart below for minimum unit allocation.

Program	Core Classes	Health Mgmt Core	Electives	Total (min.)
MBA	21	5	19	45
MPH	10	11	11	32
Any other grad	0	0	3	3
<b>Total</b>	<b>31</b>	<b>16</b>	<b>33</b>	<b>80</b>

Required Public Health Courses (10-13 units)		Units	Semester
PB HLTH 200K	Environmental Health Sciences Breadth Course	2	
PB HLTH 200L	Health and Social Behavior Breadth Course	2	
PB HLTH 250A	Epidemiologic Methods I (waiver exam offered, does not accrue units if passed)	3	
PB HLTH 297	Public Health Field Placement	3 or 6	

Required SPH Health Policy and Management Courses (8 units)		Units	Semester
PB HLTH 220	Health Policy Decision-Making	3	
PB HLTH 223C or PB HLTH 224A	Strategic Management and the Organization of Health Services Health Care Organizations and Management	3 3	
PB HLTH 223E	Capstone in Health Policy & Management	2-3	

**One of the following courses (2-3 units)**

PB HLTH 226A	Health Economics A		Fall
PB HLTH 226B	Health Economics B		Fall
PB HLTH 226C	Population Health Economics		Spring
PB HLTH 226D	Global Health Economics		Fall in odd years

MBA Core 21

Required MBA Health Management Core Courses (5 units)		Units	Semester
MBA 297A	Health Care in the 21 <sup>st</sup> Century	3	
MBA XXX	Various MBA elective offerings in health management	at least 2 units	

Additional Elective Units (31 units)	
PB HLTH XXX	No less than 9 elective units
MBA XXX	No less than 19 elective units
Other UCB	3 units (as needed)

### III. Health Policy and Management Capstone

#### **COMPREHENSIVE EXAM**

The comprehensive examination is a School-wide requirement completed in the spring semester of the second year with written and oral components. Students prepare for and complete this requirement in the Capstone Seminar in Health Policy and Management. Projects typically take the form of a policy analysis/evaluation, a strategic plan, or a business plan. For the plans, students are expected to work with a client organization. 🔄

**Areas of Study**

**HEALTH POLICY**

**(PhD)**

# HEALTH POLICY

## I. Health Policy PhD Program

Overview

Mission

Core Competencies

Learning Objectives

## II. Health Policy PhD Curriculum

Curriculum Requirements (All Specialty Fields)

Health Economics

Organizations and Management

Population Health Sciences

## III. Health Policy PhD Examinations

Specialty Field Examination

Research Methods Paper Requirement

Qualifying Examination

## IV. Health Policy PhD Dissertation

Overview

Constituting the Dissertation Committee

Advancement to Candidacy

Dissertation Guidelines

Filing the Dissertation

## I. Health Policy PhD Program

### OVERVIEW

Health policy is a scientific field of inquiry that examines the organization and financing of health systems, services delivery, health outcomes, and the management of population health. It involves investigation of all service sectors that affect health, not just the medical care system, and its purview is global. Health policy has been developing for several decades. The Berkeley PhD Program in Health Policy was first established at UC Berkeley in 1988 as “Health Services and Policy Analysis,” and its first Director was Richard Scheffler, PhD

The PhD program is distinguished by its interdisciplinary application of the social and behavioral science disciplines to real world health issues. Students have access to all disciplines and professional schools at UC Berkeley, in addition to faculty and research programs at UC San Francisco. The PhD Program is a full-time program geared for careers in academia and research. Students typically complete the degree in 4-5 years. The program is administratively located in the School of Public Health. The Doctor of Philosophy degree is granted by the Graduate Division of the University of California, Berkeley.

Students who graduate with a PhD are well prepared to assume academic careers in research and teaching. Many of our graduates move directly to positions in academia, government, or research organizations, while others get post-doctorate fellowships to continue specific training in their area of interest and research.

### MISSION

The mission of the Berkeley PhD Program in Health Policy is to prepare students for careers in research, teaching, and public service in university, governmental, and public policy settings. It is expected that through their research, teaching, and provision of expert advice, graduates of the PhD program will play a lead scientific role in addressing the many challenges facing health care and public health systems in the United States and other countries around the world.

### CORE COMPETENCIES

#### Foundational knowledge

Competency	Course 1	Course 2	Course 3
Acquire knowledge of the context of health and health care systems, institutions, actors, and environment	PP210A/B Economics of Public Policy Analysis	237A/B Theories and Methods in Health Policy and Health Services Research	

#### Theoretical knowledge

Competency	Course 1	Course 2	Course 3
Apply or develop theoretical and conceptual models relevant to health policy and services research.	PP210A/B Economics of Public Policy Analysis	237A/B Theories and Methods in Health Policy and Health Services Research	

**Relevant and important HSR question development**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
Pose relevant and important research questions, evaluate them, and formulate solutions to health problems, practice, and policy	Research Methods Paper Requirement	237A/B Theories and Methods in Health Policy and Health Services Research	

**Conceptual models and operational methods**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
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	Research Methods Paper Requirement	237A/B Theories and Methods in Health Policy and Health Services Research	Dissertation Requirement

**Study designs**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
Describe the strengths and weaknesses of study designs to appropriately address health policy and services research questions	Research Methods Paper Requirement	PB HLTH 250B Epidemiology	237A/B Theories and Methods in Health Policy and Health Services Research

**Data collection and management methods**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
Sample and collect primary health and health care data and/or assemble and manage existing data from public and private sources	Research Methods Paper Requirement	Dissertation requirement	

**Research conduct management**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
Execute and document procedures that ensure the reproducibility of the science, the responsible use of resources, and the ethical treatment of research subjects	Required Citi Training on Human Subjects Protection	Dissertation requirement	

**Data analysis**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
Demonstrate proficiency in the appropriate application of analytical techniques to evaluate health policy and services	Research Methods Paper Requirement		

**Professional development**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
Work collaboratively in teams within disciplines, across disciplines, and/or with stakeholders	PB HLTH 299.51 Dissertation Seminar		

**Communication**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
Effectively communicate the process, findings, and implications of health policy and services research through multiple modalities to scientific peers and other stakeholders	PB HLTH 299.51 Dissertation Seminar		

**Knowledge transfer**

<b>Competency</b>	<b>Course 1</b>	<b>Course 2</b>	<b>Course 3</b>
Knowledge translation to policy and practice	PB HLTH 299.51 Dissertation Seminar		

**LEARNING OBJECTIVES**

Graduates of the PhD Program in Health Policy will be able to achieve and demonstrate expertise in the following major academic outcomes:

- » Develop domain expertise in core works in health policy and the selected specialty field.
- » Understand central social science theoretical frameworks and debates shaping health policy.
- » Demonstrate substantive knowledge of specialty field sufficient to design and teach graduate level courses in that field.
- » Demonstrate ability to conduct rigorous quantitative research.
- » Plan and conduct independent research using advanced research methods.
- » Master academic and grant writing, conference presentation, IRB procedures, and ethics in research.
- » Foster cohesion and intellectual exchange among students and faculty across the university to enhance interdisciplinary research and training.

**II. Health Policy PhD Curriculum****CURRICULUM REQUIREMENTS (ALL SPECIALTY FIELDS)****Prerequisite Courses**

Entering students should have foundational knowledge in microeconomics, epidemiology, and statistics. Students without prior Master's-level coursework in these areas will need to remedy deficiencies in their first year.

### Grading Standards

Students must receive a grade of B- or higher to satisfy course work requirements, including core and specialty field courses.

### Unit Requirements

PhD students are required to complete a total of 60 units composed of courses, doctoral seminars, and independent studies. All students, with the exception of students in the Health Economics specialty field, should aim to complete coursework by the end of the second year.

Course descriptions for most of the courses can be found in the campus online catalog at [guide.berkeley.edu](http://guide.berkeley.edu). Please check the online schedule at [schedule.berkeley.edu](http://schedule.berkeley.edu) each semester for course availability.

### Core Classes

Students must take PB HLTH 237A, B Theories and Methods in Health Policy and Health Services Research\*, 5 specialty field courses, 3 research methods courses, and 3 courses in other specialty fields (aside from the student's designated specialty field)\*\*. Requirements for the interdisciplinary social science requirement are detailed within the course guidance for each specialty field. Students must receive a grade of B or higher to satisfy all course requirements, including core, specialty, and methods courses.

*\*Students entering before Fall 2017 take 4 semesters of the 1st/2nd year seminar.*

*\*\* Current students are allowed to take core and elective non-specialty field courses from any of the other specialty fields in the PhD program.*

### Specialty Field

The Berkeley PhD Program in Health Policy has three specialty fields: Health Economics, Organizations and Management, and Population Health Sciences. Each specialty field has two required core courses and a minimum of three elective courses, as well as a specialty field exam.

### Interdisciplinary Requirement

Students are required to take three courses from fields *outside* of their selected specialty field. The three courses can include any of the three specialty fields of the PhD program, in addition to the politics and policy courses listed below. Students without prior microeconomics training are required to take a year-long microeconomics sequence (PP210A/B: The Economics of Public Policy Analysis) to satisfy one of the three interdisciplinary course requirements.

The following Politics/Policy courses can count as satisfying the interdisciplinary requirement for all specialty fields:

PB HLTH 230	Advanced Health Politics and Policy
PP 290	Special Topics in Public Policy (varies)
PS 200	Major Themes in Comparative Analysis
PS 201A	Comparative Analysis of Industrial Democracies
PS 203	Urban and Subnational Politics in Developing Countries
PS 206	Comparative Party Systems

PS 220A	Theories of International Relations
PS 247G	The Comparative Politics of the Welfare State
PS 259	Selected Topics in Public Law
PS 261	Political BehaviorPS
PS 262	Voting Behavior and Public Opinion
PS 263	Mass Politics in Modern Democracies
PS 271	American Government and Political Field Seminar
PS 273	Urban Politics
PS 274	American Political Development
PS 279	Race, Immigration and Identity in US Politics
Law 220F	Food Law and Policy
Law 248	Health Law
Law 263	International Human Rights Law: Theory and Practice
SOC 280C	Political Sociology

### Methods Requirement

Students must submit a paper demonstrating their competency in methods prior to the scheduling of their oral qualifying examinations. Professor Timothy Brown will review and approve the methods paper. Please allow at least 4-6 weeks for review, revision, and approval of this paper. The approval of this paper is required in order to submit the application for the Qualifying Exam to Graduate Division. The Degrees Office then requests at least 4 weeks for processing of this application before the QE date.

### PhD Dissertation Seminar

After passing the specialty field exam, students are required to attend the Dissertation Seminar PB HLTH 299 and present their research analyses in the seminar or an equivalent seminar, during each semester until graduation.

### Health Services Research Colloquium

The HSR colloquium is designed for PhD students in Health Policy. The seminar meets alternate Tuesdays from 12:40-2 p.m. in 714C University Hall. Students are required to enroll in the colloquium for one unit (S/U) in each of their first four semesters of the program, and upper year students are also expected to attend. In addition, students are strongly encouraged to regularly attend research colloquiums in their specialty field departments. Students can enroll for additional semesters or units, as needed, to fulfill minimum required units for GSR/GSI appointments.

Students will become familiar with the professional practice of presenting current research among peers and of critiquing peer research in a workshop setting. The HSR colloquium will meet roughly every other week during the semester. Speakers will generally be faculty and other local researchers presenting their current health policy-related research. Colloquiums will be open to the public, and vigorous intellectual exchange is encouraged throughout the presentation.

Colloquium papers will sometimes be distributed in advance. Students are expected to read the paper in advance, or if no paper is distributed, to read other relevant background research by the author or other researchers working on the same topic.

Attendance at six HSR colloquiums is required to satisfactorily earn each unit of credit. If students are unable to attend six HSR colloquiums, then they may choose to instead attend alternative research colloquiums; however, those alternative colloquiums should similarly be structured to encourage active discussion of HSR-relevant research presentations.

Students enrolling for more than 1 unit should attend commensurately more colloquiums elsewhere. At the end of each semester, students will be required to email the instructor a list of the colloquiums attended for credit.

## HEALTH ECONOMICS

The Health Economics specialty field draws on economics, epidemiology, demography, and statistics to understand the causal relationship between different aspects of health and the health care sector. With an emphasis on quantifying relationships, health economics covers a broad range of study areas, including health production, demand & supply of health services, healthcare financing, behavioral responses to institutional or policy incentives, policy evaluations, and other efficiency and equity issues surrounding health. **Faculty Lead: Will Dow PhD**

### Core Requirements

PB HLTH 237A, B Theories and Methods in Health Policy and Health Services Research  
 PB HLTH 237D Health Policy Dissertation Seminar (Year 3+)  
 PB HLTH 293C Health Services Research Colloquium (Years 1-2)

### Interdisciplinary Requirement

Three courses in one or more of the following areas:

1. Organizations and Management,
2. Population Health Sciences, and/or
3. Politics and Policy.

### Specialty Field Requirements

Health Economics students must take ECON 201A and a minimum of four specialty field courses.

**Specialty Field Core (1 course):** ECON 201A\*\* Economic Theory

\*\*Pre-requisite: Economics 204 (Summer)

Math 104: Introduction to Analysis (Fall, Year 1) is recommended for students entering without exposure to real analysis. Econ 201A also requires a background in linear algebra and differential equations, so students entering without this background should also take Math 54 (Fall, Year 1).

### Specialty Field Electives (4 courses)

ECON 201B Economic Theory  
 ECON 219A Foundations of Psychology and Economics  
 ECON 219B Applications of Psychology and Economics  
 ECON 220A,B Industrial Organization  
 ECON 230A,B Public Economics  
 ECON 250A,B,C Labor Economics

ECON 270A,B,C	Development Economics
ECON 275A	Economic Demography
PP 251	Microeconomic Organization & Policy Analysis
PP 259	Cost-Benefit Analysis

### Research Methods (3 courses)

ARE 212***	Econometrics: Multiple Equation Estimation
ARE 213	Applied Econometrics
ECON 244	Applied Econometrics
PB HLTH 252D	Intro to Causal Inference
PB HLTH 245	Intro to Multivariate Public Health Statistics
PB HLTH C242C	Longitudinal Data Analysis
PB HLTH 241	Statistical Analysis of Categorical Data
PB HLTH 250B	Epidemiologic Methods II
PS 236	Statistics of Causal Inference in the Social Sciences

\*\*\*ARE 210 has been found to be a useful prerequisite for ARE 212, but ARE 210 does not count toward the methods requirement.

### Specialty Field Exam

Health Economics students are generally accountable for the content of the *Handbook of Health Economics* (edited by Anthony J. Culyer and Joseph P. Newhouse) for the specialty field exam, with specific sections of emphasis determined each year by the examining committee depending on the students' sub-fields. The exam requirements consist of core material required of all students and one of five areas chosen by each student. In order to prepare, students are required to take 2 PhD-level courses in the economics department in one of these fields: Behavioral economics (Econ 219A/B), Industrial organization (Econ 220A/B), Public economics (Econ 230A/B), Labor economics (Econ 250A/B/C), or Development/demography (Econ 270A/B/C, Econ 275). The exam will be based on material covered in these classes, but will be in the context of health issues.

## ORGANIZATIONS AND MANAGEMENT

The Organizations and Management specialty field trains scholars of organizational behavior and political behavior in health. Theories and methods in organizational sociology, political science, and social psychology are central to the study of health organizations. Specialty field courses in macro-organizational theory, micro-organizational theory, and organizational analysis of the health sector are required. The specialty field emphasizes the management of health care and public health organizations and systems, the implementation and dissemination of policies and practices within and across organizations, and the role of policy-making institutions as platforms for the creation and modification of health policies. **Faculty Lead: Hector Rodriguez PhD**

### Core Requirements:

PB HLTH 237A,B	Theories and Methods in Health Policy and Health Services Research
PB HLTH 237D	Health Policy Dissertation Seminar (Year 3+)
PB HLTH 237C	Health Services Research Colloquium (all years)

**Interdisciplinary Requirement**

Two core and/or specialty field courses in one or more of the following areas:

1. Politics and Policy,
2. Population Health Sciences, and/or
3. Health Economics.

If a masters-level microeconomics course has been completed in the past, a third course from one of these specialty fields should be taken. If one has not been completed, the student should take: PP 210A,B The Economics of Public Policy Analysis (series counts as one course).

**Specialty Field Requirements**

Students in the Organizations and Management specialty field are expected to take 5 courses: 1 core course and 4 specialty field elective courses, with at least one specialty field elective course in each of the micro-organizational and macro-organizational categories.

**Specialty Field Core (1 course):** PB HLTH 224D Organizational Analysis of the Health Sector

**Specialty Field Electives (Select 4 courses, with a minimum of 1 micro and 1 macro course)**

**Micro-Organizational**

PhD BA 259A	Seminar in Micro-Organizational Behavior
PhD BA 259C	Research in Industrial Relations and Labor
PhD BA 259S	Seminar in Organizational Behavior and Industrial Relations
PhD BA 297T	Research in Micro-Organizational Behavior
Psy 290J	Social Psychology (various seminars)

**Macro-Organizational**

PB HLTH 224C	Advanced Health Organizations*
PhD BA 259B	Seminar in Macro-Organizational Behavior
PhD BA 259D	Seminar in Organizational Theory
PhD BA 279C	Corporate Strategy and Technology
PS 280C	Organizational Analysis: Structure, Control, & Cooperation
PS 289	Institutions and Institutionalism
SOC 205E	Advanced Study – Industrial Sociology
SOC 280D	Organizations
SOC 280R	Advanced Study – Professions

\*required of students beginning the 2016-17 academic year or earlier

**Public Organizations and Policy**

PS 209A	Comparative Political Economy
PS 252	Legal Theory and Institutions
PS 261	Political Behavior
PS 279	Federalist Territoriality in American Politics
PS 289	Research Topics in Public Organization
PS 292	Advanced Study – Public Organization
PhD BA 279A	Institutions, Interest Groups, and Public Policy

**Research Methods (select three):**

EDU 274B	Measurement in Education and Social Sciences
EDU 274C	Research Seminar in Measurement
EDU 274D	Multidimensional Measurement
EDU 275B	Data Analysis in Educational Research II
EDU 275G	Hierarchical and Longitudinal Modeling
PB HLTH C242C	Longitudinal Data Analysis
PB HLTH 219D	Introduction to Survey Methods
PB HLTH 245	Intro to Multivariate Public Health Statistics
PB HLTH 250B	Epidemiologic Methods II
PB HLTH 252A	Applied Sampling
PhD BA 297B	Research and Theory in Business: Behavior Science
PS 235	Introduction to Research Design
PS 243A	Qualitative and Multi-Methods Research
PS C236A	Statistics of Causal Inference in Social Sciences
PSY206	Structural Equation Modeling

**POPULATION HEALTH SCIENCES**

The Population Health Sciences specialty field trains students for research careers in the social, behavioral, and economic determinants of health and the study of interventions, policies, and practices that impact the health of populations and vulnerable communities. The specialty field emphasizes addressing the social and behavioral determinants of health through quantitative and mixed methods research informed by theories and methods in economics, psychology, demography, and social epidemiology. Training in innovative methodologies for establishing causal relationships in quasi-experimental research is a cornerstone of the Population Health Sciences specialty field. **Faculty Lead: Lia Fernald PhD**

**Core Requirements**

- PB HLTH 237A,B Theories and Methods in Health Policy and Health Services Research
- PB HLTH 237D Health Policy Dissertation Seminar (Year 3+)
- PB HLTH 237C Health Services Research Colloquium (all years)

**Interdisciplinary Requirement**

Two courses in one or more of the following areas:

1. Organizations and Management,
2. Politics and Policy, and/or
3. Health Economics
4. If a masters-level microeconomics course has been completed in the past, a third course from one of these specialty fields should be taken. If one has not been completed, the student should take: PP 210A,B The Economics of Public Policy Analysis (series counts as one course).

**Specialty Field Requirements**

Students in the Population Health Sciences specialty field are required to take the core course and four elective specialty field courses. Students should review the most recent Population Health Sciences specialty field exam reading list early in their course planning process.

**Specialty Field Core Course (1 course):** PB HLTH 226C Population Health Economics

**Specialty Field Electives (4 courses)**

DEMOG 126	Social Consequences of Population Dynamics
DEMOG 210	Demographic Methods
DEMOG 230	Human Mortality
DEMOG 260	Special Topics in Demography Seminar (varies)
DEMOG C275A	Economic Demography
PB HLTH 216A	Biological Embedding of Social Experiences
PSY 290K	Multidisciplinary Perspectives on the Study of Behavior Change
PB HLTH 255C	Mental Health & Psychopathology
PB HLTH 201F	Community-based Research & Intervention
PB HLTH 206B	Food and Nutrition Policies and Programs
PB HLTH 206C	Nutrition Epidemiology
PB HLTH 206D	Food and Nutrition Policies and Programs in Developing Countries
PB HLTH 210B	Adolescent Health
PB HLTH 217C	Aging & Public Health
PB HLTH 253D	Behavior & Policy Science in HIV Treatment and Prevention
PB HLTH 255A	Social Epidemiology
PB HLTH 255C	Mental Health & Psychopathology
CE 264	Behavioral Modeling for Engin, Planning, & Policy Analysis

**Research Methods (3 courses):**

ARE 212*	Econometrics: Multiple Equation Estimation
ARE 213*	Applied Econometrics
PB HLTH 241	Statistical Analysis of Categorical Data
PB HLTH C242C	Longitudinal Data Analysis
PB HLTH 245	Intro to Multivariate Public Health Statistics
PB HLTH 250B**	Epidemiologic Methods II
PB HLTH 252D	Intro to Causal Inference
PB HLTH 255D	Methods in Social Epidemiology
EDU 274B	Measurement in Education and Social Sciences
EDU 274C	Research Seminar in Measurement
EDU 274D	Multidimensional Measurement
EDU 275B	Data Analysis in Educational Research II
EDU 275G	Hierarchical and Longitudinal Modeling
PB HLTH 252A	Applied Sampling
PhD BA 297B	Research and Theory in Business: Behavior Science
PS 235	Introduction to Research Design
PS C236A	Statistics of Causal Inference in Social Science
PSY206	Structural Equation Modeling

\* ARE 210 has been found to be a useful prerequisite for ARE 212, but ARE 210 does not count toward the methods requirement. Both ARE 212 and 213 are recommended for students of population health economics.

\*\* Required of students who have not completed an advanced level epidemiologic methods course.

### III. Health Policy PhD Examinations

#### **SPECIALTY FIELD EXAMINATION**

Students must pass a comprehensive written examination in their specialty field before they proceed to their oral examination and advance to candidacy. At the end of the second year and with all specialty field course requirements fulfilled, students will take their specialty field exam.

The examination will be designed to test the core knowledge in the student's chosen field of economics, organizations, politics, or population health. A three-member faculty committee for each student will evaluate exam performance. A non-group faculty member can serve on the committee if the faculty head of the student's specialty field approves. The examination is four hours in length and in-class. The exam is graded high pass, pass, low pass, or fail. Students who fail the exam may be given the opportunity to retake the exam (or portions of the exam) within three months. Students are required to leave the program after two failed attempts.

The specialty field examination in health economics, organizations and management, or population health is completed after the student has completed all specialty field courses.

Students normally sit for the exam at the completion of the second year of the program. All students within the same specialty field area take the same examination at the same time. The examination is written, four hours in length, in class, and generally requires the student to spend a minimum of one hour on each of three questions.

#### **Criteria for Examination:**

The specialty field examination should emphasize the students' understanding of the major concepts, theories, and findings in their specialty field, and students must be able to apply this knowledge to the health care field. Before sitting for the exam, students should have a minimum of three courses in their specialty field, beyond the two required for the core.

The criteria used to evaluate the students' performance include:

- » A sound understanding of the core knowledge of the field;
- » Demonstrated ability to apply the specialty field to the health field;
- » Demonstrate the potential to teach graduate level classes in the specialty field focused on health.

#### **Specialty Field Exam Procedures and Evaluation:**

The Program Manager will administer the examination on a date agreed upon by students and the specialty field faculty lead. The exam questions will be sent directly to the Manager two weeks prior to the exam date. After the exam, the Manager will send evaluation forms and the completed exams to the exam graders. Each question should have a minimum of two graders. Grading is high pass, pass, low pass, or fail for each question. A grade for the entire examination is determined by consensus among faculty graders and transmitted from the specialty field faculty lead to the Program Director. The Program Manager will provide results to the student in writing.

Students can take the specialty field examination only twice. Students who fail the exam may be given the opportunity to take the exam again within three months. Two failures will require that the student be asked to leave the program.

#### **RESEARCH METHODS PAPER REQUIREMENT**

Before the end of the third year of the program, each student must demonstrate the ability to use research methods with real data by submitting to the methods adviser a paper that uses data, as proof of competency. This could be a paper written for a class, a paper that comes from a research

project with a faculty member in which the student held a research assistant position or anything else which is acceptable to the adviser. There are no bounds set on types of methods or data used. For specific guidelines regarding the methods paper, see the next section.

The methods paper must be approved prior to student scheduling of their qualifying examination. The methods paper should be submitted to Professor Timothy Brown, the Health Policy research methods lead faculty member. This will allow ample time for the paper to be reviewed in the event that revisions are recommended. The faculty adviser will sign a form after the paper has been successfully reviewed and approved. This approval is required for all students who are preparing to take their Qualifying Exam. The final version of the methods paper must be given to the PhD Program Manager for filing. It will be included with the documents reviewed by the student's Qualifying Exam committee.

Each PhD student must demonstrate the ability to use appropriate doctoral-level research methods by writing an empirical research paper prior to their oral qualifying examination. The final paper must be approved by the program's research methods lead, Professor Timothy Brown. This requirement must be passed before the end of the third year of the program. The research methods paper must be approved before the student can take the oral qualifying examination. Many students use their methods paper as the foundation for their dissertation proposal.

There is considerable flexibility in the research methods paper requirement, depending on each student's area of interest and expertise. The paper could be an independent project exploring a potential thesis topic, could build on a class term paper, could be part of a research project conducted with a faculty member or as part of a job, or anything else acceptable to the adviser and methods coordinator. There are no bounds set on types of methods or data used, however it is recommended that the student consult the adviser and methods coordinator early in the process.

The key expectations are:

- » Use actual empirical data to explore an interesting question in the field of health policy.
- » Use methods appropriate for a researcher trained at the PhD level.
- » Write a paper of potentially publishable quality.

### **Typical Structure:**

The following is an outline of the structure of a typical methods paper, although individual papers may vary considerably from this structure. Text is 10-25 double-spaced pages, 1" margins, 10- 12 point font.

#### **1. Title page**

Title, name, date.

Short abstract (structured or paragraph).

In a footnote acknowledge anyone who has made important contributions to the paper

#### **2. Introduction(1-2 pages)**

Explain the broad question and motivate why it is interesting.

Outline the hypotheses that you will be testing, and discuss how they will inform the broad question.

Relate your paper to any important previous studies that you have built on (complete literature review not required).

**3. Conceptual framework**

Provide a conceptual framework for considering your question, and state the exact hypotheses to be tests.

**4. Data**

State the exact source of data. Describe the data's population and sampling design, particularly complex survey features such as clustering and weights.

If using a sub-sample of the data, describe the exact selection rules so that another researcher could replicate your sample in the future.

Define each dependent and independent variable, and discuss how it is measured and transformed for analysis.

Provide a table of summary statistics, and highlight important features of it in the text. Discuss missing data issues. If relevant, discuss how they will be addressed and provide a table comparing included and excluded observations (comparing samples with appropriate statistical tests)

**5. Methods**

Describe the statistical methods that you will be using.

If using advanced estimation techniques (beyond ordinary regression), motivate in words your alternative estimation approach, and state the strengths and limitations of each estimator. Clearly present equations illustrating the models that you will estimate (independent variables, error structure with appropriate subscripts if appropriate).

Discuss each test that you will use to choose between models (there is no required number of tests; use the tests that are appropriate to your application).

**6. Results**

Provide tables of results for each key model that you estimate (not just the preferred model), and in the text highlight the main results.

Interpret the results of the specification tests, and argue which model is preferred and why.

**7. Limitations**

Discuss each of the important limitations of your analysis, and how they might affect your results. You are not expected to have solved all potential problems, but you must thoughtfully discuss them.

**8. Discussion**

Briefly summarize your main findings, and relate them to the hypotheses and broad questions in the introduction.

**9. References****10. Tables and Figures**

All tables (followed by figures) should be attached to the end of the paper, not included in the middle of the text.

Consult journals for sample formats (appropriate labels, avoid vertical lines in tables, etc.).

**11. Appendix**

Include a concise program file (i.e., .do or .sas) used to generate your results. Document it with comments so that a year from now you would be able to follow it.

If relevant, include IRB approval letter in the appendix.

**12. Response to comments**

If this is a revised submission of the paper, include a point-by-point response to specific comments raised by the adviser or methods coordinator.

## QUALIFYING EXAMINATION

Students must pass a 2-3 hour oral qualifying examination (QE) in order to advance to candidacy. All program requirements (the specialty field exam, all required coursework, and the methods paper) must be completed before the exam can be scheduled. Students should consult with the Health Policy Program Manager to ensure that the required forms are filled out and submitted for approval and signature.

Completed forms should be submitted to the Program Director along with the Graduate Division application for the Qualifying Exam for approval and signature. The Graduate Division application takes at least 4 weeks to be approved in the Degrees office. The Graduate Division requires that students submit applications with a check for \$90. In addition, students must complete the CITI Course in the Protection of Human Research Subjects and include a copy of the certificate of completion with the Plan B form.

A four-member qualifying examination committee will examine the student's knowledge in health policy, their specialty field, and the proposed area of dissertation research. The QE committee should include "inside" members from the Health Policy group faculty, and one "outside" member who must be a senate faculty member and not a member of the Health Policy Group. The QE chair cannot also serve as the student's dissertation chair.

### DISSERTATION PROSPECTUS:

The student must distribute a written prospectus of the proposed dissertation research of no more than twenty-five pages at least three weeks prior to the QE date. The main purpose of the prospectus is to clearly and convincingly demonstrate the significance of the contribution your research will make to health policy and the student's specialty field. Significance is measured by the "publishability" of your work in reputable journals in the field. The prospectus focuses on the methodology you have selected and how you apply it in your research.

The prospectus should contain the following elements (the order of presentation is flexible):

#### **1. Literature review**

An in-depth, concise and critical review of the relevant literature. Weakness and important gaps in the literature should be noted.

#### **2. Theoretical or conceptual model**

A fully developed theoretical or conceptual model (e.g., the Theory of Resource Dependence, a Theory of Nonprofit Hospitals, Asset/Pricing models). The logical connection between the conceptual model and the research questions or hypothesis should be detailed.

#### **3. Statement of research questions or hypotheses**

A statement of research question(s) and/or the hypothesis(es) to be tested.

#### **4. Data, Methods and Analyses**

Identify the needed databases and assess their appropriateness and availability of data or your data collection strategy. Sample questionnaires or questions or documentation of existing data files should be included in appendix materials. Also include a brief description and justification of the statistical and/or econometric models and/or qualitative methods to be used.

**5. Expected results**

Prepare a detailed and carefully worded statement of the expected results of your research, including the significant contributions it will make, noting the journals where the research might be published.

**6. Health policy implications**

The health policy significance of your research and its implications for improving the organization, financing and/or delivery of health care should be clearly noted.

The prospectus should be no longer than 25 double spaced, typed pages (not including references or data appendices). The two key criteria used in grading the oral exam are:

1. the contributions it will make to the literature in the field and
2. the appropriateness of the theoretical or methodological approaches.

Grading of the Qualifying Examination is either pass or fail; a student can retake the exam only once. A second failure, however, leads to being dismissed from the program. The Program Director must sign the Graduate Division form elevating the student to candidacy. The candidate is responsible for following all Graduate Division rules and requirements for advancement to candidacy including the filing of the Application for Candidacy for the Degree of Doctor of Philosophy form (Plan B form).

## IV. Health Policy PhD Dissertation

**OVERVIEW**

Writing and filing your doctoral dissertation is one of the final steps leading to the award of your graduate degree. Your manuscript is a scholarly presentation of the results of the research you conducted at the School of Public Health. UC Berkeley upholds the tradition that you have an obligation to make your research available to other scholars. This is done when you submit your dissertation for publishing through the [ProQuest online administration system](#) and the Graduate Division forwards your manuscript to the University Library. Your dissertation is subsequently [published online](#) in the UC-system's scholarship repository ([eScholarship](#)) and made available within ProQuest/UMI after your doctoral degree is officially conferred by the Academic Senate.

Your Dissertation Committee supervises the intellectual content of your manuscript and your Committee Chair will guide you on the arrangement within the text and reference sections of your manuscript. For this reason, students should be selective in constituting the Dissertation Committee and Dissertation Chair.

**CONSTITUTING THE DISSERTATION COMMITTEE**

A three or four-person dissertation committee is selected by the student and appointed after the student has been successfully advanced to candidacy by the Graduate Division. The Program Manager must be notified of the membership of the committee.

Two of the committee members, including the chair, must be a Health Policy Faculty Group member, and the outside member must be senate faculty who is not a member of the Health Policy Group; normally the outside member of the QE committee serves in this capacity. Any change to this committee requires a form to be filed with Graduate Division and requires 2-3 weeks to be approved.

Dissertation research must be relevant to health policy and the student's specialty field (see *Dissertation Prospectus Guidelines*). For completion of the PhD requirements, students must provide copies of their dissertations that follow Graduate School guidelines. An additional bound copy must be filed with the PhD program office.

### **Advancement to Candidacy**

To advance to candidacy, a student must submit the *Application for Advancement to Candidacy* form to the Health Policy PhD Program Manager in the Student Services Office. This form should not be submitted until the final dissertation prospectus and the timeline for completion of the dissertation have been approved/signed off by the dissertation chair and the dissertation committee members. The application for candidacy must include a check in the amount of \$90, made payable to the UC Regents. The advancement form should be filed no later than the end of the semester following the one in which the student passed the Qualifying Examination. Examinations more than five years old are not accepted as representing current knowledge.

When doctoral students have advanced to candidacy, the Graduate Division emails students a letter that includes information on writing a dissertation, finding financial support for research and writing, and using campus resources during this new phase of doctoral study (Graduate Degrees Office, 642-7330). Additional information regarding [academic skill building workshops](#) are available on the [Graduate Division website](#).

Doctoral students who have advanced to candidacy for the doctorate receive a 100 percent reduction in the annual nonresident tuition for a maximum of three calendar years (calculated from the semester after which they advanced), whether registered or not. Any nonresident student who enrolls after the three-year calendar period will be charged the full nonresident tuition rate at that time.

To qualify for this reduction, the application for doctoral advancement must be received in the Graduate Services Degrees Unit by the first day of instruction of the semester for which the reduced tuition is assessed. Students who plan to file the application on the deadline day should be prepared to pay at least 20 percent of their assessed fees by the first fee payment deadline. For the reduced fee to be reflected on the CARS billing statement, however, students should apply for advancement at least 6-8 weeks before the beginning of the semester to allow sufficient processing time.

Each semester after advancement to candidacy, students should register for 12 units of independent research with their dissertation chair. The course number for independent research is Public Health 299. Your dissertation chair must send an email to the Curriculum Planner at [sphcourses@berkeley.edu](mailto:sphcourses@berkeley.edu) in order to request a Course Control Number.

### **Dissertation Guidelines**

Acceptable dissertation projects will be broadly defined to reflect the historic and current interests of UC Berkeley Health Policy PhD students. The dissertation will be an original academic work that is *problem or opportunity focused*. The goal is to identify an important public health problem or opportunity and develop an appropriate solution or strategy.

As such, the results might be targeted at public and/or private policy makers, policy influentials, and/or program managers and corporate decision-makers with specific information to inform, improve, and revise existing policy or initiate new, needed, or especially effective policy.

Examples of dissertation research approaches include but are not limited to: examination of the health status of a group, evaluation or other critical assessment of an intervention or policy being promoted or implemented, analysis of management issues, analysis of health policy, assessment of community assets, transdisciplinary research, problem or opportunity focused theoretical contributions, histories, and methodological contributions.

Should the student and/or the student's Dissertation Committee have any question as to whether the student's research approach is appropriate for the dissertation, the question should be forwarded to the Health Policy PhD Program Chair for his or her opinion. If the approach is found to be an exception, a formal request for exception must be approved by the student's Dissertation Committee and the Health Policy PhD Program Chair.

### **FORMAT OF THE DISSERTATION**

The format of the dissertation will be one of three options: a standard dissertation, the three paper option, or an alternate single dissertation format acceptable to the student's Dissertation Committee.

Option 1. A *standard dissertation* will usually incorporate the following specified content:

- » Statement of the public health problem or opportunity and the resulting research question
- » Critical review of the scientific literature relevant to that problem or opportunity
- » Conceptual framework that includes the relevant social, scientific, economic, political, environmental, human rights, administrative, and/or cultural context
- » Description of the study design or data sources and analytic methods used to answer the research question.
- » Analytic results and their implications for the problem or opportunity under study
- » Recommendations based on the results of the study
- » Strategy for implementing and evaluating the recommendations, taking into consideration the contextual factors identified in the conceptual framework

Option 2. The *three paper option* format will include three articles of publishable quality along with (1) a separate introduction and (2) an integrative conclusions section. The three papers will be written in the format required by peer-reviewed journals identified by the student and approved by their Dissertation Committee. Dissertation Committees may require additional documentation to assess the student's work (e.g., extended methods section). This additional work should be part of the integrating documents and not the individual articles which should be of publishable length and content. Exception may be sought to substitute an alternate product for one of the papers (e.g., DVD, website, or educational pamphlet). The exception process will include approvals by the student's Dissertation Committee and the Health Policy PhD Program Chair.

Option 3. Alternate single dissertation formats (e.g., a book) are acceptable if approved by the student's Dissertation Committee.

There will be no final dissertation defense. Students may be asked to present their dissertation findings in a forum sponsored by the Health Policy PhD Program either in the semester they graduate or within a year after graduating. The presentation is not a requirement for graduation.

## RESOURCES

Resources to assist students with writing a dissertation:

- » Copies of PhD program prospectuses and dissertations are kept on file in the Program Office in 417C University Hall. Current students may borrow copies for reference purposes.
- » Dissertation Writing Partner Online Bulletin Board: [grad.berkeley.edu/academic-progress/dissertation](http://grad.berkeley.edu/academic-progress/dissertation)

The Graduate Division encourages students to bring copy of the dissertation to 318 Sproul Hall for a “pre-filing consult.” It is recommended that this be done this at least a couple of weeks before filing. The staff is happy to review the dissertation title page, abstract, and basic document format and will alert the student of any problems that could result in having the dissertation rejected.

## FILING THE DISSERTATION

Doctoral students are required to complete two surveys before they can file their dissertation. These surveys are available at [grad.berkeley.edu/academic-progress/dissertation](http://grad.berkeley.edu/academic-progress/dissertation) under the “Procedure for filing your dissertation” section, in Step 4. Please take the time to complete the Survey of Earned Doctorates (SED) and the Survey of Doctoral Students’ Opinion before going to 318 Sproul Hall to file.

To file a dissertation students must be registered or on approved filing fee status for the semester in which they file. To be eligible to file a dissertation in the summer, students must enroll in Summer Sessions for a minimum of 3 units and have paid their registration fees prior to filing. Students filing in Summer Sessions will be awarded their degree in December. The current fees for Summer Sessions are accessible on the web at: [summer.berkeley.edu/registration/fees](http://summer.berkeley.edu/registration/fees).

Academic Senate regulations require that all work for a degree must be completed by the last day of the semester in which the degree is conferred. Degrees are conferred in December and in May. The last day to file a dissertation with the Graduate Division is the last day of each semester. The filing deadlines are strictly observed. To obtain the specific dates, please consult the Registrar’s web site ([registrar.berkeley.edu](http://registrar.berkeley.edu)) for the student calendar. It is strongly recommended not to wait until the last day to file.

Once the manuscript is in final form and the committee members have signed the approval page of the dissertation, the student is ready to file. The dissertation should be submitted to Graduate Services: Degrees, 318 Sproul Hall, before the end of the semester in which the degree will be conferred. The Degrees Unit will verify the student’s registration or filing fee status and check all of the submission requirements. For details see the Graduate Division website: [grad.berkeley.edu/policy/](http://grad.berkeley.edu/policy/). 

## **Areas of Study**

# **INFECTIOUS DISEASES & VACCINOLOGY**

**(MPH, PhD)**

# INFECTIOUS DISEASE & VACCINOLOGY

## I. IDV Programs

Introduction

Mission

## II. IDV MPH Requirements

Program Overview

Core Competencies

Curriculum

Two-Year Sample Schedule

Field Study Practice Requirement

Capstone Requirement

## III. IDV PhD Requirements

Program Overview

Core Competencies

Curriculum

Sample Schedule

Teaching Requirements

Lab Rotations

Qualifying Examination

Advancement to Candidacy

Research and Dissertation

## I. IDV Programs

### INTRODUCTION

The study of infectious diseases focuses on the interactions between infectious agents, their hosts, and the environment that may lead to disease in humans. Infectious Diseases and Vaccinology (IDV) is a multidisciplinary program. The curriculum is designed to emphasize the biology and molecular biology of host-pathogen interactions; host immune response to infection associated with protection or pathology; the ecology, evolution, and transmission of infectious agents, methods of laboratory-based surveillance and the epidemiology of infectious diseases.

The Division of Infectious Diseases & Vaccinology offers:

- » The professional two-year MPH degree in Infectious Diseases & Vaccinology; and
- » The five-year academic degree of the Infectious Diseases and Immunity PhD program.

### MISSION

The mission of the Infectious Diseases and Vaccinology Program is to create opportunities for students to gain new and advanced knowledge about infectious disease agents and how they interact with host cells, human populations, and the environment. Students learn how to design and implement independent investigations using interdisciplinary approaches. The goal is to promote public health through better understanding of infectious diseases and human immunology based on interaction of basic and translational research that contributes to the development of new diagnostics, treatment, prevention, and control of human infectious diseases.

## II. IDV MPH Requirements

### PROGRAM OVERVIEW

The Masters in Public Health Degree (MPH) in the area of concentration of Infectious Diseases and Vaccinology (IDV) provides a basic course of study of infectious diseases in the context of public health. IDV is a multidisciplinary program with a curriculum designed to emphasize the biology and molecular biology of host-pathogen interactions; host immune response to infection associated with protection or pathology; the ecology, evolution, and transmission of infectious agents; methods of laboratory-based surveillance and the epidemiology of infectious diseases.

The objectives of this program are: to understand the manifestations, mechanisms, and agents of infectious diseases; conduct laboratory analyses; implement diagnostic and surveillance techniques, biostatistics, and epidemiology; and identify current surveillance agencies and public health problems.

The program is a practice-based, full-time two year professional degree that prepares students to be leaders in public health practice settings nationally and globally. Graduates from this program will qualify for positions in federal, state, and local health departments; community-based organizations; health care organizations; and research institutes.

### CORE COMPETENCIES

Students completing the MPH curriculum with a concentration in Infectious Diseases 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 infectious disease.
- » 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 analyses for the detection and characterization of infectious disease agents.
- » Implement advanced diagnostic and surveillance techniques used in clinical and public health laboratories.
- » 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 surveillance.
- » Critically evaluate biological and experimental designs for infectious disease research.
- » Organize, analyze, and present scientific data in a lucid manner through oral and written communications.

## CURRICULUM

This MPH program provides a basic course of study in public health microbiology and infectious diseases. Persons with a firm background in biology but with no prior experience in infectious diseases, can gain the basic education necessary to pursue careers in the public health, industrial, and clinical fields of infectious diseases. Persons with prior backgrounds in the infectious diseases (i.e. medical technologists, clinical and public health microbiologists, nurses, physicians, etc.) can update and broaden their public health base. Forty-eight (48) graduate units are required for graduation. All Breadth and Division core courses must be taken in letter grades, with a minimal of a B- grade for graduation. Students must maintain an overall grade-point average of at least 3.0 on the basis of all upper division and graduate courses (100- and 200-level, please note 300-level courses will not count for graduation) taken in graduate standing. No more than one third of the classes for graduation can be taken in Satisfactory or Unsatisfactory (S/U) grade. A Satisfactory grade implies work of B minus (B-) quality or better. The time required to complete the MPH degree is two years.

As part of general School of Public Health Breadth requirements, the following courses or accepted substitutes must be taken, or an exemption examination passed. More advanced level substitutes are recommended when possible.

### MPH Breadth Requirement

PB HLTH 200J, K, & L	Public Health Core Breadth Course (PB HLTH 200J- 2 units, 200L-2 units, (4 units total) (Fall 2017) (PB HLTH 200K 2 units) (Sp 2018)
PB HLTH 142	Probability and Statistics in Public Health and Biology (4 units) (Fall)
PB HLTH 250A	Epidemiologic Methods (3 units) (Summer) (Fall)
PB HLTH 297*	Public Health Field Study (3 units)

\*Complete the Field Placement in Summer 2018 and register for the class in Fall 2017 as S/SU grade for 3 units.

MPH students are required to attain a B- or better in Breadth Course Requirements (PB HLTH 250A Epidemiology; PB HLTH 142 Biostatistics; PB HLTH 200J Health Policy & Management; PB HLTH 200K Environmental Health; PB HLTH 200L Health and Social Behavior). This rule also applies to alternative courses. Students attaining less than a B- will be required to retake the course in order to receive an MPH degree. Students must also meet the “Good Academic Standing Rule” (i.e. student must maintain overall GPA of a B, which is a 3.0) to participate in the PB HLTH 297 Field Study and to graduate.

Special curricular requirements for the IDV MPH Program are as follows:

### **IDV Core Requirement**

---

PB HLTH 260A & PB HLTH 260B	Must be taken in the first year.
PB HLTH 264	Must be taken in the fall of the 2nd year.
PB HLTH 260A	Principles of Infectious Disease, Part I (4 units) (F)
PB HLTH 260B	Principles of Infectious Disease, Part II (4 units) (Sp)
PB HLTH 264	Current Issues in Infectious Diseases (2 units) (F, 2nd year IDV MPH students only)
PB HLTH 263	Public Health Immunology (3 units) (F)

### **Advanced Courses**

At least two advanced courses are required for all MPH students for graduation. Courses offered in alternate years are in **bold**.

---

<b>PB HLTH 236</b>	U.S. Food and Drug Administration, Drug Development, Public Health, and Health Policy (Spring)
<b>PB HLTH 260E</b>	Molecular Epidemiology of Infectious Diseases (2 units) (Fall 2018)
<b>PB HLTH 260F</b>	Infectious Disease Research in Developing Countries (2 units) (Spring 2019)
PB HLTH 262	Molecular Basis of Bacterial Pathogenesis (3 units) (Spring)
<b>PB HLTH 265</b>	Molecular Parasitology (3 units) (Fall 2017)
<b>PB HLTH 266A</b>	Food-borne Diseases (2 units) (Fall 2018)
PB HLTH 266B	Zoonotic Diseases (2 units) (Spring)
<b>PB HLTH 275</b>	Current Topics in Vaccinology (2 units) (Spring 2018)

### **IDV Division Seminars**

All IDV MPH students are required to register for PB HLTH 266C: Hospital Associated Infections (counts as IDV Division Seminar). Substitution by other School of Public Health seminars related to Infectious Diseases may be acceptable as IDV Division Seminar, please contact IDV Division Manager for questions. Please note it is established that PB HLTH 295 Infectious Diseases Modeling Seminar I or II by Professor John Marshall is acceptable to count as the IDV Division Seminar.

IDI PhD students should register for and participate in PB HLTH 293 section 3: IDI Monday Doctoral Seminar (1 unit) and PB HLTH 293 section 4: IDI Wednesday Doctoral Seminar (for pre-QE IDI PhD students, others are welcome).

**TWO-YEAR SAMPLE SCHEDULE****First Year Program**

Students must register for a minimum of 12 units each semester.

<b>Fall Semester</b>		<b>Units</b>
PB HLTH 260A*	Principles of Infectious Disease Part I	4
PB HLTH 250A	Epidemiologic Methods	3
PB HLTH 200J & L*	Public Health Core Breadth Course	4
PB HLTH 142	Intro. Probability and Statistics	4
or PB HLTH 263	or Public Health Immunology	3
<b>Spring Semester</b>		<b>Units</b>
PB HLTH 260B	Principles of Infectious Disease, Part II	4
PB HLTH 257	Outbreak Investigation	2
PB HLTH 200K	Public Health Core Breadth Course	2
PB HLTH 241	Statistical Analysis of Categorical Data	2
	Required IDV Advanced Courses	2-4
PB HLTH 297*	Public Health Practice – Field Study Placement (Summer)	

**Second Year Program**

<b>Fall Semester</b>		<b>Units</b>
PB HLTH 264 *	Current issues in Infectious Diseases	2
PB HLTH 266C	Hospital Associated Infections (IDV Div Seminar)	2
PB HLTH 253B	Epidemiology and Control of Infectious Diseases	3
PB HLTH 2xx	Elective(s)	7
PB HLTH 297*	Public Health Practice – Field Study (work done in the summer, register for course in the following fall semester to receive credits)	3
<b>Spring Semester</b>		<b>Units</b>
PB HLTH 2xx	Elective(s)	8
PB HLTH 296	Register for Independent Study with your assigned faculty mentor; work on Comprehensive Exam	2
PB HLTH XXX	Other Elective Courses	2-3
	Required Advanced Course	2-6

\* Required course that must be taken during the semester where indicated on this document. PB HLTH 142 can be taken in the first year or second year, only one semester is needed.

Additional courses offered by the School of Public Health and by other departments on the Berkeley campus may be taken to supplement the above curriculum and to satisfy particular student educational objectives. Such courses should include epidemiology, biostatistics, molecular biology, immunology, public health policy, MBA, and behavioral science.

### Recommended Alternatives to Public Health Required Courses

---

Course	Acceptable Substitutions
PB HLTH 142	PB HLTH 241, 245, 252 or exemption exam*
PB HLTH 250A	PB HLTH 250B or exemption exam*

\*Exemption exam will be held during Orientation.

### FIELD STUDY PRACTICE REQUIREMENT

All MPH students in the School are expected to complete a field training or project-based public health practice activity following the first year of academic study in public health. This entails a 12 week, full-time work experience during the summer between the 1st and 2nd year. Unit credit is received by registering for 3 units of Public Health Practice Field Study (PB HLTH297) in the fall semester of the 2nd year.

The Center for Public Health Practice and Leadership (CPHPL) provides the academic and administrative structure for meeting this practice requirement for the MPH degree. To receive academic credit, students need to complete four activities: Internship Agreement, Mid-Point Update/Site Visit, Final Evaluations, Final Project. Please visit the [Center for Public Health Practice and Leadership webpage](#) for more information.

Infectious Disease students can fulfill the public health practice requirement by active participation in a research or field project within the School or by working in a public health agency at the local, state, national, or international level. Examples of field placements from past years are listed below. Students should start planning for their public health practice project at least by the beginning of the Spring semester of the 1st year. Students are encouraged to attend CPHPL's preparatory sessions and work closely with the Field Supervisor assigned to the IDV students and start to look for field work early. CPHPL will hold a few workshops to prepare students for international field study.

### CAPSTONE REQUIREMENT

Students graduating from the MPH Program in Infectious Diseases are expected to possess both core knowledge and critical thinking skills in the area of infectious diseases and a basic understanding of the scope of public health. Students are evaluated for competency in these areas through a comprehensive examination which consists of preparing an analytical, comprehensive paper on a topic involving infectious diseases in the public health context.

The preparation of the analytical paper is initiated during the fall semester of the 2nd year in the course "Current Issues in Infectious Diseases" (PB HLTH 264). Students are to identify their paper topic early in the fall semester. The topic may build upon the student's own experience, e.g., a laboratory research project, the field study or a community intervention project. Alternatively, the student may develop a novel topic of his/her own interest, e.g. a policy proposal on a public health issue or a research proposal. Second-year IDV MPH students present Field Study projects in the IDV MPH symposium. Students should start working on the Comp Paper topics early in fall.

Once the topics are approved, students will be assigned to faculty mentors who will help them with the development of the paper. During the fall semester PB HLTH 264 course, students will give presentations reviewing progress on their papers for peer critique. The paper is completed in the spring semester under the mentorship of a faculty member in the program assigned to the student under the PB HLTH 296 Special Study (2 units) course number.

Students should start early to meet with their faculty mentors in late October/early November to discuss their proposed paper topics and set a schedule and adhere to it for the work to be done. Students should update/meet with their mentors regularly on their progress and made revisions to the paper per feedbacks given. A highly complete draft is due to the faculty mentor in mid-February. The final written paper is due in mid-March to the Division prior to Spring Break and is typically 10-15 pages, single spaced, in length. Deadlines must be strictly adhered to. No late submission will be accepted.

Students submitting acceptable comprehensive papers are then qualified to take the oral examination and will be given the Oral Exam questions to study when submitting the final written paper to the Division on March 15, 2018. Students must follow the Comp Paper guidelines and meet the time lines. Detailed information will be given out by the instructors of PB HLTH 264.

The oral exams are administered during the two-week period immediately following Spring Break starting in April. Each student will be examined by two members of the faculty; exams are one hour in length. A portion of the exam tests the student's knowledge of infectious diseases in the public health context. The exam may also include questions and discussion concerning the analytical paper and general public health issues.

### III. IDI PhD Requirements

#### **PROGRAM OVERVIEW**

The study of infectious disease and immunity focuses on those interactions between infectious agents, their human and other hosts, and their relationship to the environment that may lead to disease in humans. Infectious disease agents include primarily pathogenic bacteria, fungi, helminthes, protozoa, and viruses that continue to be leading causes of morbidity and mortality in human populations throughout the world. The treatment, control, and prevention of infectious diseases depend upon an in-depth knowledge of the biology and genetics of the pathogen; the factors that allow pathogens to infect, persist in the host and produce disease; and the host's defense mechanisms that bring about recovery. This requires an integration of the disciplines of molecular and cellular biology, genetics, immunology, microbiology (which include virology, bacteriology, mycology as well as parasitology) and epidemiology.

The Graduate Group in Infectious Diseases and Immunity is an interdepartmental graduate program that provides graduate students an opportunity to obtain a PhD degree that is unique in emphasizing integrated, multidisciplinary training of host-pathogen-environmental interactions. Important areas of inquiry include the molecular biology of host-pathogen interactions where the molecular and cellular biology of pathogenesis will be investigated; the ecology, evolution, and transmission of infectious agents where the mechanisms of infectious disease acquisition through environmental factors, intermediate hosts and vectors are integrated with biology, surveillance and epidemiological analysis; and prevention and control where the relationship between host immunity and preventive public health practices are integrated with molecular approaches for detection and vaccine and drug development.

The objective of this program is to provide students with research-oriented pursuits that will train them to design and implement independent investigations and advance the fundamental knowledge of infectious disease agents and their interactions with the human host and the environment. The goal is to promote health by integration of basic research and applied

technologies for the development of new approaches for the diagnosis, treatment, prevention, and control of infectious disease in humans. This program crosses traditional departmental boundaries to combine clinical, epidemiological, and basic laboratory research strategies in modern biology and apply these to specific infectious disease problems affecting human populations. Thus, students that matriculate from this program will acquire expertise in fundamental infectious disease research for which there is demand from academic institutions, local and national government agencies, and biotechnology companies.

### **CORE COMPETENCIES**

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 method.
- » 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.

### **CURRICULUM**

In addition to the minimal core course requirements (listed below), each student shall take additional courses selected in consultation with the major professor and/or Graduate Adviser and approved by the Group Executive Faculty Committee. The specific courses will not be listed here since this part of the student's curriculum will be tailored to meet identified professional career goals. In addition, laboratory rotations, teaching, Candidacy examination, research resulting in a dissertation and a culminating seminar are required for completion of the PhD degree.

#### **Unit Requirements:**

Students should take a minimum of 12 units each semester to qualify as full time students, and are advised not to take more than 16 to avoid academic overload. Any class load exceeding 20.5 units will need the Head Graduate Adviser's approval. The minimum requirements include a) general training in molecular biology, epidemiology, statistics, and research ethics; and b) specific training in infectious disease related to their major interest to obtain more specialized preparation. It is expected that students will complete a minimum of 30 units of predominantly graduate-level courses, in addition to 4 units of graduate seminar. All IDI PhD students must

enroll and participate in PB HLTH 293 section 12 the IDI Seminar Series: Monday Doctoral Seminar. In addition, IDI PhD students who have not passed their qualifying examinations must enroll and participate in Wednesday Doctoral Seminar PB HLTH 293 section 4.

During the first three to four semesters of the program, doctoral students complete all or most of the course work required for the degree and rotate through the research laboratories of one to three faculty members, who evaluate the student's ability to conduct laboratory research. This allows the student to determine what research opportunities are available to them, to learn new research methods that will be of value in their subsequent dissertation research, and to decide on a suitable research project for their dissertation.

The Candidacy examination is taken no later than the 4th semester. Within three months of passing the examination, the student is required to apply for Advancement to Candidacy for the PhD degree, and then complete the requirements for the degree under Plan B of the Graduate Division, by submitting an acceptable dissertation on a suitable research question in a timely fashion.

### **Required and Recommended Courses:**

The following minimum core graduate courses, or their equivalent, are required of all students in the Graduate Group. These courses should be taken before the Qualifying Examination Committee is appointed, and the student must receive a B or higher grade average in these courses, except seminars that may be taken on a S/U basis.

#### **Group I: Infectious Diseases (2 courses):**

- |              |  |
|--------------|--|
| PB HLTH 260A | Principles of Infectious Disease, Part I (4 units); Riley & Swartzberg and one of the following: |
| PB HLTH 260B | Principles of Infectious Disease, Part II (4 units); Swartzberg & Riley                          |
| PB HLTH 262  | Molecular Basis of Bacterial Pathogenesis (3 units); Portnoy                                     |
| PB HLTH 265  | Molecular Parasitology (3 units); Harris   |

#### **Group II: Immunology (1 course):**

- |             |   |
|-------------|---|
| PB HLTH 263 | Public Health Immunology (3 units) Stanley or:      |
| MCB 250     | Advanced Immunology (4 units); Raulet/Robey/Shastri |

#### **Group III: Epidemiology and Biostatistics (2 courses):**

- |               |   |
|---------------|---|
| PB HLTH 145   | Statistical Analysis of Continuous-Outcome Data (4 units) or:           |
| PB HLTH 245   | Introduction to Multivariate Statistics (4 units)                       |
| PB HLTH 253B* | Epidemiology and Control of Infectious Diseases (3 units); Reingold or: |
| PB HLTH 260E  | Molecular Epidemiology (3 units); Riley                                 |

---

**\*NOTE:** IDI PhD students without an epidemiology background are strongly encouraged to read more about Epidemiology and/or take 250A prior to taking PB HLTH 253B

#### **Group IV: Research (2 courses):**

- |             |   |
|-------------|---|
| PB HLTH 293 | IDI Monday Doctoral Seminar (1 unit), required every semester       |
| & IDI Wed   | Doctoral Seminar (2 units) for pre-QE students, others are welcome. |

In addition to the required courses listed above, students will elect at least a few additional course work appropriate to their areas of research interest with the guidance of the Graduate Adviser and other faculty.

**Examples for electives:**

PB HLTH 250A	Epidemiologic Methods I (4 units)
MCB 210	Molecular and Cell Biology (4 units) Rio
PB HLTH 266A	Foodborne Diseases (2 units); Lu
PB HLTH 260F	Infectious Disease Research in Developing countries (3 units); Harris
PB HLTH 266B	Zoonotic Diseases (2 units); Dailey
PMB 200B	Genomics and Computational Biology (1.5 units) Brenner
PB HLTH 275	Current Topics in Vaccinology (3 units); Riley
MCB 230	Advanced Cell Biology (4 units); Bilder
MCB 259J	Immune Evasion by Viruses (2 units); Coscoy

**SAMPLE SCHEDULE**

**First Year Program**

Fall Semester		Units
Lab rotation		4
PB HLTH 260A	Principles of Infectious Disease, Part 1	
PB HLTH 263	Public Health Immunology	3
PB HLTH 293	IDI Monday and Wednesday Doctoral Seminar	1; 2

Spring Semester		Units
Lab rotation		4
PB HLTH 260B	Principles of Infectious Disease, Part II	
	Electives	
MCB 210	Molecular and Cell Biology	4
PB HLTH 241	IDI Monday and Wednesday Doctoral Seminar	1; 2
PB HLTH 293	Statistical Analysis of Continuous Outcome Data	4
PB HLTH 253B	Epidemiology and Control of Infectious Diseases	3
or PB HLTH 260E	or Molecular Epidemiology of Infectious Diseases	2-3

**Second Year Program**

Fall Semester		Units
PB HLTH 299	Research or Teaching	3
PB HLTH 293	IDI Monday and Wednesday Doctoral Seminar	1; 2
PMB 200B	Genomics and Computational Biology	1.5
PB HLTH 265	Molecular Parasitology	3
PB HLTH 2XX	Advanced courses as Electives	6

Spring Semester		Units
Qualifying Examination (If passed, submit the Advancement to Candidacy application in the same semester when passed the QE or the latest by the following semester)		
PB HLTH 293	Research	12
PB HLTH XXX	IDI Monday and Wednesday Doctoral Seminar	1; 2

Year 3+ until Graduation		Units
PB HLTH 299	Research	12
PB HLTH 293	IDI Monday Doctoral Seminar	1

Note: IDI PhD students without an epidemiology background are strongly encouraged to read more about Epidemiology and/or take 250A prior to taking PB HLTH 253B. In addition to the required coursework, students should take a few electives to strengthen the knowledge in the areas of their interest. Please consult the IDI Head Graduate Adviser or faculty adviser for academic advising. And IDV Division manager for questions.

**TEACHING REQUIREMENTS**

Teaching is an important part of training for a scientist and an educator. Doctoral students are required to work as GSIs for at least two semesters (50% GSI is preferable) to fulfill the teaching requirements for the program.

**LAB ROTATIONS**

Rotations in lab provide an opportunity for students to experience different research areas and environments. Lab rotation should be arranged by mutual agreement with the faculty and the student in consultation with the IDI Head Graduate Adviser. Each lab rotation may last 9 weeks and should begin as early as desired, but no later than the mid of the first semester. Students are suggested to do at least one or two lab rotations before deciding on the lab for their research. IDI PhD first year students must decide on their lab at the end of April 2018 or early May 2018, the latest. They should inform the Head Graduate Adviser and the IDV Division on their lab decision once the information is available for the continuity of student funding support by the PI of the lab they joined.

**QUALIFYING EXAMINATION**

The Qualifying Examination (QE) is usually taken late in the second year of graduate study (in the fourth semester), after all course requirements have been completed with a grade-point average of at least 3.0, excluding lower-division courses, seminars, and research. Each student will choose a four-member faculty committee. The committee membership must be cleared with the Division and approved by the Program Chair of the IDI Graduate Group and then approved and appointed by the Dean of the Graduate Division. Both the QE Chair and Academic Senate Representative must be members of the Berkeley academic senate. The QE Chair cannot also serve as the Chair of the student’s Dissertation committee. The fourth member can be from the IDI department or other departments with expertise on the subject matter. The PhD Qualifying Examination consists of an oral defense of two written research proposals (10-15 pages each). The Qualifying Exam Application must be submitted to the IDV Division for onward submission to the Grad Division for approval at least three weeks prior to the proposed exam date. No students can take the QE Exam without the Grad Division’s approval.

One proposal represents the student's proposed dissertation research, but the other must be on an unrelated topic pertaining to infectious diseases. The Chair of the PhD Qualifying Examination Committee must approve both proposals. During the examination, questions by the committee focus on the background and theory of the proposed research, the rationale for the presented methods of data analysis, the experimental approach, etc., and not on the actual research results. The latter is a function of the dissertation committee. The purpose of the examination is to test your ability to recognize research problems of fundamental importance, to propose experimental approaches to address problems, and to demonstrate comprehensive knowledge of your disciplinary area and related subjects to test the student's mastery of a broad area of knowledge reflecting the interdisciplinary preparation of an approved course of study. Please visit [IDI website](#) for IDI Guidelines for QE at [microbe.berkeley.edu/idgroup/currents](http://microbe.berkeley.edu/idgroup/currents).

### **ADVANCEMENT TO CANDIDACY**

Within the same semester, or the latest, by the following semester, of passing the qualifying examination, students must apply for advancement to candidacy for the PhD degree by completing an Application for Candidacy to the Doctoral Degree and submit to the Grad Division for approval with a copy of the application to the IDV Division for record. The student must choose and indicate on the form:

1. Their dissertation committee and dissertation title;
2. Whether human subjects or animal research will be involved in the dissertation research. A human subjects protocol must be procured from the Committee for the Protection of Human Subjects before any dissertation research is conducted. Please visit [CPHS web page](#) at for requirements and contact [ophs@berkeley.edu](mailto:ophs@berkeley.edu) for questions.

The dissertation committee chair is the student's research mentor. Both the Dissertation Chair and the Academic Senate Representative of the Dissertation Committee must be members of the Berkeley academic senate and from outside IDV Division. In addition, student must choose another committee member from the Graduate Group in Infectious Disease & Immunity. PhD students with advanced candidacy status are required to meet with their dissertation committee at least once a year and complete an academic progress report in the student information portal with input from both the student and the Dissertation Chair.

### **RESEARCH AND DISSERTATION**

After obtaining research experience through laboratory rotations, the student should be acquainted with the research opportunities available in several laboratories and can evaluate these opportunities in the context of their personal interests. Students with interests that are clearly defined and are not identified among the Graduate Group faculty, but can be identified among faculty at Berkeley or UCSF outside of the Graduate Group, may elect through direct mentorship of a Graduate Group member to conduct their research in a laboratory other than one represented in the Graduate Group.

PhD candidates who are advanced to candidacy must meet with their dissertation committee periodically at least once a year to complete the Annual Report on Candidacy Program in Doctoral Program to the Division for onward submission to the Graduate Division.

The purpose of the committee meeting is to assess student's progress and provide guidance to the student's research. It is expected that the student's research will be of sufficient quality to be accepted for publications in peer-reviewed journals. A goal of three first-author publications is typically considered to write the dissertation. The emphasis on publication of student research, rather than merely completing a dissertation, is an intrinsic component of the Program's training experience and one of its unique strengths.

### **Culminating Seminar**

Within three months prior of filing the student's dissertation, the student will give an oral seminar to the members of the Graduate Group describing the dissertation research conducted at the IDI Monday Doctoral Seminar.

### **Time to Degree**

Most Infectious Disease & Immunity PhD students take 5 years to complete the program. By UC Berkeley policy, IDI students must complete the program in 10 semesters following advancement to candidacy (normative time). 

**Areas of Study**

# **INTERDISCIPLINARY (MPH)**

# INTERDISCIPLINARY

## I. Interdisciplinary Program

Overview

Mission

Core Competencies

Learning Objectives

## II. Interdisciplinary Curriculum

Curriculum Requirements

1-Year MPH Curriculum

1-Year Sample Schedule

## III. Interdisciplinary Capstone

Comprehensive Exam

# I. Interdisciplinary Program

## 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 roles 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) ( <i>PH 291A is not required but is highly recommended</i> )	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](#). 

## **Areas of Study**

# **MATERNAL & CHILD HEALTH (MPH)**

# MATERNAL & CHILD HEALTH

## I. Maternal and Child Health Program

Overview

Mission

Core Competencies

Learning Objectives

## II. Maternal and Child Health Curriculum

One-Year MPH Curriculum

Two-Year MPH Curriculum

Two-Year Sample Schedule

## III. Maternal and Child Health Capstone

Capstone Overview

Requirements for the MCH Capstone

## I. Maternal and Child Health Program

### OVERVIEW

The UC Berkeley Maternal and Child Health Program (MCH) has provided superior graduate training, continuing education, research and service since its founding in 1953. The program has over 1,200 alumni across the country and around the world. It is our mission to develop the next generation of leaders equipped to solve the health challenges facing women, children, adolescents and families of the 21st century.

The MCH Program's multifaceted and interdisciplinary curriculum and dynamic learning environment are designed to respond to newly emerging issues in MCH and to the unique needs of the diverse communities and cultures of the San Francisco Bay area, State of California, and the world; and to inspire students to use their skills and expertise to achieve health equity for all.

### MISSION

As a Center of Excellence in MCH education, science, and practice, our three overall goals are:

- » To provide the best education possible to develop graduates who are prepared to lead Title V and other MCH organizations and promote and protect the health status of diverse MCH populations.
- » To prepare public health and health care professionals to be leaders in the field of MCH with a culturally competent, multidisciplinary, community oriented, ethical, and cost-effective vision of maternal, child and adolescent health, with the skills that can help solve the health challenges of the 21st century.
- » To work closely with Title V and other MCH programs at the state, local, national, and global levels to mobilize large scale, synergistic efforts to reduce and eliminate health disparities and barriers to health that affect MCH populations. For information about the UC Berkeley MCH Center of Excellence at the School of Public Health, visit: [www.ucbmch.com](http://www.ucbmch.com)

### CORE COMPETENCIES

By the end of their studies at the school of Public Health at the University of California, Berkeley, Maternal and Child Health Program graduates will be able to:

- » 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.

## II. Maternal and Child Health Curriculum

### ONE-YEAR MPH CURRICULUM

The 1-year MPH curriculum in Maternal and Child Health (MCH) is offered to health professionals with experience in health services for women, children, and families (physicians, nurses, psychologists, social workers, and other masters-level professionals). It is an intensive, full-time course of study running from July to May (11 months). The program requires completion of at least 16-18 units of coursework in the fall and spring semesters. Curricular requirements are summarized below.

The 1-year program also requires completion of a capstone research project completed by the student during the year. This project satisfies the comprehensive examination requirement as well as the field practicum requirement. Projects are presented at the end of the fall and spring semesters in written and oral formats.

In addition to these requirements, students in the 1-year program may be able to transfer 4 units of graduate level course work from an accredited medical school or other masters' level program that they have already completed. Please note that students must petition the Graduate Division in order to transfer units.

### SUMMER SESSIONS

The School of Public Health offers several courses during Summer Sessions. Introduction to Biostatistics (PH 141) and Epidemiologic Methods I (PH250A) can fulfill two of the MPH Degree breadth requirements and are generally offered in the session beginning in early July. Please check the online schedule for summer session courses and exact dates. Registration for incoming graduate students is usually available in June. More information can be found at [summer.berkeley.edu](http://summer.berkeley.edu).

One-year program students who plan to take the exemption exam(s) for Introduction to Biostatistics or Epidemiologic Methods I should still plan to complete at least four course units during Summer Sessions. Students must consult with the MCH Assistant Director regarding alternative courses and procedures for pursuing an exemption.

---

**NOTE:** Modifications in program requirements and course offerings may occur from year to year.

### REQUIRED COURSES

Summer		Units
PB HLTH 141*	Introduction to Biostatistics	5
PB HLTH 250A*	Epidemiological Methods I	3
<b>TOTAL</b>		<b>8 units</b>

Fall		Units
PB HLTH 200J	Health Policy & Management Breadth	2
PB HLTH 200L	Health and Social Behavior Breadth	2
PB HLTH 210	Foundations of MCH Policy, Practice, & Science	3
PB HLTH 210E	Practicum in MCH Data Analysis I	3
PB HLTH 290**	Applied Linear Models	4
PB HLTH 299***	Independent Research – Capstone Project or Electives	2-4
<b>TOTAL</b>		<b>16-18 units</b>

Spring		Units
PB HLTH 200K	Environmental Health Sciences Breadth	2
PB HLTH 205****	Needs Assessment & Program Planning Development	4
PB HLTH 210F	Practicum in MCH Data Analysis II	1-4
PB HLTH 218B**	Evaluation of Health and Social Programs	4
PB HLTH 299***	Independent Research Study – MCH Capstone Electives	4 3
<b>TOTAL</b>		<b>16 units</b>

\*This requirement may also be fulfilled by completing an approved higher-level alternative course or by passing an exemption exam. Alternatives should be discussed with the MCH Assistant Director.

\*\*This requirement can also be fulfilled by PB HLTH 245 Introduction to Multivariate Statistics.

\*\*\*4 units of independent study with your capstone adviser may be taken in the fall or spring, or split between semesters.

\*\*\*\*This requirement can also be fulfilled by PB HLTH 218B Evaluation of Health & Social Programs, offered in the fall.

## TWO-YEAR MPH CURRICULUM

The 2-year curriculum for the MPH in Maternal & Child Health (MCH) is offered to post-baccalaureate students who seek competency in MCH analytic, research, and programmatic skills. It requires completion of a quantitative capstone research project that fulfills the comprehensive examination requirement for the School of Public Health and a 3-month supervised summer internship.

The 2-year curriculum is a full-time course of study, requiring a minimum of 48 units of coursework over four academic semesters and one summer (12 units required per semester). Courses on preparation for teaching as a GSI (375 series courses) and lower-division undergraduate courses do not count toward the 48 overall units, though they do count toward the semester 12-unit minimum.

### Minimum Unit Requirement

The Graduate Council requires that all graduate students be enrolled in a minimum of 12 units per semester regardless of their employment status. This is especially important for students

receiving Block grant and other campus fellowships/awards. The campus will rescind the award for under-enrollment/noncompliance if this unit requirement is not followed.

### Minimum Grade Breadth Requirement

MPH students are required to attain a B- or better in breadth course requirements (Epidemiology PH 250A; Biostatistics PH 142; Health Policy & Management 200J; Environmental Health PH 200K; Health and Social Behavior PH 200L). Students attaining less than a B- will be required to retake the course. To receive the MPH degree, the student must also meet the Good Academic Standing Rule, i.e. average overall GPA is a B (3.0) or higher.

**NOTE:** Modifications in program requirements and course offerings may occur from year to year.

## SCHOOL-WIDE REQUIRED COURSES

Fall Semester		Units
PB HLTH 142	Introduction to Biostatistics	4
PB HLTH 200J	Health Policy & Management Breadth	2
PB HLTH 200L	Health & Social Behavior Breadth	2
PB HLTH 250A*	Epidemiologic Methods I	3
PB HLTH 297	Public Health Field Placement	3
Spring Semester		Units
PB HLTH 200K	200K Environmental Health Breadth	2

## MCH REQUIRED COURSES

Fall Semester		Units
PB HLTH 210	Foundations of MCH Policy, Practice, & Science	3
PB HLTH 210E	Practicum in MCH Data Analysis I (Capstone Seminar)	3
Spring Semester		Units
PB HLTH 292	MCH Seminar – Journal Club	2
PB HLTH 290	MCH Leadership Seminar	2

## METHODS OF MEASUREMENT AND ANALYSIS (at least one of the following)

Fall Semester		Units
PB HLTH 290	Applied Linear Models	4
PB HLTH 245	Introduction to Multivariate Statistics	4
Spring Semester		Units
PB HLTH 241	Statistical Analysis of Categorical Data	4

**APPLIED PROGRAMMATIC SKILLS** (at least one of the following)

Fall Semester		Units
PB HLTH 218B	Evaluation of Health and Social Programs	4
Spring Semester		Units
PB HLTH 205	Needs Assessment & Program Planning	4

**HIGHLY RECOMMENDED ELECTIVES**

Fall Semester		Units
PB HLTH 210B	Adolescent Health	3
PB HLTH 212A	International MCH	2
PB HLTH 213A	Family Planning, Population Change & Health	3
Spring Semester		Units
PB HLTH 210D**	Reproductive and Perinatal Epidemiology	2
PB HLTH 210F	Practicum in MCH Data Analysis II	4

\*This requirement may also be fulfilled by passing an exemption exam or by completing an approved higher-level alternative course. Alternatives should be discussed with the MCH Assistant Director.

\*\*Offered in odd years.

**TWO-YEAR SAMPLE SCHEDULE**

The fall semester is pre-scripted with required coursework. The spring semesters offer students the opportunity to take electives specific to their areas of interest. Students should plan to meet regularly with their faculty adviser and the MCH Program Assistant Director to discuss course options and to insure that they are on track to complete their degree.

**First Year Program**—Fall 14-16 units, Spring 14+ units

Fall Semester 2016		Units
PB HLTH 142	Introduction to Biostatistics	4
PB HLTH 200J	Health Policy & Management Breadth	2
PB HLTH 200L	Health & Social Behavior Breadth	2
PB HLTH 210	Foundations of MCH Policy, Practice & Science	3
PB HLTH 250A	Epidemiologic Methods I	3
XXX	Elective(s)	2+
Spring Semester		Units
PB HLTH 200K	Environmental Health Sciences Breadth Course	2
PB HLTH 205	Needs Assessment and Program Planning	4
PB HLTH 241*	Statistical Analysis of Categorical Data	4
PB HLTH 290	MCH Leadership Seminar	2

PB HLTH 292	MPH Seminar – MCH Journal Club	2
XXX	Elective(s)	2+

**Second Year Program**—Fall 12-16 units, Spring 12+ units

Fall Semester		Units
PB HLTH 210E	Practicum in MCH Data Analysis I	3
PB HLTH 218B	Evaluation of Health and Social Programs	4
PB HLTH 290	Applied Linear Models	4
PB HLTH 297	Public Health Field Placement	3
XXX	Elective(s)	2+
Spring Semester		Units
PB HLTH 210F	Practicum in MCH Data Analysis II	4
XXX	Elective(s)	8+

### III. Maternal and Child Health Capstone

The Graduate Division of UC Berkeley and the School of Public Health require a capstone—also known as comprehensive exam or integrative learning experience (ILE)—with both written and oral components. The capstone builds on the core curriculum requirements of the School and the student’s MPH concentration and is intended to be a culminating experience requiring synthesis and integration of knowledge acquired through coursework, internships, and other experiences.

MCH faculty are currently revising our program capstone requirements with the goal of making the capstone more relevant to student needs and following the new Council on Education for Public Health (CEPH) accreditation criteria. Details will be provided by each program in the fall semester.

## **Areas of Study**

# **PUBLIC HEALTH NUTRITION (MPH)**

# PUBLIC HEALTH NUTRITION

## I. Public Health Nutrition Program

**Program Overview**

**Mission**

**Core Competencies**

**Learning Objectives**

## II. Public Health Nutrition Curriculum

**Two-Year MPH Curriculum**

**Two-Year Sample Schedule**

## III. PHN Capstone

**PHN Capstone Details**

**Capstone Requirements**

## I. Public Health Nutrition Program

### **PROGRAM OVERVIEW**

Public Health Nutrition (PHN) is an area of concentration emphasizing the application of food and nutrition knowledge, policy, and research to the improvement of the health of populations. Students in PHN will gain a perspective on the following critical questions:

- » What are the most critical social, behavioral, and food and nutrition-related factors that affect health?
- » What are ways that the design, implementation, and evaluation of programs can improve the nutritional status of the population or subgroups in the population?
- » How can nutrition and food related public policies affect health, especially in vulnerable populations?
- » How can global, national, state, and local community programs be designed to improve the nutritional status of the population as a whole and those at particular risk?

### **MISSION**

The mission of the Public Health Nutrition Program is to develop future public health leaders in the field of nutrition. Our research and curriculum span a breadth of topics from the metabolic bases of human health and disease, through the influence of the sociocultural determinants of health, to nutrition-related programs and policies that address human health and safety. Students who complete professional training in Public Health Nutrition go on to exciting careers in nutritional research, non-governmental organizations (NGOs), as well as local and state health departments.

### **CORE COMPETENCIES**

Upon satisfactory completion of the MPH curriculum with a concentration in Public Health Nutrition, students will be able to demonstrate the following competencies:

- » Critically analyze emerging and critical issues in public health nutrition.
- » Evaluate nutrition research and interpret the implications for public health policies and programs.
- » Organize and direct nutrition-related programs and projects, within the context of a health system.
- » Analyze and formulate public policy related to health and nutrition.
- » Plan, perform, and evaluate nutritional assessments and screening for individuals and populations.
- » Design, develop and evaluate nutrition components of health services, programs, and projects.
- » Demonstrate effective organizational skills and the ability to communicate with and enlist the support of potential participants and stakeholders.
- » Participate in making policy related to health and nutrition within services, programs, and projects.
- » Interpret food and nutrition legislation and regulations for professionals and consumers.
- » Understand the biological and social roles of nutrition in health.

**LEARNING OBJECTIVES**

In general, the Masters of Public Health graduate will possess and demonstrate:

- » A broad understanding of the core areas of public health and related disciplines with particular emphasis on the selected field of study (e.g. Public Health Nutrition).
- » An ability to conceptualize analytic models and collect relevant data, test models with data, and present findings in a policy or scientific context. Skills for effective practice in their selected field of study.
- » A capacity to assess one's own strengths or weaknesses and to plan for continued self development.

Learning objectives specific to the Public Health Nutrition Program are to:

- » Plan, perform, and evaluate nutritional status assessment, and screening for individuals and groups to identify the health needs and resources of the community.
- » Plan and evaluate the nutrition component(s) of health services, programs, and projects; demonstrate organizational skills, such as the ability to prioritize and manage time effectively; participate in formulating and analyzing policy related to health and nutrition within services, programs, and projects.
- » Provide services within the nutrition component(s) of health services, programs, and projects; develop realistic expectations for change; and develop effective approaches to bring about change in individuals, groups, and systems. Participate as a member of a multi-disciplinary health team through consultation, in-service education, and service coordination.
- » Disseminate nutrition information to professional and nonprofessional audiences through various media; and develop and apply knowledge and skills in learning theory, curriculum planning, behavior modification, and communication techniques.
- » Analyze and help formulate public policy related to health and nutrition; interpret food and nutrition legislation and regulations for professionals and consumers; be active in the legislative process regarding health and nutrition issues.
- » Participate in discussions and present critical analyses of issues in public health nutrition.
- » Design and conduct analyses of research projects in the area of public health nutrition.

## II. Public Health Nutrition Curriculum

### **TWO-YEAR MPH CURRICULUM**

The PHN Program is a 2-year, full-time MPH degree program. MPH graduate students are expected to complete at least 48 units of coursework over four academic semesters and one summer. Students must complete both Schoolwide required courses as well as PHN required courses for the MPH degree in PHN. Elective courses may be chosen from anywhere in the School or university. Elective courses must be numbered 100 and higher to count toward the 48-unit minimum requirement for graduation.

**SCHOOL-WIDE REQUIRED COURSES** (16 units)

Fall		Units
142*	Introduction to Probability & Statistics in Biology and Public Health	4
200J*	Health Policy & Management Breadth Course	2
200L	Health & Social Behavior Breadth Course	2
250A*	Epidemiologic Methods I	3
297*	Public Health Field Placement (2nd fall only)	3
Spring		Units
200L	Health & Social Behavior Breadth Course	2
200K	Environmental Health Breadth Course	2

**PHN REQUIRED COURSES** (21 required units)

Fall		Units
206C	Nutritional Epidemiology (2nd fall only)	3
207A	Public Health Aspects of Maternal and Child Nutrition	2
292	PHN Capstone (2nd Fall Only)	3
218B	Evaluation of Health and Social Programs	4
206D**	Food & Nutrition Programs and Policies in Developing Countries (even years)	3
206	Critical Issues in Public Health Nutrition	2
Spring		Units
205	Program Planning, Development and Evaluation	4
206B**	Food and Nutrition Policies and Programs (odd years)	3
290	Leadership in MCH (Required for MCH Nutrition trainees only)	1

**RECOMMENDED COURSES FOR STUDENTS INTERESTED IN NUTRITIONAL EPIDEMIOLOGY**

Fall		Units
245	Introduction to Multivariable Statistics	4
250B	Epidemiological Methods II	4
Spring		Units
241	Statistical Analysis of Categorical Data	4
144A	Beginning SAS Programming	2
144B	Intermediate SAS Programming	4

(continued next page)

**RECOMMENDED**

Fall/Spring		Units
MBA 209F	Fundamentals of Business	3

**NOTES:** \* This requirement may also be fulfilled by passing an exemption exam or by completing an SPH-approved higher-level alternative course

\*\*PB HLTH 206B and PB HLTH 206D are both recommended, but only one is required and may be taken – in either your 1st or 2nd years. They are offered alternating years, so each 2-year MPH student will have a chance to take both if desired. MCH Nutrition trainees **MUST** take PB HLTH 206B. Please note that most of the courses listed above are only offered only in the Fall semester OR the Spring semester, not both semesters.

**TWO-YEAR SAMPLE SCHEDULE****First Year Program**—Required Courses

Fall Semester		Units
PB HLTH 142*	Biostat	4
PB HLTH 250A*	Epi Methods 1	3
PB HLTH 200J	HPM Breadth	2
PB HLTH 200K	EHS Breadth	2
PB HLTH 206	Critical Issues in Public Health Nutrition	2
PB HLTH 206D	Food and Nutrition Programs and Policies in Developing Countries	3
PB HLTH 207A	Public Health Aspects of Maternal and Child Nutrition	2

**TOTAL REQUIRED UNITS: 15-18**

\*OPTIONAL: PH142 or PH250A can also be taken in the summer before your first year if you want to start early (in the summer, PH142 is called PH141 and is 5 units). PH142 can be substituted with PH241 (Spring) or PH245 (Fall, M 2-5 p.m.). An alternative to PH245 (similar content) is PH290 (Applied Linear Models, MW 5-7 p.m.), PH290 does NOT count as a substitute for PH142 so you **MUST** take either 142, 241, or 245 in addition to 290-003 to satisfy your Biostat requirement.

Spring Semester		Units
PB HLTH 205	Program Planning	
PB HLTH 200L	HSB Breadth	2
PB HLTH 206B	Food & Nutrition Policy & Programs	3

**TOTAL REQUIRED UNITS: 6-9**

MCH Nutrition funded trainees are also required to take PH290.005 MCH Leadership (1 unit, Spring) in either your 1st or 2nd year.

**Optional**

- » For students who want more training for research, you should also take PH241 (Statistical Analysis of Categorical Data, MWF 1-2 p.m.) and PH144A (Beginning SAS Programming, W 4-6 p.m. or F 3-5 p.m.). PH241 is more important in your 1st year Spring, if you only want to choose one of these.
- » MBA 209F Fundamentals of Business Administration (3 units, W 6-9p)

**SECOND YEAR PROGRAM—REQUIRED COURSES**

Fall Semester		Units
PB HLTH 206c	PHN Capstone	3
PB HLTH 206D*	Nutrition in Developing Countries	3
PB HLTH 292.2	Nutrition Epidemiology	3

**TOTAL REQUIRED UNITS: 5**

Students will also enroll in PH297 (3 units), to earn credit for the summer field placement.

**Optional**

For students who want more training for research, PH142 can be substituted for PH241 or PH245 (M 2-5 p.m.). An alternative to PH245 (similar content) is PH290-003 (Applied Linear Models, MW 5-7 p.m.), PH290-003 does NOT count as a substitute for PH142 so you MUST take either 142, 241, or 245 in addition to 290-003 to satisfy your Biostat requirement.

Spring Semester		Units
PB HLTH 206B	Food & Nutrition Policies & Programs	3
PB HLTH 218B	Evaluation of Health & Social Programs	4

**TOTAL REQUIRED UNITS: 4-7**

MCH Nutrition funded trainees are also required to take PH290-005 MCH Leadership (1 unit, Spring) in either your 1st or 2nd year.

## III. Public Health Nutrition Capstone

**PHN CAPSTONE DETAILS**

The Graduate Division of UC Berkeley and the School of Public Health require a comprehensive exam with both written and oral components. Each student in the Public Health Nutrition program is required to submit a written paper and present it orally in the spring semester that precedes graduation. All students must receive a passing grade on their paper and their oral presentation in order to receive the MPH degree. This paper serves as the comprehensive examination in PHN, and is intended to be a culminating experience for MPH students, requiring synthesis and integration of knowledge acquired through coursework, internships and other experiences.

Students prepare for and complete this requirement in the Capstone Courses in Public Health Nutrition (PH292 in the Fall of your second year). The Capstone Course in PHN is an integrative seminar that builds on the core curriculum requirements of the School and the PHN program, and provides a structured schedule for the development of the paper and the presentation.

### **CAPSTONE REQUIREMENTS**

Students will prepare a 10-page paper, a press release, and an oral presentation for faculty and peers on a Public Health Nutrition topic of their choice. ILE papers will be original, individual, and based on the class associated with each option below. Each ILE option below requires a course to be taken concurrently, in addition to any prerequisites noted below. Students should use the tools and skills learned in the class taken concurrently to write their ILE papers. Students must sign an ILE Plan Contract and submit it to Carol Hui by May 1.

#### **Option 1: Program Evaluation**

Required Class: PB HLTH 218B Evaluation of Health & Social Programs

In PBHLTH 218B, you will be led through the process of designing a plan for a process and outcome evaluation of a program in groups of two. For your ILE, you will write a new evaluation based on the same/similar program/organization.

#### **Option #2: Case Study**

Required Class: PB HLTH 206D Global Nutrition

In PBHLTH 206D, you will learn to write a case study. For your ILE, you must write a new case study on a topic of your choice.

#### **Option #3: Quantitative Research Project Using NHANES Data Set**

Required Class: PB HTLH 206C Nutritional Epidemiology

In PBHLTH 206C, you will be led through data analysis of the NHANES data set. For your ILE, you will write your analysis in a 10-page paper.

Additional Prerequisites/Concurrent Classes Required (all completed with B+ or higher):

- » PB HLTH 142 Intro to Biostatistics (prior to Fall 2017)
- » PB HLTH 250A Epidemiological Methods 1 (prior to Fall 2017)
- » PB HTLH 241 Statistical Analysis of Categorical Data (prior to Fall 2017)
- » PB HLTH 290 Applied Linear Models (concurrently with PBHLTH 292 PHN ILE Course in Fall 2017)

Regardless of the type of paper written, there are four features that should be common to all the papers submitted to fulfill this requirement. The paper must:

1. Be original and new work done by the student and not previously submitted for credit in a course at UC Berkeley or any other institution.
2. Address a nutrition-related topic and demonstrate knowledge and skills in key public health and public health nutrition competencies.
3. Include a critical review of the literature describing what is already known about the topic area, and what gaps still remain.
4. Include a clear plan with: your question/issue/problem, your goals and objectives, your plan of activities for getting the work done, a rationale for your choice of those activities,

how you will eln total, the examination requires: (1) a 10-page written paper, (2) a one-page press release, and (3) a five-minute oral presentation to faculty and peers.

In total, the examination requires: (1) a written component (a 20 page paper) and (2) a one page press release for a lay audience, and (3) a short (10 minute) oral presentation to a group of faculty and peers.

As you work on your papers, consider how you are demonstrating your skill and competence in the following areas, which are key Public Health Nutrition Competencies:

1. Ability to set priorities to match the interest and funds available
2. Public policy advocacy—skills to know what the levers are for policy change
3. Cultural competence—at home and abroad, foreign and domestic
4. How nutrition affects populations—understanding of nutrition science information and how to use it
5. Communication skills—written and verbal, and for reaching mass audiences
6. Understanding how to translate academic research into practice and policy
7. Social competence—knowledge and understanding of social and environmental determinants of health and nutrition
8. Community organization
9. Program planning and evaluation
10. Understanding of food systems, food production, and agriculture, and related business and economics
11. Networking and team building—understanding of how to collaborate with other fields outside of public health
12. Understanding the health care delivery system
13. Understanding research gaps in nutrition

## LEARNING OBJECTIVES

By completion of this course, students will be able to:

1. Articulate, in writing and orally, their breadth and depth of knowledge of public health, and, more specifically, the public health nutrition competencies.
2. Demonstrate the ability to translate academic research into a recommended practice, intervention or policy.
3. Demonstrate the ability to plan an evaluation for a program or project.
4. Create and deliver a concise presentation that communicates the background, core issue, recommendations/alternatives and challenges related to their chosen topic.
5. Demonstrate the ability to translate complex information into a press release suitable for a lay audience.
6. Demonstrate the ability to give and accept critical feedback from professional colleagues. 

# *Thank You*

The School of Public Health would like to extend its appreciation to everyone who contributed to the Schoolwide Handbook. Many people were involved in gathering content, creating templates for the layout, writing new text, editing, and designing the overall project. Here is a hearty “Thank you” to you all.

Linda Anderberg  
Michelle Azurin  
Chrissy Badaracco  
Svetlana Battle  
Joven Chacon  
Norma Firestone  
Carol Hui  
Kate Jerman  
Teresa Liu  
Kimberly MacPherson  
Brittany Margot  
Janene Martinez  
Sharon Norris  
Angela Waxman  
Carol Wong