

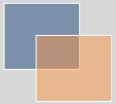
# Mel and Enid Zuckerman College of Public Health Academic Catalog 2015-2016





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# What Is Public Health?

The broad mission of public health was defined by the Council on Education for Public Health in 1978 as "enhancing health in human populations through organized community effort." Public health practitioners are concerned with the determinants of disease, disability and premature death, and the planning and organization of appropriate health services, including health education and policy. The aim of public health is to apply scientific, behavioral, social, and technical knowledge to prevent disease and disability, and to promote health by means of organized community effort. Programs of public health train students in these and other disciplines, and help them to practice the coordination of the various fields in the interest of community health.

The Master and Doctor of Public Health are professional degrees designed to prepare graduates to solve public health problems as practitioners who can apply a breadth of knowledge as well as expertise and experience in one specific area of public health. This catalog presents course requirements for the Bachelor, Master's and Doctoral programs in the Mel and Enid Zuckerman College of Public Health (MEZCOPH).

Current students should use this catalog in conjunction with the academic advisors and faculty mentors to design their personal plans of studies. Students interested in attending MEZCOPH will be able to gain knowledge about what their academic experience will include while being a student at MEZCOPH. Completion of each of these programs allows students to take positive steps forward toward increasing their knowledge about public health and to acquire the skills needed to solve public health problems in one or more specific area of public health.



# Bachelor of Science in Public Health



**Core Faculty:** Paloma Beamer, PhD; Heidi Brown, PhD; Jeff Burgess, MD, MPH; Robert Canales, PhD; Scott Carvajal, PhD, MPH; Christina Cutshaw, PhD; Burris Duncan, MD; Eileen Eisen-Cohen, PhD; Janet Foote, PhD; Joe Gerald, MD, PhD; Brenda Granillo, MS; Stephanie Griffin, PhD, CIH; Robin Harris, PhD, MPH; Mary Koss, PhD; Eric Lutz, PhD; Eyal Oren, PhD, MS; Mary Kay O'Rourke, PhD; Sheila Parker, DrPH; Kerstin Reinschmidt, PhD, MPH; Kelly Reynolds, PhD, MSPH; Ernest Schloss, PhD; Terry Stobbe, PhD, CIH, CSP, CPE; Joe Tabor, PhD, MPH; Douglas Taren, PhD; Cynthia Thomson, PhD, RD, CSO; Ron Watson, PhD; Jennifer Winkler, MPH

**Affiliated Faculty:** Holly Bryant, RD, MPH; Michelle Gamber, DrPH, MPH; Lee Ann Hamilton, MA, CHES; Terry Urbine, PhD

**Assistant Director of Undergraduate Advising:** Stephanie Springer, MPH, Lecturer

The Bachelor of Science with a major in Public Health is designed to promote an understanding of health and disease based on public health principles. The primary goal of the program is to prepare students to work in public health to improve the quality of life of individuals and communities. The curriculum provides general knowledge regarding public health principles and practice augmented by concentrated study (tracks) in Environmental and Occupational Health, Health Behavior and Health Delivery. Field work provides students with an experience that incorporates classroom learning into public health practice and prepares them for future employment.

The core competencies of the major provide the knowledge and skills needed to conduct public health practice in diverse populations. Particular emphasis is placed on understanding health care delivery in the US and abroad, incorporating epidemiologic and statistical methodologies into public health practice, providing culturally appropriate and effective interventions, identifying health disparities, planning and evaluating health interventions, and understanding the link between nutrition and health.

Specific focus in one or more tracks provides in-depth knowledge of a particular aspect of public health practice. The Environmental and Occupational Health track focuses on recognition of health hazard sources and approaches used to identify and evaluate them. Through available frameworks student will learn to manage and control exposures at individual and population levels thus promoting health and preventing disease. The Health Behaviors track emphasizes preventable behavioral risk factors for social dysfunction, illness and injury. The Health Delivery track focuses on important but often overlooked biologic, individual and system level determinants that affect health and health delivery in the United States. Mastery of the core and track content prepares students to directly enter the workforce or for graduate education in public health, medicine, pharmacy or dentistry.

Acceptance to the public health major is dependent on the candidate's academic aptitude; prior experience in public health demonstrated via community service or public health practice; leadership potential; commitment to underserved areas and populations, and respect for cultural diversity. Admission to the major is by application only and requires a minimum: a University of Arizona GPA of 2.5 or greater; completion of the pre-health prerequisite courses with a grade of C or higher; except for ENGL 102, which requires a grade of B or higher; a

completed major application, a resume or CV and personal narrative. Acceptance is competitive and may require qualifications that exceed the listed minimums. The required ***prerequisite courses*** for the Bachelor of Science in Public Health are a minimum of **56 credit hours**.

## **Bachelor of Science in Public Health Curriculum (64 units)**

**Total Minimum Requirement for the Bachelor of Science in Public Health = 120 units**

### **Required Core Courses (33 units: *grade of C or higher required*)**

|          |                                                                  |
|----------|------------------------------------------------------------------|
| ENGL 307 | Business Writing (3)<br><b>OR</b> ENGL 308 Technical Writing (3) |
| EPID 309 | Introduction to Epidemiology (3)                                 |
| CPH 310  | Health Care in the US (3)                                        |
| CPH 350  | Principles of Health Education and Health Promotion (3)          |
| CPH 375  | Introduction to Environmental & Occupational Health (3)          |
| CPH 376  | Introduction to Biostatistics (3)                                |
| CPH 387  | Health Disparities and Minority Health (3)                       |
| CPH 433  | Global Health# (3)                                               |
| CPH 478  | Maternal and Child Health Nutrition# (3)                         |
| CPH 493A | Field Work in Public Health# (6)                                 |



### **TRACK UNITS (minimum 9 units required; *grade of C or higher required*)**

**Select one track option and complete at least 3 courses:**

#### **Environmental and Occupational Health Track**

|                      |          |                                                                                     |
|----------------------|----------|-------------------------------------------------------------------------------------|
| <b>Required:</b>     | CPH 484  | Fundamentals of Industrial and Environmental Health# (3)                            |
| <b>Select any 2:</b> | CPH 401  | Introduction to Mapping for Public Health# (3)                                      |
|                      | CPH 418  | Introduction to Health Risk Assessment# (3)                                         |
|                      | CPH 422  | Safety Fundamentals# (3)                                                            |
|                      | CPH 439A | Outbreaks and Environmental Microbiology: Then to Now                               |
|                      | CPH 457  | Food We Eat, Drugs We Take, How We Work and Play--The U.S. Regulatory Agencies# (3) |
|                      | CPH 489  | Public Health Preparedness# (3)                                                     |

#### **Health Behaviors Track**

|                      |         |                                             |
|----------------------|---------|---------------------------------------------|
| <b>Select any 3:</b> | CPH 306 | Drugs and Society (3)                       |
|                      | CPH 330 | Human Sexuality (3)                         |
|                      | CPH 381 | Health Education Intervention Methods (3)   |
|                      | CPH 400 | Contemporary Community Health Problems# (3) |
|                      | CPH 449 | Family Violence# (3)                        |

#### **Health Delivery Track**

|                      |         |                                                                    |
|----------------------|---------|--------------------------------------------------------------------|
| <b>Select any 3:</b> | CPH 405 | Biology in Public Health Research and Practice# (3)                |
|                      | CPH 407 | Health Economics and Policy# (3)                                   |
|                      | CPH 412 | Public Health Approaches to Mental Health Disorders in the US# (3) |
|                      | CPH 415 | Strategic Planning# (3)                                            |
|                      | CPH 458 | Health Care Marketing# (3)                                         |

**CPH ELECTIVE UNITS (minimum 12 units: grade of C or higher required)**

|          |                                                                                     |
|----------|-------------------------------------------------------------------------------------|
| CPH 322  | Health Education Ethical Leadership (3)                                             |
| CPH 404  | Fundamentals of Evaluation# (3)                                                     |
| CPH 425  | Latino Health Disparities                                                           |
| CPH 426  | Topics in Environmental Justice#(3)                                                 |
| CPH 439  | Introduction to Environmental Health Policy# (3)                                    |
| CPH 457  | Food We Eat, Drugs We Take, How We Work and Play--The U.S. Regulatory Agencies# (3) |
| CPH 459  | Special Topics in Public Health# (1-3)                                              |
| CPH 479  | Infections and Epidemics# (3)                                                       |
| CPH 484  | Fundamentals of Industrial and Environmental Health# (3)                            |
| CPH 487  | Feminist Interpretations of Health (3)                                              |
| CPH 493B | (Elective) Internship in Public Health# (1-6)                                       |
| CPH 497E | Public Health for Community Wellness# (2)                                           |
| CPH 497G | Open Airways for Schools # (1)                                                      |
| CPH 497S | Skin Cancer Prevention in the Community Setting# (1-2)                              |

***Track courses may also be used as CPH electives.***

**GENERAL ELECTIVE UNITS (min. 10 units)**

**Recommended Course Sequencing**

**Junior Year** (30 – 33 units)

**CORE UNITS** (21 units)

|          |                                                         |
|----------|---------------------------------------------------------|
| ENGL 307 | Business Writing (3) <b>OR</b>                          |
|          | ENGL 308 Technical Writing (3)                          |
| CPH 309  | Introduction to Epidemiology (3)                        |
| CPH 310  | Health Care in the U.S. (3)                             |
| CPH 350  | Principles of Health Education and Health Promotion (3) |
| CPH 375* | Introduction to Environmental & Occupational Health (3) |
| CPH 376  | Introduction to Biostatistics (3)                       |
| CPH 387  | Health Disparities and Minority Health (3)              |

\*Students with an interest in Environmental and Occupational Health are encouraged to enroll in CPH 375 as early as possible in their academic career.

**TRACK UNITS** (3-6 units)

**CPH ELECTIVE UNITS** (3-6 units)

**GENERAL ELECTIVE UNITS** (3-6 units)

**Senior Year** (30 – 33 units)

**CORE UNITS** (12 units)

|          |                                          |
|----------|------------------------------------------|
| CPH 478  | Maternal and Child Health Nutrition# (3) |
| CPH 433  | Global Health# (3)                       |
| CPH 493A | Field Work in Public Health# (6)         |

**TRACK UNITS** (6-9 units)

**CPH ELECTIVE UNITS** (6-9 units)

**GENERAL ELECTIVE UNITS** (6-10 units)

# Admission to the major or minor required for enrollment.



## Undergraduate Minor in Public Health

**A minimum of 18 units are required for the undergraduate minor in Public Health**

(*Grade of C or higher required*). Admission to the minor requires a minimum 2.5 GPA. Please note that the Public Health minor cannot be added during priority registration. In addition, admission into the minor does not guarantee entry into CPH courses.

### **Required** (9 units)

- CPH 178 Personal Health and Wellness (3)
- CPH 200 Introduction to Public Health (3)
- CPH 309 Introduction to Epidemiology (3)

### **Electives\*** (9 units)

- CPH 306 Drugs and Society (3)
- CPH 310 Health Care in the US (3)
- CPH 322 Health Education and Ethical Leadership (3)
- CPH 330 Human Sexuality (3)
- CPH 350 Principles of Health Education and Health Promotion (3)
- CPH 375 Introduction to Environmental & Occupational Health (3)
- CPH 376 Introduction to Biostatistics (3)
- CPH 381 Health Education and Intervention Methods (3)
- CPH 387 Health Disparities and Minority Health (3)
- CPH 400 Contemporary Community Health Problems#(3)
- CPH 401 Introduction to Mapping for Public Health# (3)
- CPH 404 Fundamentals of Evaluation#(3)
- CPH 405 Biology in Public Health Research and Practice# (3)
- CPH 407 Health Economics and Policy#(3)
- CPH 412 Public Health Approaches to Mental Health Disorders in the US# (3)
- CPH 415 Strategic Planning#(3)
- CPH 418 Introduction to Health Risk Assessment#(3)
- CPH 422 Safety Fundamentals#(3)
- CPH 426 Topics in Environmental Justice#(3)
- CPH 433 Global Health#(3)
- CPH 439 Introduction to Environmental Health Policy#(3)
- CPH 449 Family Violence#(3)
- CPH 457 Food We Eat, Drugs We Take, How We Work and Play--The U.S. Regulatory Agencies# (3)
- CPH 458 Health Care Marketing# (3)
- CPH 459 Special Topics in Public Health# (1-3)
- CPH 478 Maternal and Child Nutrition#(3)
- CPH 479 Infections and Epidemics# (3)
- CPH 484 Fundamentals of Industrial and Environmental Health#(3)
- CPH 487 Feminist Interpretations of Health (3)
- CPH 489 Public Health Preparedness#(3)
- CPH 493B (Elective) Internship in Public Health# (1-6)
- CPH 497E Public Health for Community Wellness# (2)
- CPH 497G Open Airways for Schools # (1)
- CPH 497S Skin Cancer Prevention in the Community Setting# (1-2)

\*Some elective courses may have additional prerequisites.

**#Admission to minor required prior to enrollment.**

# Accelerated BS & MPH Environmental & Occupational Health

Kelly Reynolds, PhD, MSPH – *Section Chair*

**Faculty:** Paloma Beamer, PhD; Jefferey Burgess, MD, MS, MPH; Robert Canales, PhD, MS; Stephanie Griffin, PhD, CIH; Philip Harber, MD, MPH; Eric Lutz, PhD, CMSP; Mary Kay O'Rourke, PhD; Terry Stobbe, PhD, CIH, CSP, CPE

The Environmental Health Sciences Section has developed an accelerated five-year Bachelor of Science to Master of Public Health Degree option for exceptional students.

Students have the potential to experience the breadth of public health in the bachelors program and focus on gaining environmental and occupational health (EOH) expertise in the Master of Public Health program. The combined, structured degree enables students to carefully choose electives that prepare them for the advanced courses and provide a broader exposure to EOH in 5 years instead of the 6 years that would be required to complete the degrees separately.

EOH specialists focus on the exposure of people to physical, biological and chemical hazards in the environment or workplace and their impact on health. Students can focus on either industrial hygiene or a broader environmental and occupational health track. The accelerated program covers the same information and addresses the same competencies as the two separate degrees. Students can replace elementary level courses in the bachelor program with deeper expertise provided in the master level coursework.

Students apply to the Public Health major after completion of 56 units of specified courses. Students apply to the combined, accelerated MPH program after completing 75 credit hours of undergraduate work including at least a semester of organic chemistry, calculus and physics. A full year of calculus and organic chemistry is preferred. A GPA of 3.3 or greater during the first two years of the undergraduate curriculum is required. Students are accepted following completion of 90 undergraduate credit hours. Students will begin the MPH curriculum their senior year as an undergraduate. As with the MPH, the internship is initiated during the summer between the first (senior) and second year of the MPH degree. The final report is due the last semester in the program.



**Curriculum - Accelerated BSPH/MPH Degree**  
**EOH-Industrial Hygiene or Environmental Health Concentration**

| Sem                                                                                                                                      | Course                                                | Units |
|------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|-------|
| <b>Incoming AP Courses Accepted</b>                                                                                                      |                                                       |       |
|                                                                                                                                          | Calculus, Language, Biology, Chemistry, Physics       |       |
| <b>1st Semester (16 credits)</b>                                                                                                         |                                                       |       |
| 1                                                                                                                                        | English I                                             | 3     |
| 1                                                                                                                                        | Math 125                                              | 3     |
| 1                                                                                                                                        | Chem 151                                              | 4     |
| 1                                                                                                                                        | Language or Elective (2 <sup>nd</sup> semester proof) | 3     |
| 1                                                                                                                                        | NSC 101 - Introduction to Human Nutrition             | 3     |
| <b>2nd Semester (19 credits)</b>                                                                                                         |                                                       |       |
| 2                                                                                                                                        | Tier 1 General Elective                               | 3     |
| 2                                                                                                                                        | English II                                            | 3     |
| 2                                                                                                                                        | Math 129                                              | 3     |
| 2                                                                                                                                        | Chem 152                                              | 4     |
| 2                                                                                                                                        | Additional Tier 1 General Elective                    | 3     |
| 2                                                                                                                                        | Additional Tier 1 General Elective                    | 3     |
| <b>Summer (3 credits)</b>                                                                                                                |                                                       |       |
|                                                                                                                                          | MCB 181R General Biology+ Tier 1 or 2                 | 6     |
| <b>3rd Semester (19 credits)</b>                                                                                                         |                                                       |       |
| 3                                                                                                                                        | Tier 1 General Elective                               | 3     |
| 3                                                                                                                                        | Tier 2 General Elective                               | 3     |
| 3                                                                                                                                        | Organic Chem. 241a                                    | 3     |
| 3                                                                                                                                        | Organic Lab 243a                                      | 2     |
| 3                                                                                                                                        | PSIO 201 Anat and Physio                              | 4     |
| 3                                                                                                                                        | CPH 178 Personal Health & Wellness                    | 3     |
| 3                                                                                                                                        | MCB 184 Lab                                           | 1     |
| <b>4th Semester (18 credits)</b>                                                                                                         |                                                       |       |
| 4                                                                                                                                        | Tier 2 General Elective                               | 3     |
| 4                                                                                                                                        | PSIO 202 Anat and Physio                              | 3     |
| 4                                                                                                                                        | CPH 200 Intro to Public Health                        | 3     |
| 4                                                                                                                                        | CPH 309 Intro to Epidemiology                         | 3     |
| 4                                                                                                                                        | Physics 141                                           | 3     |
| 4                                                                                                                                        | XXX XXX elective                                      | 3     |
| <b>75 Units by the end of year 2 and application to Public Health Major &amp; Accelerated Program during the 4<sup>th</sup> Semester</b> |                                                       |       |

| Sem                                                                                                           | Course                                                            | Units |
|---------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------|-------|
| <b>5<sup>th</sup> Semester (18 credits)</b>                                                                   |                                                                   |       |
| 5                                                                                                             | CPH 310 Health care in the US                                     | 3     |
| 5                                                                                                             | CPH 350 Principles of Health Education                            | 3     |
| 5                                                                                                             | CPH 375 Intro to Enviro & Occ Health                              | 3     |
| 5                                                                                                             | CPH XXX Selective                                                 | 3     |
| 5                                                                                                             | CPH XXX Selective                                                 | 3     |
| 5                                                                                                             | CPH XXX Selective                                                 | 3     |
| <b>93 units for acceptance and start of the MPH with a 3.3 GPA</b>                                            |                                                                   |       |
| <b>6<sup>th</sup> Semester (15 Credits)</b>                                                                   |                                                                   |       |
| 6                                                                                                             | CPH 433 Global Health (309 are prereqs)                           | 3     |
| 6                                                                                                             | CPH 478 PH Nutrition (350 and 309 are prereqs)                    | 3     |
| 6                                                                                                             | Eng 308                                                           | 3     |
| 6                                                                                                             | CPH 493A internship                                               | 6     |
| <b>End of Year 3 = 108 hrs (plus 12 credits of year 4 graduate work can be counted in both programs)</b>      |                                                                   |       |
| <b>7<sup>th</sup> Semester (12 Grad Credits)</b>                                                              |                                                                   |       |
| 7                                                                                                             | CPH 573a Epidemiology                                             | 3     |
| 7                                                                                                             | CPH 576a Biostatistics                                            | 3     |
| 7                                                                                                             | CPH 502 Env Monitoring Methods                                    | 3     |
| 7                                                                                                             | CPH 584 Fundamentals of Industrial Hygiene & Environmental Health | 3     |
| <b>Student graduates with a BSPH 120 hours</b>                                                                |                                                                   |       |
| <b>8<sup>th</sup> Semester (13 Grad Credits)</b>                                                              |                                                                   |       |
| 8                                                                                                             | CPH 574 Public Health Policy & Management                         | 3     |
| 8                                                                                                             | CPH 553 Toxicol & Chem Exposures (or EHS track approved course)   | 3     |
| 8                                                                                                             | CPH 655 Control of Occ Exposure (or EHS track approved course)    | 3     |
| 8                                                                                                             | CPH 575 Environmental & Occupational Health                       | 3     |
| 8                                                                                                             | CPH 696r EHS Seminar                                              | 1     |
| 8                                                                                                             | Internship Prep Training                                          | 0     |
| <b>8a Summer (2 Grad Credit hours) - Summer Internship (CPH 909 1 unit) and Research (CPH 900 1 Unit) TBA</b> |                                                                   |       |
| <b>9<sup>th</sup> Semester (9 Grad Credits)</b>                                                               |                                                                   |       |
| 9                                                                                                             | CPH 577 Sociocultural & Behavioral Aspects of Public Health       | 3     |
| 9                                                                                                             | CPH 522 Safety Fundamentals (or EHS track approved course)        | 3     |
| 9                                                                                                             | CPH 696r Seminar                                                  | 1     |
| 9                                                                                                             | CPH 900 Thesis                                                    | 2     |
| <b>10<sup>th</sup> Semester (9 Grad Credits)</b>                                                              |                                                                   |       |
| 10                                                                                                            | CPH 653 Applied Exposure Assessment                               | 3     |
| 10                                                                                                            | CPH 510 Physical Exposures (or EHS track approved course)         | 3     |
| 10                                                                                                            | CPH 696r EHS Seminar                                              | 1     |
| 10                                                                                                            | CPH 909 Internship & Report                                       | 2     |
| <b>Student Graduates with MPH (total BSPH + MPH = 155 Credit Hours including 2 internships)</b>               |                                                                   |       |

# Master of Public Health

The Master of Public Health (MPH) degree is designed to be an interdisciplinary, graduate, professional degree in public health. The program provides opportunities for students to obtain broad knowledge and basic skills in the core areas of public health. Students are able to acquire proficiency in one or more specialized areas through advanced coursework, and gain experience in applying advanced knowledge to the solution of actual health problems in community settings during internship training.

The mission of the MPH program is to prepare students to assume public health leadership roles in the identification of community health problems, and in the planning, implementation and evaluation of programs and policies essential for the promotion of health and the alleviation of illness and disease. The MPH program is designed to meet the particular needs of the Southwestern United States, with emphasis on rural and urban medically underserved populations, including Hispanics, Native Americans, and other ethnic minority populations.

The MPH Program blends the strengths and experiences of the medical and health-related programs of The University of Arizona and the community health agencies of Arizona to provide a program of sufficient breadth and depth to offer high quality community-oriented graduate public health education.



# Master of Public Health (MPH) Concentrations



The UA Zuckerman College of Public Health offers a MPH program in which students acquire a sound academic background for competent practice in the field of public health. The MPH program is a two year program for full-time students; part-time students may take up to six years to complete the program. MPH students are required to select one of the eight concentration areas listed below. Dual degree options are also available, including the MD/MPH with the College of Medicine, the JD/MPH with the College of Law, the MBA/MPH with Eller College of Management, the MPH/MA in Latin American Studies, and the MPH/MS in Mexican American Studies.

## **Biostatistics**

The Biostatistics area of study's educational objective is to prepare individuals to apply statistical methods to the solution of problems encountered in such fields as public health, medicine, nursing, pharmacy and dentistry. They collaborate with scientists and investigators in nearly every area related to health, and have made major contributions to our understanding of diseases such as AIDS, cancer, and coronary heart disease.

## **Environmental and Occupational Health**

The Environmental and Occupational Health area of study prepares individuals to evaluate and control health risks posed by chemical and biological contaminants and physical exposures (noise, heat and radiation) in occupational and community environments. Those interested in industrial hygiene may be eligible to receive funds through the NIOSH training program. Faculty members have experience in industrial hygiene, occupational and environmental health, safety, ergonomics, toxicology, microbiology, exposure modeling, occupational and preventive medicine, environmental sciences, engineering and epidemiology.

## **Epidemiology**

Epidemiology is a fundamental science of public health with a major focus on health problems in communities, groups, or aggregates of people. Individuals who choose this concentration will have the opportunity to acquire knowledge, skills and experiences for measuring and studying the distributions, characteristics, causes, and prevention of disease, disability, and premature death in humans. The Epidemiology concentration prepares students to work proficiently with tasks related to epidemiological study design, data collection, data analysis, and study presentations in public health.

## **Family and Child Health**

The Family and Child Health (FCH) area of study provides students with the history and current status of the socioeconomic, cultural, political and physiological issues that affect women, children and families. Students entering the FCH concentration must choose a plan of work in one of two specialized areas: maternal and child health or global health. Those interested in maternal and child health may be eligible to receive funds through the MCHB training program. All students in the FCH area of study will take a set of courses that focus on maternal and child health issues, government policies affecting women and children, adolescent health, and nutrition.

### **Health Behavior Health Promotion**

The Health Behavior Health Promotion (HBHP) concentration is founded on a philosophy of health education, health promotion, and disease prevention to improve the quality of life of individuals, families and communities. HBHP focuses on sociocultural factors that influence health and health behavior; scientific and theoretical bases for planning, implementing, and evaluating effective public health education, health promotion and disease prevention programs; and the goal of facilitating behavior change for healthy life.

### **Health Services Administration (Tucson and Phoenix Campuses)**

The Health Services Administration (HSA) concentration is a unique combination of public health and health care administration courses, which will provide individuals with the tools they need to understand the multifaceted administrative and business aspects of health care. The Health Services Administration curriculum is comprised of specifically targeted courses, with a goal to graduate highly qualified health care administrators.

### **Public Health Policy and Management**

The Public Health Policy and Management area of study prepares leaders of public and private health systems to manage effectively and to create and implement policies that promote the public's health. The concentration develops skills in management and leadership, policy analysis and formulation, strategic and financial planning, health services administration and evaluation for all levels of practice, including local/community, state, national and international settings. Consistent with the College's focus on community participation and development, the curriculum emphasizes community partnership in all aspects of public health policy development and program management.

### **Public Health Practice (Based at the Phoenix Campus)**

The MPH in Public Health Practice prepares students to work effectively as part of multidisciplinary teams to develop, manage and evaluate public health programs that are appropriate for decreasing health disparities. Coursework includes: core areas of public health and skills in the administration and fiscal management of programs within diverse populations.



# Master of Public Health Degree Requirements

The Master of Public Health (MPH) degree is comprised of core courses, required concentration courses, elective courses, and an internship. Each student also will be required to produce a comprehensive, analytical, problem solving report integrating the in-class learning with an internship experience. An oral presentation of the material before a student and faculty colloquium, reporting on activities during the internship and relating those activities to broader public health issues is required. Detailed information on the requirements for each concentration area follows.



# Biostatistics



Denise Roe, DrPH – **Section Chair**

**Faculty:** Melanie Bell, PhD; Dean Billheimer, PhD; Z. John Daye, PhD; Angelika Gruessner, PhD; Paul Hsu, PhD; Chengcheng Hu, PhD; Duane Sherrill, PhD, Professor Emeritus; Jin Zhou, PhD

The MPH program in Biostatistics is offered by the Department of Epidemiology and Biostatistics. The educational objective of the MPH degree in Biostatistics is to prepare individuals to work effectively as biostatisticians in a variety of public health, epidemiological and clinical research settings. Candidates for admission may come from medical and public health backgrounds. Applicants should possess 1) a demonstrated interest and/or experience in the area of biostatistics, 2) in the case of a deficient overall GPA, evidence that recent performance significantly exceeds the past average, and 3) evidence of personal qualities that suggest the ability to commit and succeed in the course of studies. While courses in statistics are not required as prerequisites, students should have had college level calculus and/or linear algebra.

## **MPH Biostatistics Total Minimum Credit Requirements (42 units)**

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### **Required Core Courses (15 units)**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics in Public Health (3)                              |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required</b> ; non-credit) |

### **Required Biostatistics Courses (18 units)**

|          |                                                      |
|----------|------------------------------------------------------|
| CPH 576B | Biostatistics for Research (3)                       |
| CPH 576C | Applied Biostatistics Analysis (3)                   |
| CPH 576D | Data Management and the SAS Programming Language (3) |
| CPH 647  | Analysis of Categorical Data (3)                     |
| CPH 909  | Master's Report "Internship" (6)                     |

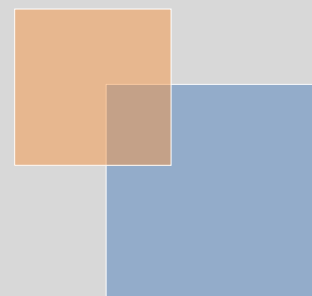
### **Elective Courses (minimum 9 units)** – Approved by Faculty Mentor

At least 6 units from the following courses:

|         |                                              |
|---------|----------------------------------------------|
| CPH 648 | Analysis of High Dimensional Data (3)        |
| CPH 675 | Clinical Trials and Intervention Studies (3) |
| CPH 684 | General Linear and Mixed Effects Models (3)  |
| CPH 686 | Survival Analysis (3)                        |

### **Other elective courses:**

|           |                                              |
|-----------|----------------------------------------------|
| CPH 677   | Genetic Association Studies (3)              |
| CPH 685   | Special Topics in Biostatistics (3)          |
| STAT 571A | Advanced Statistical Regression Analysis (3) |
| STAT 571B | Design of Experiments (3)                    |
| STAT 675  | Statistical Computing (3)                    |



## Recommended Course Sequencing

### First Year

|                      |                                         |
|----------------------|-----------------------------------------|
| <u>Fall Semester</u> | (9 units)                               |
| CPH 576A*            | Biostatistics in Public Health (3)      |
| CPH 573A *           | Basic Principles of Epidemiology (3)    |
| CPH 575*             | Environmental & Occupational Health (3) |

|                        |                                                                 |
|------------------------|-----------------------------------------------------------------|
| <u>Spring Semester</u> | (9 units)                                                       |
| CPH 576B               | Biostatistics for Research (3)                                  |
| CPH 574*               | Public Health Policy & Management (3)                           |
| CPH 577*               | Sociocultural & Behavioral Aspects of Public Health (3)         |
|                        | Internship Preparation Workshop ( <b>required</b> ; non-credit) |

### Second Year

|                      |                                                      |
|----------------------|------------------------------------------------------|
| <u>Fall Semester</u> | (12 units)                                           |
| CPH 576C             | Applied Biostatistics Analysis (3)                   |
| Elective(s)          | (approved by Faculty Mentor) (6)                     |
| CPH 576D             | Data Management and the SAS Programming Language (3) |

|                        |                                  |
|------------------------|----------------------------------|
| <u>Spring Semester</u> | (12 units)                       |
| CPH 647                | Analysis of Categorical Data (3) |
| CPH 909 §              | Master's Report "Internship" (6) |
| Elective               | (approved by Faculty Mentor) (3) |

\*MPH required core courses are offered fall & spring semesters, allowing flexibility

**§ CPH 909 Master's Report "Internship" – Prerequisite Courses:** At least 3 MPH core courses and CPH 576A and CPH 576B. CPH 909 may be taken in one or more semesters and the credits may be split across semesters. **Note:** The final internship report may not be completed until the semester following the completion of all five MPH core classes. All five core courses must be completed prior to the student's final semester.



# Environmental and Occupational Health



Kelly Reynolds, PhD, MSPH – **Section Chair**

**Faculty:** Paloma Beamer, PhD; Jeff Burgess, MD, MS, MPH; Robert Canales, PhD, MS; Philip Harber, MD, MPH; Eric Lutz, PhD, CMSP; Mary Kay O'Rourke, PhD; Mary Poulton, PhD; Terry Stobbe, PhD, CIH, CSP, CPE

The MPH degree in Environmental and Occupational Health (EOH) is offered by the Department of Community, Environment and Policy. There are two tracks available for students to pursue: Environmental and Occupational Health (EOH) and the ABET accredited Industrial Hygiene (IH) track. Both tracks prepare individuals to evaluate and control health risks posed to communities and workers by chemical/biological contaminants and physical exposures.

Our faculty has expertise in: occupational safety, toxicology, occupational medicine, ergonomics, industrial hygiene, epidemiology, microbiology, environmental science, environmental modeling and engineering, exposure and risk assessment. As part of the coursework, students perform both an internship and a research project. Students will work with a faculty mentor to develop an individualized plan of study that best meets personal professional goals.

The EOH track provides flexibility in selection of electives and emphasis areas, and requires 42 credit hours for completion. The IH track provides a greater focus on worker protection. Additional courses are required and the track requires 45 credit hours. Those interested in worker protection may be eligible to receive funds through the NIOSH training program.

Students selecting the EOH concentration area should have a strong background in the basic sciences. In addition to the general admission requirements for the MPH, inorganic chemistry is required for admission to the EOH track, and organic chemistry is highly recommended. Students interested in the [MPH-Industrial Hygiene track](#) must have one year of calculus, one year of inorganic chemistry, one semester of organic chemistry and one semester of physics, in addition to the general MPH admission requirements. Additional coursework is required for the ABET accredited IH track.

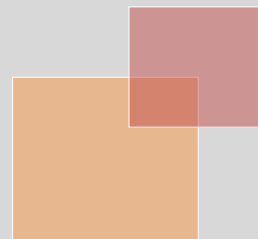
## **MPH Environmental and Occupational Health - Total Minimum Credit Requirements**

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- ❖ **Environmental and Occupational Health (EOH) Track (42 units)**
- ❖ **Industrial Hygiene (IH) Track (45 units)**

### **Required Core Courses for both tracks (15 units)**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics in Public Health (3)                              |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required</b> ; non-credit) |



**Required EOH Courses for both tracks (18 units)**

|          |                                                                        |
|----------|------------------------------------------------------------------------|
| CPH 502  | Environmental Monitoring and Analysis (3)                              |
| CPH 584  | Fundamentals of Industrial and Environmental Health (3)                |
| CPH 653  | Applied Exposure Assessment (3)                                        |
| CPH 696R | Environmental & Occupational Health Seminar (1 unit – <b>3 times</b> ) |
| CPH 900  | Research – EOH or IH (3)                                               |
| CPH 909  | Master's Report "Internship" (3)                                       |

**Required Courses for the Industrial Hygiene (IH) Track (12 units)**

|         |                                       |
|---------|---------------------------------------|
| CPH 510 | Physical Exposures (3)                |
| CPH 522 | Safety and Ergonomic Fundamentals (3) |
| CPH 553 | Toxicology and Chemical Exposures (3) |
| CPH 655 | Control of Occupational Exposures (3) |

**Elective Courses for the Environmental and Occupational Health (EOH) Track  
(Minimum 9 units)**

|         |                                                                                   |
|---------|-----------------------------------------------------------------------------------|
| CPH 510 | Physical Exposures (3)                                                            |
| CPH 518 | Introduction to Human Health Risk Assessment (3)                                  |
| CPH 522 | Safety and Ergonomic Fundamentals (3)                                             |
| CPH 539 | Introduction to Environmental Health Policy (3)                                   |
| CPH 553 | Toxicology and Chemical Exposure (3)                                              |
| CPH 557 | Food We Eat, Drugs We Take, How We Work and Play – the US Regulatory Agencies (3) |
| CPH 583 | Environmental & Occupational Diseases (3)                                         |
| CPH 589 | Public Health Preparedness (3)                                                    |
| CPH 604 | Modeling Exposures to Environmental Hazards (3)                                   |
| CPH 655 | Control of Occupational Exposures (3)                                             |

(In addition, other cross campus courses may be used as EOH electives; approved by Faculty Mentor)



## MPH - Environmental and Occupational Health – EOH Track Recommended Course Sequencing (odd year program entry)

### First Year

#### Fall Semester (13 units)

- CPH 502 Environmental Monitoring & Analysis (3)
- CPH 573A\* Basic Principles of Epidemiology (3)
- CPH 576A\* Biostatistics in Public Health (3)
- CPH 584 Fundamentals of Industrial & Environmental Health (3)
- CPH 696R Environmental & Occupational Health Seminar (1)

#### Spring Semester (9 units)

- CPH 574\* Public Health Policy and Management (3)
- CPH 575\* Environmental & Occupational Health (3)
- Selective Course - Approved by Faculty Mentor@ (3)
- CPH 696R Environmental & Occupational Health Seminar (0)
- Internship Preparation Workshop (**required**; non-credit)

#### Summer Session following Year 1:

#Begin CPH 909 Master's Report "Internship" and/or CPH 900 EOH Research (up to 2 units)

### Second Year

#### Fall Semester (9 units)

- CPH 577\* Sociocultural & Behavioral Aspects of Public Health (3)
- CPH 696R Environmental & Occupational Health Seminar (1)
- CPH 900 Complete EOH Research from Summer Session (2)
- Selective Course - Approved by Faculty Mentor@ (3)

#### Spring Semester (9 units)

- CPH 653 Applied Exposure Assessment (3) §
- CPH 909 Master's Report (Internship) (2)
- CPH 696R Environmental & Occupational Health Seminar (1)
- Selective Course - Approved by Faculty Mentor@ (3)

\*MPH required core courses are offered fall & spring semesters, allowing flexibility.

@Contact your Faculty Mentor for a list of **selective courses** appropriate to your interest area.

§Make sure you consider course delivery by year (**some courses only have even or odd year offerings**).

#Internship may not be initiated until 3 core classes have been completed plus CPH 502 and CPH 584. The final internship report may not be completed until the semester following the completion of all five core classes.

## **MPH - Environmental and Occupational Health – *Industrial Hygiene Track***

### **Recommended Course Sequencing (odd year program entry)**

#### **First Year**

##### Fall Semester (13 units)

- CPH 502 Environmental Monitoring & Analysis (3)
- CPH 573A\* Basic Principles of Epidemiology (3)
- CPH 576A\* Biostatistics in Public Health (3)
- CPH 584 Fundamentals of Industrial & Environmental Health (3)
- CPH 696R Environmental & Occupational Health Seminar (1)

##### Spring Semester (12 units)

- CPH 574\* Public Health Policy and Management (3)
- CPH 575\* Environmental & Occupational Health (3)
- CPH 553 Toxicology and Chemical Exposure (3) §
- CPH 655 Control of Occupational Exposures (3) §
- CPH 696R Environmental & Occupational Health Seminar (0)
- Internship Preparation Workshop (**required**; non-credit)

##### Summer Session following Year 1:

#Begin CPH 909 Master's Report "Internship" and/or CPH 900 Research (up to 2units)

#### **Second Year**

##### Fall Semester (9 units)

- CPH 522 Safety and Ergonomic Fundamentals (3)
- CPH 577\* Sociocultural & Behavioral Aspects of Public Health (3)
- CPH 696R Environmental & Occupational Health Seminar (1)
- CPH 900 Complete EOH Research from Summer Session (2)

##### Spring Semester (9 units)

- CPH 510 Physical Exposures and Ergonomics (3) §
- CPH 653 Applied Exposure Assessment (3) §
- CPH 696R Environmental & Occupational Health Seminar (1)
- CPH 909 Master's Report (Internship) (2)#

\*MPH required core courses are offered fall & spring semesters, allowing flexibility.

§ Make sure you consider course delivery by year (**some courses only have even or odd year offerings**).

#Internship may not be initiated until 3 core classes have been completed plus CPH 502 and CPH 584. The final internship report may not be completed until the semester following the completion of all five core classes.

# Epidemiology

Elizabeth Jacobs, PhD – **Section Chair**

**Faculty:** Heidi Brown, PhD, MPH; Zhao Chen, PhD, MPH; Leslie Dennis, MS, PhD; Kacey Ernst, PhD, MPH; Janet Foote, PhD; Robin Harris, PhD, MPH; Yann Klimentidis, PhD; Eyal Oren, PhD; Sydney Pettygrove, PhD; Kristen Pogreba Brown, PhD, MPH; Eyal Shahar, MD, MPH

The MPH in Epidemiology is offered by the Department of Epidemiology and Biostatistics. Epidemiology is a fundamental science of public health with a major focus on health problems in communities, groups, or aggregates of people.

The Epidemiology concentration curriculum provides systematic training in epidemiological principles, methods, and practices through constructive coursework and an internship. Individuals who choose the epidemiology concentration will have the opportunity to acquire knowledge, skills and experiences for measuring and studying the distributions, characteristics, causes, and prevention of disease, disability, and premature death in humans.

Students accepted into this discipline should have a good background in the biological sciences and mathematics. In addition to the general admission requirements for the MPH program, other factors considered in the determination of a candidate's potential for success in the epidemiology concentration area are long range goals and commitment to both public health and epidemiology; experience/interest in applying epidemiological principles to public health; and work and volunteer experience in epidemiology.

## **MPH Epidemiology Total Minimum Credit Requirements (44 units)**

---

### **Required Core Courses (15 units)**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics in Public Health (3)                              |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required</b> ; non-credit) |

### **Required Epidemiology Courses (26 units)**

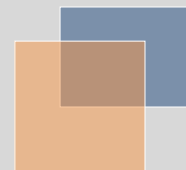
|          |                                                                   |
|----------|-------------------------------------------------------------------|
| CPH 573B | Epidemiologic Methods (3)                                         |
| CPH 573C | Advanced Epidemiology (3)                                         |
| CPH 576B | Biostatistics for Research (3)                                    |
| CPH 596D | Public Health Experience – Student Epidemiology Response Team (2) |
| CPH 696A | Epidemiology Seminar (1 unit – <b>2 times</b> )                   |
| CPH 909  | Master's Report "Internship" (4)                                  |

### **Complete 3 Selective Epidemiology courses (minimum 9 units) from the following courses:**

|           |                                               |
|-----------|-----------------------------------------------|
| EPID 615A | Cancer Epidemiology & Prevention (3)          |
| EPID 630  | Maternal and Child Health Epidemiology (3)    |
| EPID 645  | Nutritional Epidemiology (3)                  |
| EPID 646  | Measurement Issues in Epidemiology (3)        |
| EPID 660  | Infectious Disease Epidemiology (3)           |
| EPID 670  | Chronic Disease Epidemiology (3)              |
| EPID 671  | Social Epidemiology (3)                       |
| EPID 676  | Spatial Epidemiology (3)                      |
| EPID 677  | Principles of Genetic Association Studies (3) |

### **Elective Courses (minimum 3 units)** – Approved by Faculty Advisor/Mentor

## Recommended Course Sequencing



### First Year

#### Fall Semester (12 units)

CPH 573A\* Basic Principles of Epidemiology (3)

CPH 576A\* Biostatistics in Public Health (3)

**Note:** Many MPH students tell us they wish they knew more about SAS; the CPH 576A with SAS conflicts with CPH 696A Epidemiology Seminar. If you take CPH 576A with STATA, take CPH 696A Epidemiology Seminar (1)

CPH 574\* Public Health Policy & Management (3)

**or** CPH 575\* Environmental & Occupational Health (3)

CPH 577\* Sociocultural & Behavioral Aspects of Public Health (3)

#### Spring Semester (13 units)

CPH 573B\*\* Epidemiologic Methods (3)

CPH 576B\*\*\* Biostatistics for Research (3)

CPH 575\* Environmental & Occupational Health (3)

**or** CPH 574\* Public Health Policy & Management (3)

EPID 6xx Selective Epidemiology Course # 1: 645, 660+, 670, 676, 677 (3)

CPH 696A\*\* Epidemiology Seminar (1)

Internship Preparation Workshop (**required**; non-credit)

#### Summer Semester (1 unit)

CPH 909 § Master's Report "Internship" (1-2; typically 1)

To conduct the internship, you must be enrolled.



### Second Year

#### Fall Semester (10 units)

CPH 573C\*\*\* Advanced Epidemiology (3)

EPID 6xx Selective Epidemiology Course #2: 615 (odd yrs.), 630, 646 (even yrs.), 671 (3) **Or**  
CPH 596D\*\* Public Health Experience – Student Epidemiology Response Team (2)

Elective (Approved by Faculty Mentor) (3)

CPH 696A Epidemiology Seminar (1)

CPH 909 § Master's Report "Internship" (0-2; typically 0)

#### Spring Semester (7-9 units)

EPID 6xx Selective Epidemiology Course #3: 645, 660+, 670, 676, 677 (3)

EPID 6xx Selective Epidemiology Course **Or**  
CPH 596D\*\* Public Health Experience – Student Epidemiology Response Team (2)

CPH 696A Epidemiology Seminar (1)

CPH 909 § Master's Report "Internship" (1-3; often 3)

\*MPH required core courses are offered fall & spring semesters, allowing flexibility

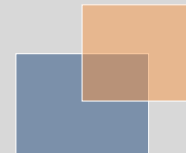
\*\*This course is offered both fall and spring semesters

\*\*\* This course only offered in this specific semester; **not** in both fall and spring semesters.

§ **CPH 909 Master's Report "Internship" – Prerequisite Courses:** At least 3 MPH core courses, CPH 573B, and CPH 576B before starting internship & all 5 MPH core courses must be completed before your last semester, when you finalize writing your Internship Report. CPH 909 typically is taken in multiple semesters with the credit hours split across semesters.

+ **NOTE:** Students planning an infectious disease related MPH Internship are encouraged to take EPID 660 spring year 1. CPH 660 and CPH 577 are offered during the same time slot during the spring semester; plan accordingly.

# Family and Child Health



*Nicolette Teufel-Shone, PhD – Section Chair*

**Faculty:** Christina Cutshaw, PhD, Burris “Duke” Duncan, MD; John Ehiri, PhD, MPH, MSc; Francisco Garcia, MD, MPH; Lynn Gerald, PhD, MSPH; Iman Hakim, MBBCh, PhD, MPH; Mary Koss, PhD; Velia Leybas Nuno, PhD, MSW; Irma Ramos, MD; Douglas Taren, PhD

The MPH degree in Family and Child Health is offered by the Department of Health Promotion Sciences. The Family and Child Health Concentration (FCH) provides students a curriculum that addresses the history and current status of the socioeconomic, cultural, political and physiological issues that affect the health of women, children, and families. Students entering the FCH concentration must choose a plan of work in one of two specialized areas: Maternal and Child Health (MCH) or Global Health. All students in the FCH concentration will take a set of courses that focus on maternal and child health issues, government policies affecting women and children, adolescent health, and nutrition. In addition, each student, under the guidance of a faculty mentor, will develop an individualized plan of study for his or her specialized area of interest.

In addition to the general admission requirements for the MPH Program, factors considered in the determination of a candidate’s potential for success in the FCH concentration include work or volunteer experience in the area of maternal and child health. The FCH concentration encourages a variety of health care professionals to apply to this program, including nurses, nutritionists, social workers, and physicians. Students with backgrounds in a variety of social sciences who have public health experience outside of FCH are also encouraged to apply.

## **MPH Family Child Health Total Minimum Credit Requirements**

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- ❖ **Maternal Child Health Track (44 units)**
- ❖ **Global Health Track (47 units)**

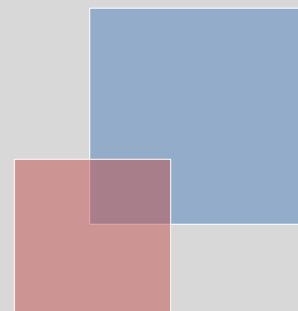
### **Required Core Courses (15 units)**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics in Public Health (3)                              |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required</b> ; non-credit) |

### **Maternal and Child Health Track Requirements:**

#### **Required MCH Courses (23 units)**

|          |                                                                                     |
|----------|-------------------------------------------------------------------------------------|
| CPH 586  | Maternal and Child Health (3)                                                       |
| CPH 630  | Maternal and Child Health Epidemiology (3)                                          |
| CPH 696H | Maternal & Child Health/Public Health Seminar (1)                                   |
| CPH 596E | Health Education/Behavioral Leadership Course (2)                                   |
| CPH 588  | Adolescent Health (3)                                                               |
|          | <b>OR</b> CPH 549 Family Violence (3)                                               |
|          | <b>OR</b> CPH 512 Public Health Approach to Mental Health Disorders in the U.S. (3) |



One Planning and/or Evaluation Course (from approved list – consult with Faculty Mentor) (3)  
CPH 597# Select Two Service Learning Courses (2)  
CPH 909 Master's Report "Internship" (6)

**Elective Courses** (minimum 6 units required) – Approved by Faculty Mentor (6)

**Global Health Track Requirements:**

**Required Global Health Courses** (26 units)

CPH 533 Global Health (3)  
CPH 560 International Nutrition (3)  
CPH 586 Maternal and Child Health (3)  
CPH 630 Maternal and Child Health Epidemiology (3)  
**OR** CPH 645 Nutritional Epidemiology (3)  
**OR** CPH 660 Infectious Disease Epidemiology (3)  
CPH 606 Changing Health Policy: Cultural Understanding & Epi Analysis (4)  
CPH 696H Maternal and Child Health/Public Health Seminar (1)  
One Planning and/or Evaluation Course (from approved list – consult with Faculty Mentor) (3)  
CPH 909 Master's Report "Internship" (6)

**Elective Courses** (minimum 6 units required) – Approved by Faculty Mentor (6)



## Recommended Course Sequencing – MPH Maternal & Child Health Track

This course sequencing schedule is only a recommendation. The schedule was designed so that the 4th semester would consist solely of internship hours thus allowing a student to engage in an internship project outside of Tucson. Students and advisors may opt to create a schedule that better suits student strengths and interests.

### ***First Year***

#### Fall Semester (13 units)

- CPH 573A\* Basic Principles of Epidemiology (3)
- CPH 577\* Sociocultural & Behavioral Aspects of Public Health (3)
- CPH 586 Maternal & Child Health (3)
- CPH 576A\* Biostatistics in Public Health (3)
- CPH 696H Maternal & Child Health/Public Health Seminar (1)

#### Spring Semester (11 units)

- CPH 588 Adolescent Health (3) **OR**  
CPH 512 Public Health Approach to Mental Health Disorders in the U.S. (3)
- CPH 575\* Environmental & Occupational Health (3)
- CPH 596E Health Education/Behavioral Leadership Course (2)
- CPH 630 Maternal & Child Health Epidemiology (3)
- One Planning/Evaluation Course (approved by Faculty Mentor) (3)

Service Learning Courses – CPH 597# (2 units)

### ***Second Year***

#### Fall Semester (12 units)

- CPH 630 Maternal & Child Health Epidemiology (3)
- CPH 574\* Public Health Policy & Management (3)
- Elective (approved by Faculty Mentor) (3)
- Elective (approved by Faculty Mentor) (3)
- Internship Preparation Workshop (**required**; non-credit)

#### Spring Semester (6 units)

- CPH 909\*\* Master's Report "Internship" (6)

\*MPH Core Courses are offered fall & spring semesters, allowing flexibility

**\*\*Prerequisites for CPH 909 – Master's Report "Internship" - MCH Track:**

At least 3 MPH core courses; CPH 586, Maternal and Child Health; CPH 630, MCH Epidemiology and (1) Planning & Evaluation Course.

# Approved Service Learning Courses are listed as CPH 597 A-G & S.

Service Learning courses are offered all semesters. Please consult the schedule of classes for exact course dates.

## Recommended Course Sequencing – MPH Global Health Track

This course sequencing schedule is only a recommendation. Students and advisors may opt to create a schedule that better suits student strengths and interests.

### ***First Year***

#### Fall Semester (13 units)

- CPH 573A\* Basic Principles of Epidemiology (3)
- CPH 577\* Sociocultural Aspects of Public Health (3)~
- CPH 576A\* Biostatistics in Public Health (3)
- CPH 586 Maternal & Child Health (3)
- CPH 696H MCH/Public Health Seminar (1)

#### Spring Semester (12 units)

- CPH 533 Global Health (3)
- CPH 574\* Public Health Policy & Management (3) **Or**  
Elective (approved by Faculty Mentor) (3)
- CPH 575\* Environmental & Occupational Health (3)
- CPH 560 International Nutrition (3)#

**#Note:** (Dynamically dated hybrid course: *begins in April online, during the Spring semester, and carryovers into Summer Presession- face to face: consult the spring schedule of classes for specific spring course dates*).

Internship Preparation Workshop (**required; non-credit**)

### ***Second Year***

#### Fall Semester (13 units)

- CPH 630 Maternal & Child Health Epidemiology (3) **or**  
CPH 645 Nutritional Epidemiology (3) (spring offering) **or**  
CPH 660 Infectious Disease Epidemiology (3) (spring offering)~
- CPH 606 Changing Health Policy: Cultural Understanding & Epi Analysis (4)  
Planning/Evaluation Course (approved by Faculty Mentor) (3)  
Elective (approved by Faculty Mentor) (3)

#### Spring Semester (9 units)

- CPH 909\*\* Master's Report "Internship" (6)  
Elective (approved by Faculty Mentor) (3)



\*MPH required core courses are offered fall & spring semesters, allowing flexibility

~CPH 660 cannot be taken in same semester as CPH 577 due to course time conflict.

**\*\*Prerequisites for CPH 909 – Master's Report "Internship" - Global Health Track:**

At least 3 MPH core courses; CPH 586, Maternal and Child Health; CPH 533, Global Health and (1) Planning and Evaluation Course.

# Health Behavior Health Promotion

*Scott Carvajal PhD, MPH – Section Chair*

**Faculty:** Richard Carmona, MD, MPH; Patricia Haynes, PhD; Brent Langellier, PhD; Sheila Parker, DrPH; Kerstin Muller Reinschmidt, PhD, MPH; Cynthia Thomson, PhD, RD, CSO; Ronald Watson, PhD; Nicole Yuan, PhD

The MPH in Health Behavior Health Promotion (HBHP), offered by the Department of Health Promotion Sciences, is based on a philosophy of health education, health promotion, and disease prevention, to improve the quality of life of individuals, families and communities. The HBHP discipline focuses on three areas:

1. Sociocultural factors that influence health and health behavior;
2. Scientific and theoretical basis for planning, implementing, and evaluating effective public health education, health promotion and disease prevention programs; and
3. The goal of facilitating behavior change for healthy life.

The program provides students with the opportunity to acquire the knowledge and skills that are essential for the promotion of health and prevention of disease in culturally diverse populations. Specific competencies that students are expected to acquire include: a working knowledge of sociocultural factors that influence health, an ability to plan culturally appropriate and effective public health interventions, knowledge and skills relating to the application of sociocultural principles to health promotion and disease prevention programs, culturally relevant service delivery that facilitates positively changed health behaviors, and appropriate methods and skills to effectively plan, implement, and evaluate public health programs.

The Health Behavior Health Promotion concentration places a strong emphasis on the following factors in its determination of a candidates' potential for success in the concentration: long range goals and commitment to public health; successful leadership experience or potential; work and volunteer experience related to the concentration's public health focus; demonstrated community service; public health experience or interest; documented experience and/or commitment to underserved areas and populations. The personal statements of students applying for admission to the Health Behavior Health Promotion concentration should include information regarding these factors.

## **MPH HBHP Total Minimum Credit Requirements (44 units)**

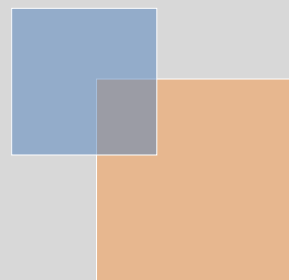
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### **Required Core Courses (15 units)**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics in Public Health (3)                              |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required</b> ; non-credit) |

### **Required HBHP Courses (minimum 29 Units)**

|          |                                                                            |
|----------|----------------------------------------------------------------------------|
| CPH 531  | Contemporary Health Issues and Research (3)                                |
| CPH 532A | Applied Aspects of Program Planning, Implementation, and Evaluation I (4)§ |



CPH 535 Multicultural Health Beliefs (3) §  
CPH 596E Health Education/Behavioral Sciences Leadership Seminar (2)  
CPH 909 Master's Report "Internship" (6) §

**Elective Courses:** (minimum **9 units**): (Approved by Faculty Mentor);  
Also see recommended elective list from HBHP faculty

**#Service Learning Course Requirement:** (minimum **2 units**)

Students are required to take two service-learning courses (1 unit each) for a **total of 2 units** :

**Service Learning Course Options: #**

CPH 597A Maternal & Child Health Programs in Urban Settings(1) (*offered summer II-Tucson*)

CPH 597B Maternal & Child Health Programs in the Rural Southwest (1)  
(*offered summer pre-session - Tucson*)

CPH 597C Border Health Service Learning Institute (1) (*offered summer II - US /Mexico Border*)

CPH 597D Rural Health Service Learning Institute (1) (*offered summerII - location varies*)

CPH 597E Public Health for Community Wellness (2) (*offered fall & spring*)

CPH 597F Phoenix Urban Service Learning (1) (*offered fall - **Phoenix***)

CPH 597G Open Airways for Schools (1) (*offered fall & spring*)

CPH 597S Skin Cancer Prevention in the Community Setting (1-2) (*offered fall & spring*)

**#Note:** Approved Service Learning Courses are listed as CPH 597 A-G & S.

Service Learning courses are offered all semesters. Please consult the schedule of classes for exact course dates.



## Recommended Course Sequencing

### First Year

|                      |                                                         |
|----------------------|---------------------------------------------------------|
| <u>Fall Semester</u> | (13 units)                                              |
| CPH 531*             | Contemporary Health Issues & Research (3)               |
| CPH 573A             | Basic Principles of Epidemiology (3)                    |
| CPH 576A             | Biostatistics in Public Health (3)                      |
| CPH 577              | Sociocultural & Behavioral Aspects of Public Health (3) |
| CPH 597#             | Service Learning Course (in August/Summer Session II)   |

|                                 |                                                                        |
|---------------------------------|------------------------------------------------------------------------|
| <u>Spring Semester</u>          | (12 units)                                                             |
| CPH 532A *§                     | Applied Aspects of Program Planning, Implementation & Evaluation I (4) |
| CPH 574                         | Public Health Policy and Management (3)                                |
| CPH 596E *                      | Health Education Leadership Seminar (2)*                               |
| Elective                        | (Approved by Faculty Mentor) (3)                                       |
| Internship Preparation Workshop | ( <b>required; non-credit</b> )                                        |

|                                                                      |                                                                       |
|----------------------------------------------------------------------|-----------------------------------------------------------------------|
| <u>Summer Session between 1<sup>st</sup> and 2<sup>nd</sup> year</u> | (0-1 unit)                                                            |
| CPH 597#                                                             | Service Learning Course (1)<br>(if this requirement has not been met) |

### Second Year

|                      |                                                                    |
|----------------------|--------------------------------------------------------------------|
| <u>Fall Semester</u> | (12 units)                                                         |
| CPH 535* §           | Multicultural Health Beliefs (3)                                   |
| CPH 909 §            | Master's Report "Internship" (2)                                   |
| CPH 575              | Environmental & Occupational Health (3)                            |
| Elective             | (Approved by Faculty Mentor) (3)                                   |
| CPH 597#             | Service Learning Course (1) (if this requirement has not been met) |



|                        |                                  |
|------------------------|----------------------------------|
| <u>Spring Semester</u> | (7 units)                        |
| CPH 909 §              | Master's Report "Internship" (4) |
| Elective               | (Approved by Faculty Mentor) (3) |

\* This course only offered in this specific semester

|                         |           |                                      |
|-------------------------|-----------|--------------------------------------|
| <b>§ Prerequisites:</b> | CPH 532A: | CPH 531 and CPH 577                  |
|                         | CPH 535:  | CPH 577                              |
|                         | CPH 909:  | At least 3 core courses and CPH 532A |

MPH required core courses are offered fall & spring semesters, allowing flexibility.

**#Note:** Approved Service Learning Courses are offered all semesters. Please consult the schedule of classes for exact course dates.

# Health Services Administration

*(Phoenix and Tucson campuses)*

*Cecilia Rosales, MD, MS- Program Chair*

**Faculty:** Gail Barker, PhD, MBA; Leila Barraza, JD, MPH; Zhao Chen, PhD, MPH; Howard Eng, DrPH, MS; Janet Foote, PhD; Angelika Gruessner, PhD; Daniel Orenstein, JD; Kenneth Schachter, MD, MBA; Ernest Schloss, PhD; Terry Urbine, PhD.

The Master of Public Health, Health Services Administration is an accredited interdisciplinary College-wide program that prepares students to develop the skills needed to work in a variety of health related organizations such as health systems, health agencies, third party payers and/or health care supply chain organizations in both governmental and non-governmental settings.

The unique combination of public health and health care administration classes in this accredited curriculum will provide students with the tools they need to understand the multifaceted administrative and business aspects of health care. The Health Services Administration curriculum is comprised of specifically targeted courses, with a goal to graduate highly qualified health care administrators.

The program is geared toward students who are excited to enroll in courses that utilize a combination of on line and classroom style teaching modalities. Students selecting this program should possess some background in a public health or a health care related field, and/or have experience working or volunteering with at least one public health program or health care organization. In some circumstances, working students can perform their internship project at their worksite.

## **MPH Health Services Administration Total Minimum Credit Requirements (42 units)**

### **Required Core Courses (15 units)**

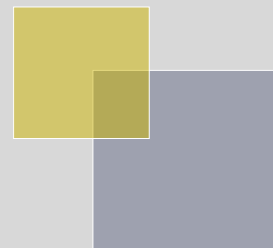
- CPH 573A Basic Principles of Epidemiology (3)
- CPH 574 Public Health Policy and Management (3)
- CPH 575 Environmental and Occupational Health (3)
- CPH 576A Biostatistics in Public Health (3)
- CPH 577 Sociocultural & Behavioral Aspects of Public Health (3)
- Internship Preparation Workshop (**required; non-credit**)

### **Required Health Services Administration Courses (21 units)**

- CPH 507 Health Care Economics and Policy (3)
- CPH 558 Health Care Marketing (3)
- CPH 561 Introduction to Health Care Quality and Safety (3)
- CPH 562 Health Services Administration (3)
- CPH 569 Fundamentals of Health Budgeting and Financial Management (3)
- CPH 608A Public Health Law and Ethics (3)
- CPH 641 Health Systems Delivery (3)

### **Required Health Services Administration Internship (6 units)**

- CPH 909 Master's Report "Internship" (6)



## Recommended Course Sequencing

### First Year

#### Fall Semester (9 units)

- CPH 562 Health Services Administration (3)
- CPH 573A Basic Principles of Epidemiology (3)\*
- CPH 558 Health Care Marketing (3)

#### Spring Semester (12 units)

- CPH 576A Biostatistics for Public Health (3)\*\*
- CPH 641 Health Systems Delivery (3)
- CPH 561 Introduction to Health Care Quality and Safety (3)\*\*
- CPH 574 Public Health Policy and Management (3)\*

### Second Year

#### Fall Semester (12 units)

- CPH 575 Environmental and Occupational Health (3)\*\*
- CPH 577 Sociocultural and Behavioral Aspects of Public Health (3)\*
- CPH 569 Fundamentals of Health Budgeting and Financial Management (3)
- CPH 909 Internship/Master's Report (3) #

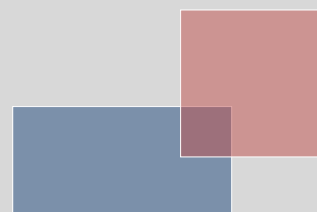
#### Spring Semester (9 units)

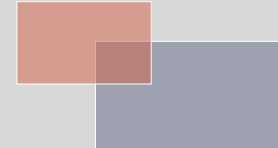
- CPH 507 Health Care Economics and Policy (3)\*\*
- CPH 608A Public Health Law and Ethics (3)
- CPH 909 Internship/Master's Report (3) #

\* Online availability limited to this semester. Course is also available in person in Tucson.

\*\*Offered only online during this semester. Course is not available in-person in Tucson or Phoenix.

# NOTE: **Prerequisites for CPH 909:** At least 3 MPH core courses (which must include CPH576A or 573A).





# Public Health Policy and Management

*Michael Halpern, MD, PhD, MPH – Section Chair*

**Faculty:** Gail Barker, PhD, MBA; Leila Barraza, JD, MPH; Elizabeth Calhoun, PhD, MEd; Daniel Derksen, MD; Howard Eng, DrPH, MS; Joe Gerald, MD, PhD; Cecilia Rosales, MD, MS; Kenneth Schachter, MD, MBA; Ernest Schloss, PhD; Joe Tabor, PhD

***Appointed Professionals and Lecturers:***

Jill Guernsey de Zapien, BA; Maia Ingram, MPH

The MPH in Public Health Policy and Management is offered by the Department of Community, Environment and Policy. The Public Health Policy and Management Section prepares MPH students for leadership roles in the public and private sectors and to effectively create and implement policies and manage programs that promote the public's health with special emphasis on the diverse and rural populations of the Southwest.

The Public Health Policy and Management concentration places a strong emphasis on the following factors in its determination of a candidate's potential for success in the concentration:

- Interest in improving health and well-being of vulnerable populations (including rural and border health issues) through public service.
- A commitment to: strengthening community resources that promote health; improving access to high-quality health care services; and fostering individuals' ability to participate fully in determining their health.
- Ability to acquire specific knowledge and use it to draw logical conclusions as evidenced by academic achievement in the classroom and on standardized examinations.
- Ability to effectively communicate knowledge and ideas using written and verbal mediums.
- Interest in health policy development as evidenced by formal coursework and/or experience.
- Interest in evidenced-based decision-making as evidenced by formal coursework and/or experience in health economics, health outcomes, health services administration, or quality-improvement.

## **MPH PHPM Total Minimum Credit Requirements (46 units)**

### **Required Core Courses (15 units)**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics in Public Health (3)                              |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required</b> ; non-credit) |

### **Required PHPM Courses (19 units)**

|         |                                           |
|---------|-------------------------------------------|
| CPH 562 | Health Services Administration (3)        |
| CPH 567 | Public Health Leadership & Management (3) |

|          |                                                               |
|----------|---------------------------------------------------------------|
| CPH 569  | Fundamentals of Health Budgeting and Financial Management (3) |
| CPH 597# | Service Learning Course (1)                                   |
| CPH 617  | Advanced Public Health Policy Analysis (3)                    |
| CPH 909  | Master's Report "Internship" (6)                              |

**Elective Courses (minimum 12 units)** – (Approved by Faculty Mentor)

**Recommended Course Sequencing**

**First Year**

|                      |                                                                 |
|----------------------|-----------------------------------------------------------------|
| <u>Fall Semester</u> | (12 units)                                                      |
| CPH 562 **           | Health Services Administration (3)                              |
| CPH 573A*            | Basic Principles of Epidemiology (3)                            |
| CPH 574*             | Public Health Policy & Management (3)                           |
| CPH 576A*            | Biostatistics in Public Health (3) <b><u>Or</u></b>             |
|                      | CPH 577 Sociocultural & Behavioral Aspects of Public Health (3) |

|                        |                                                                                |
|------------------------|--------------------------------------------------------------------------------|
| <u>Spring Semester</u> | (12 units)                                                                     |
| CPH 567**              | Public Health Leadership & Management (3)                                      |
| CPH 617**              | Advanced Public Health Policy Analysis (3)                                     |
| Elective               | (Approved by Faculty Mentor) (3)                                               |
| Elective               | (Approved by Faculty Mentor) (3)                                               |
| CPH 597#               | Service Learning Course (1) (offered all semesters; including summer sessions) |

**Second Year**

|                      |                                                                          |
|----------------------|--------------------------------------------------------------------------|
| <u>Fall Semester</u> | (12 units)                                                               |
| CPH 569**            | Fundamentals of Health Budgeting & Financial Management (3)              |
| CPH 575 *            | Environmental & Occupational Health (3)                                  |
| CPH 577*             | Sociocultural & Behavioral Aspects of Public Health (3) <b><u>Or</u></b> |
|                      | CPH 576A Biostatistics in Public Health (3)*                             |
| Elective             | (Approved by Faculty Mentor) (3)                                         |
|                      | Internship Preparation Workshop ( <b><i>required</i></b> ; non-credit)   |

|                        |                                  |
|------------------------|----------------------------------|
| <u>Spring Semester</u> | (9 units)                        |
| CPH 909§               | Master's Report "Internship" (6) |
| Elective               | (Approved by Faculty Mentor) (3) |

\*MPH Core Courses are offered fall & spring semesters, allowing flexibility.

\*\*This course is only offered in this specific semester

**§ Prerequisite Courses for CPH 909 - Master's Report "Internship":** At least 3 MPH core courses. ***All five MPH core courses must be completed prior to the student's final semester.***

**#Note:** Approved Service Learning Courses are listed as CPH 597 A-G & S.

Service Learning courses are offered all semesters. Please consult the schedule of classes for exact course dates.

# Public Health Practice

(Based at the Phoenix Campus)

*Cecilia Rosales, MD, MS- Program Chair*

**Faculty:** Gail Barker, PhD, MBA; John Ehiri, PhD, MPH, MSc; Janet Foote, PhD; Iman Hakim, MBBCh, PhD, MPH; Douglas Campos-Outcalt, MD, MPA; Douglas Taren, PhD; Terry Urbine, PhD

The Master of Public Health in Public Health Practice is an interdisciplinary College-wide program that prepares students to develop the public health skills needed to work in a variety of governmental and non-governmental settings including the local, county and state departments of health, the Indian Health Service, Medicaid and Medicare programs, hospitals, and community health centers. Students learn to work effectively as part of multidisciplinary teams to develop, manage and evaluate public health programs designed to address health disparate populations.

The Public Health Practice concentration is geared toward students who are able to enroll in courses that utilize a combination of online, video conference, and in person teaching modalities. Students selecting the public health practice program should possess an academic background in a public health related field and/or experience working or volunteering within at least one public health program.

## **MPH PHP Total Minimum Credit Requirements (42 units)**

### **Required Core Courses (15 units)**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics in Public Health (3)                              |
| CPH 577  | Sociocultural & Behavioral Aspects of Public Health (3)         |
|          | Internship Preparation Workshop ( <b>required</b> ; non-credit) |

### **Required Public Health Practice Courses (21 units)**

|          |                                                                |
|----------|----------------------------------------------------------------|
| CPH 569  | Fundamentals of Health Budgeting and Financial Management (3)  |
| CPH 572  | Applied Public Health Practice (3)                             |
| CPH 641  | Health Systems Delivery (3)                                    |
| CPH 696V | Public Health Practice Seminar (1 unit – <b>2 times</b> )      |
| CPH 909  | Master's Report "Internship" (6)                               |
| CPH 597# | Service Learning Course (1) (approved by Faculty Mentor)       |
|          | Planning/Evaluation Course (3) - Choose One:                   |
|          | ○ CPH 529 Project Design & Implementation (3) <b><u>Or</u></b> |
|          | ○ CPH 544 Fundamentals of Evaluation (3)                       |

### **Elective Courses (minimum 6 units)** - Approved by Faculty Mentor

## Recommended Course Sequencing

### **First Year**

#### Fall Semester (10 units)

- CPH 569 Fundamentals of Health Budgeting and Financial Management (3)  
CPH 573A\* Basic Principles of Epidemiology (3)  
CPH 529\*\* Project Design & Implementation (3)  
CPH 696V Public Health Practice Seminar (1)  
Internship Preparation Workshop (**required**; *non-credit*)

#### Spring Semester (10 units)

- CPH 574\* Public Health Policy and Management (3)  
CPH 576A\*\* Biostatistics in Public Health (3)  
CPH 641 Health Systems Delivery (3)  
CPH 696V Public Health Practice Seminar (1)

#### Summer Session (0-1 units)

- CPH 597# Service Learning Course (1) – Approved by Faculty Mentor [**or** Winter]#

### **Second Year**

#### Fall Semester (12 units)

- CPH 577\* Sociocultural & Behavioral Aspects of Public Health (3)  
CPH 575\*\* Environmental and Occupational Health (3)  
Elective (Approved by Faculty Mentor) (3)  
CPH 909 § Master's Report "Internship" (3)

#### Winer Session (0-1 units)

- CPH 597# Service Learning Course (1) – Approved by Faculty Mentor [**or** Summer]#

#### Spring Semester (9 units)

- CPH 572 Applied Public Health Practice (3)  
Elective (Approved by Faculty Mentor) (3)  
CPH 909 § Master's Report "Internship" (3)

\*Online availability limited to this semester. Course is also available in person in Tucson.

\*\*Offered only online during this semester. Course is not available in person in Tucson or Phoenix.

§ **Prerequisites for CPH 909:** At least 3 MPH core courses (which must include CPH576A or 573A).

#**Note:** Approved Service Learning Courses are offered all semesters. Please consult the schedule of classes for exact course dates and locations.

# **Service Learning Course** (1 unit):

**Choose (1) course from the following:**

|          |                                                                                                                    |
|----------|--------------------------------------------------------------------------------------------------------------------|
| CPH 597F | Phoenix Urban Service Learning (1) – (offered fall - Phoenix)                                                      |
| CPH 597P | Health Care for the Homeless (1) - (offered fall - Phoenix)                                                        |
| CPH 597A | Maternal & Child Health Programs in Urban Settings (1) – (offered summer II- Tucson)                               |
| CPH 597B | Maternal & Child Health Programs in the Rural Southwest<br>(1 unit - offered summer pre-session – location varies) |
| CPH 597C | Border Health Service Learning Institute (1) – (offered summer II – US/Mexico Border)                              |
| CPH 597D | Rural Health Service Learning Institute (1) – (offered summer II – location varies)                                |



# Online Master of Public Health



## CURRICULUM

The online MPH curriculum combines a bedrock foundation in the core principles of public health with the option to choose one of three distinct concentrations. Our concentrations reflect the most vital areas of public health, and satisfy the varied callings and personal interests of our students. Unlike other programs, these concentrations aren't light forays into each discipline. In fact, they make up exactly half of the coursework throughout the 42-credit program. In as few as two years you can graduate with the skills and expertise to be a leader in public health.

### UNIVERSITY OF ARIZONA MPH CURRICULUM MAP

### CREDIT HOURS

### MASTER OF PUBLIC HEALTH 42 CREDIT UNITS

#### Degree and Concentration Courses

|                                                     |                                                         |           | Applied<br>Epidemiology | Health Services<br>Administration | Health<br>Promotion |
|-----------------------------------------------------|---------------------------------------------------------|-----------|-------------------------|-----------------------------------|---------------------|
| ▶ CPH 573A                                          | Basic Principles of Epidemiology                        | 3         | X                       | X                                 | X                   |
| ▶ CPH 574                                           | Public Health Policy & Management                       | 3         | X                       | X                                 | X                   |
| ▶ CPH 576A                                          | Biostatistics in Public Health                          | 3         | X                       | X                                 | X                   |
| ▶ CPH 569                                           | Fundamentals of Health Budgeting & Financial Management | 3         | X                       | X                                 | X                   |
| ▶ CPH 577                                           | Sociocultural & Behavioral Aspects of Public Health     | 3         | X                       | X                                 | X                   |
| ▶ CPH 575                                           | Environmental & Occupational Health                     | 3         | X                       | X                                 | X                   |
|                                                     | Internship Preparation Workshop                         | 0         | X                       | X                                 | X                   |
| ▶ CPH 909                                           | Internship                                              | 6         | X                       | X                                 | X                   |
|                                                     | <b>Total Credit Units for Core and Internship</b>       | <b>24</b> | <b>24</b>               | <b>24</b>                         | <b>24</b>           |
| <b>Applied Epidemiology Concentration</b>           |                                                         |           |                         |                                   |                     |
| ▶ CPH 573B                                          | Epidemiologic Method                                    | 3         | X                       | -                                 | -                   |
| ▶ CPH 573D                                          | Analysis of Public Health Data                          | 3         | X                       | -                                 | -                   |
| ▶ CPH 576B                                          | Biostatistics for Research                              | 3         | X                       | -                                 | -                   |
| ▶ CPH 579                                           | Infectious Disease                                      | 3         | X                       | -                                 | -                   |
| ▶ CPH 555                                           | Maternal and Child Health Epidemiology                  | 3         | X                       | -                                 | -                   |
| ▶ CPH 628                                           | Public Health Research & Evaluation                     | 3         | X                       | -                                 | X                   |
|                                                     | <b>Total Specialization Credits</b>                     |           | <b>18</b>               |                                   |                     |
| <b>Health Services Administration Concentration</b> |                                                         |           |                         |                                   |                     |
| ▶ CPH 507                                           | Health Care Economics & Policy                          | 3         | -                       | X                                 | -                   |
| ▶ CPH 561                                           | Introduction to Health Care Quality and Safety          | 3         | -                       | X                                 | -                   |
| ▶ CPH 562                                           | Health Services Administration                          | 3         | -                       | X                                 | -                   |
| ▶ CPH 641                                           | Health Systems Delivery                                 | 3         | -                       | X                                 | -                   |
| ▶ CPH 608A                                          | Public Health Law and Ethics                            | 3         | -                       | X                                 | -                   |
| ▶ CPH 558                                           | Marketing and Strategic Planning                        | 3         | -                       | X                                 | -                   |
|                                                     | <b>Total Specialization Credits</b>                     |           |                         | <b>18</b>                         |                     |
| <b>Health Promotion Concentration</b>               |                                                         |           |                         |                                   |                     |
| ▶ CPH 532P                                          | Planning                                                | 3         | -                       | -                                 | X                   |
| ▶ CPH 532E                                          | Evaluation                                              | 3         | -                       | -                                 | X                   |
| ▶ CPH 531                                           | Contemporary Health Issues & Research                   | 3         | -                       | -                                 | X                   |
| ▶ CPH 535                                           | Multi-Cultural Health Benefits                          | 3         | -                       | -                                 | X                   |
| ▶ CPH 642                                           | Communications                                          | 3         | -                       | -                                 | X                   |
|                                                     | <b>Total Specialization Credits</b>                     |           |                         |                                   | <b>18</b>           |
| <b>Total Credit Units Per Concentration</b>         |                                                         | -         | <b>42</b>               | <b>42</b>                         | <b>42</b>           |

### APPLIED EPIDEMIOLOGY

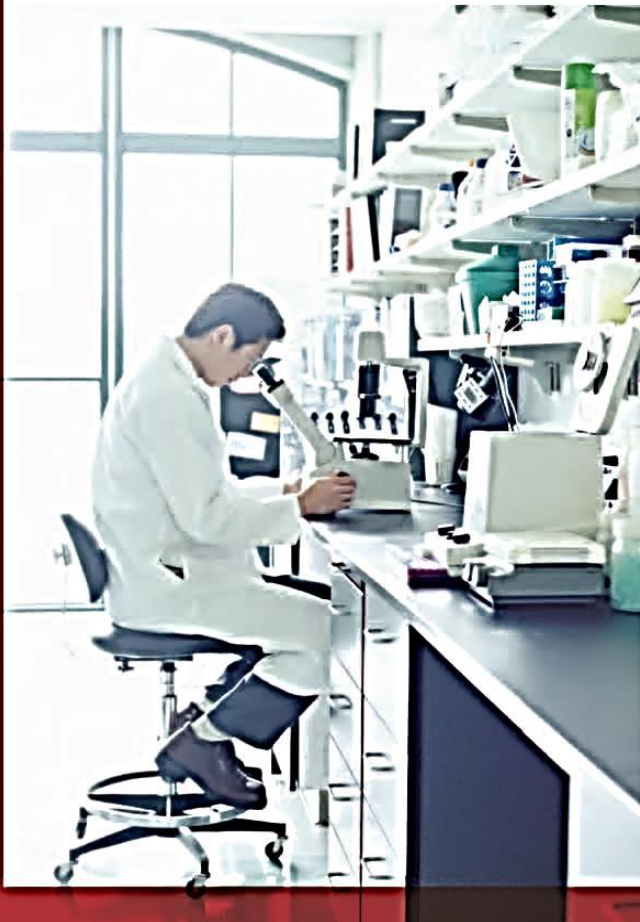
The Epidemiology curriculum provides systematic training in measuring and studying the distribution, characteristics and causes of disease across demographics. Epidemiology is a fundamental science of public health and is essential in the prevention of rare and chronic diseases, disability and premature death.

### HEALTH SERVICES ADMINISTRATION

This concentration offers a combination of public health and health care administration classes that provides you with a multifaceted understanding of the administrative and business aspects of health care. Use the skills learned in the HSA curriculum to pursue leadership roles in both governmental and non-governmental settings.

### HEALTH PROMOTION

The health promotion curriculum examines the sociocultural factors that influence health and health behavior. The concentration operates under the philosophy that education, communication and effective implementation of sound health policies and initiatives can improve the quality of life around you. Learn to plan education strategies and evaluate their effectiveness. This program can help you develop the skills to promote healthier lifestyles in culturally diverse populations around the world.



## ADMISSION REQUIREMENTS

The following materials are required for admission to the online MPH program:

- ▶ Bachelor's degree with 3.0 GPA
- ▶ One course in college-level introductory, human or general biology
- ▶ One course in college algebra, statistics or a more advanced math course, such as calculus
- ▶ Three letters of recommendation
- ▶ Resume or CV
- ▶ Statement of purpose and objectives
- ▶ GRE or MCAT scores
  - ▶ The GRE will be waived for all students applying to the Health Administration concentration.
  - ▶ The GRE will be waived for students with 5+ years of paid public health work experience for the Health Promotion concentration.
  - ▶ GRE or MCAT scores required for all other applicants.
- ▶ TOEFL or IELTS scores for international applicants

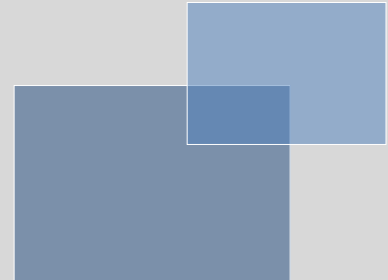
# Dual Degree Programs

The Mel and Enid Zuckerman College of Public Health (MEZCOPH) has partnered with the College of Medicine, the College of Law, the College of Pharmacy, the Eller College of Management, and the College of Social and Behavioral Sciences to administer six dual degree programs:

## MEZCOPH Dual Degree Programs:

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- MD/MPH
- JD/MPH
- PharmD/MPH
- MPH/MBA
- MPH/MA-Latin American Studies
- MPH/MS-Mexican American Studies



Dual degree programs are excellent programs for individuals with a wide range of interests, diverse education, and multiple talents to gain expertise in both public health and other disciplines such as medicine, law, business and the social sciences. Students have the opportunity to earn two complementary degrees simultaneously. Dual degree applicants are required to meet the application deadlines, testing requirements, and submit program fees to each program independently. Academically, students are expected to fulfill the basic requirements of each program with the inclusion of course work that satisfies the requirements of both programs. Dual-degree students work with academic advisors in both programs to determine their specific course requirements. Information regarding the requirements for each dual degree program follows.

## Medicine:

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The MD/MPH Dual Degree program is offered jointly with the University of Arizona College of Medicine and the Mel and Enid Zuckerman College of Public Health at both Tucson and Phoenix campuses. The dual degree program allows a student to earn a Doctor of Medicine (MD) and a Master of Public Health (MPH). The emphasis of the MD/MPH Dual Degree is on Clinical Leadership; it is anticipated that graduates will be leaders in a wide variety of clinical and public health settings. The MD/MPH program is designed to give students exposure to the public health, prevention and clinical issues they will face, and provide a framework for problem solving and implementing effective health programs.

The MD/MPH curriculum includes the five “core” MPH classes; Epidemiology, Health Administration and Policy, Biostatistics, and Environmental and Occupational Health and Social and Behavioral Sciences. One public health class is taken each semester during the first two years of medical school in addition to the medical school curriculum. During the third year, MD/MPH students continue to remain enrolled as medical students while they take remaining MPH core and elective classes during the first semester, and complete their MPH internship during the second semester. Students then return to the traditional medical school rotation

curriculum for their last two years. The MD/MPH Program is typically a 5 year program; however, some students, particularly those with previous public health courses at The University of Arizona, have chosen to accelerate the program.

**Total Minimum MPH Degree Credit Requirements = 42 units** to complete the MPH degree in the Clinical Leadership concentration - *(in addition to the medical school curriculum)*. The MPH requirements are summarized below:

**Required MD/MPH Courses (MPH Curriculum) - Tucson and Phoenix campuses**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 570  | Issues and Trends in Public Health (3)                          |
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics in Public Health (3)                              |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required</b> ; non-credit) |
| CPH 896I | Clinical Leadership and Administration (4)                      |
| CPH 909  | Master's Report "Internship" (12)                               |

**Electives** (minimum 8 units)



## Latin American Studies:

The MPH/MA Dual Degree Program allows students to earn a Master of Public Health and a Master of Arts degree in Latin American Studies (LAS). This dual degree program offers students the opportunity for interdisciplinary study allowing them to customize their dual degree by selecting **one of six MPH concentration areas** and by taking electives addressing issues relevant to Latin American populations. The minimum number of required units varies based on the MPH concentration. A minimum of 50% of credit hours must be unique to each degree and cannot be used for dual credit. Students work with academic advisors in both programs to determine their specific course requirements.

### **Latin American Studies (LAS) MA Requirements (36+ graduate units)**

- LAS 500, Introduction to Latin American Studies (3 units)
- LAS 550 Research Methods Course (required for students completing thesis), **Or** Interdisciplinary Seminar Course approved by LAS advisor (3 units)
- Courses from primary discipline or thematic area (identified by student with LAS advisor approval) **for a total of 15 units.**
- International public health courses with assignments focusing on Latin America or U.S. – Mexico border (9 units)
- Thesis or Public Health/LAS Internship – 6 units to be completed through: 6 unit thesis or 3 – 6 units Public Health/LAS Master's Report "Internship" and/or approved elective course work. (6 units)
- Language requirement met by Spanish 330 and Portuguese 305 *or* Spanish 251 and Portuguese 325 *or* equivalency exam. ***Please note: Language credits do not count toward the 36 total unit requirement for LAS.***

### **Master in Public Health Requirements (42 – 47 units)**

#### **Core Courses** (15 units)

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics for Public Health (3)                             |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required; non-credit</b> ) |

#### **Internship**

|         |                                           |
|---------|-------------------------------------------|
| CPH 909 | Master's Report "Internship" (3-6 units)* |
|---------|-------------------------------------------|

#### **Required Concentration Courses** (12 - 27 units)\*

The list of required courses can be found in this catalog listed under each of the MPH disciplines. These requirements may change from year to year and are specific to the year of acceptance into the MPH program.

#### **Electives** (3-12 units)\* – Approved by Faculty Mentor

\*The number of units and prerequisite courses varies based on the MPH concentration. A minimum of 50% of credit hours must be unique to each degree and cannot be used for dual credit.

## **Mexican American Studies:**

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The MPH/MS Dual Degree Program allows students to earn a Master of Public Health and a Master of Science degree in Mexican American Studies. Students gain an advanced understanding of the Mexican American and Latino populations in the United States that prepares them to develop culturally-competent public health programs and policies targeting Latinos. This program provides subject and research competency on Mexican Americans as well as applied skills for working professionals and graduate students interested in better serving the Mexican American population of the Southwest. This dual degree program offers students the opportunity for interdisciplinary study allowing them to customize their dual degree by selecting one of **six MPH concentration areas** and by taking electives addressing issues relevant to Mexican American and Latino populations. The minimum number of required units varies based on the MPH concentration. A minimum of 50% of credit hours must be unique to each degree and cannot be used for dual credit. Students work with academic advisors in both programs to determine their specific course requirements.

### **Mexican American Studies Requirements:**

Thirty-three (33) units are required for the MS in Mexican American Studies: a minimum of 18 core units, 9 elective units from the Latino Health and Wellness Strand, and the choice of a 6 unit thesis or 6 units of electives and an oral examination.

#### **Required Core Courses (18 units)**

|          |                                                  |
|----------|--------------------------------------------------|
| MAS 508  | The Mexican American: A Cultural Perspective (3) |
| MAS 509  | Mexican Immigration (3)                          |
| MAS 525  | Latino Health Disparities (3)                    |
| MAS 560  | Chicano Historical Thought (3)                   |
| MAS 580A | Advanced Research Methods (3)                    |
| MAS 587  | Chicana Gender Perspectives (3)                  |

**Elective Courses: (minimum 9 units)**– Approved by Faculty Advisor

#### **Thesis or Examination Option (6 units)**

#### **Master of Public Health Requirements (42 – 47 units)**

##### **Core Courses (15 units)**

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics for Public Health (3)                             |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required; non-credit</b> ) |

##### **Internship (3-6 units)\***

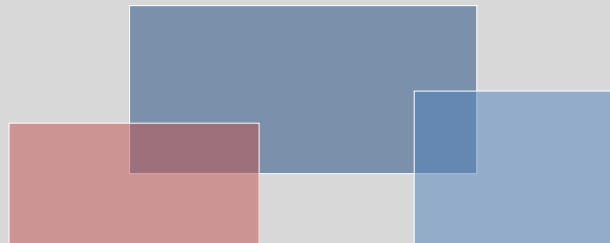
|         |                                          |
|---------|------------------------------------------|
| CPH 909 | Master's Report "Internship" (3-6 units) |
|---------|------------------------------------------|

##### **Required Concentration Courses (12- 27 units)\***

The list of required courses can be found in this catalog listed under each of the MPH disciplines. These requirements may change from year to year and are specific to the year of acceptance into the MPH program.

**Electives** (3-12 units)\* – approved by Faculty Advisor)

\*The number of units and prerequisite courses varies based on the MPH concentration. A minimum of 50% of credit hours must be unique to each degree and cannot be used for dual credit.





## Law:

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The JD/MPH Dual Degree Program is offered jointly by the University of Arizona College of Law and the Mel and Enid Zuckerman College of Public Health. The dual degree program allows a student to earn a Juris Doctor degree (JD) and a Master of Public Health (MPH). The objective of the program is to support and encourage individuals with an interest in public health studies in the development of interdisciplinary knowledge and skills in preparation for a career in health law, public health policy, or a related field. The Law and Public Health (JD/MPH) dual degree is designed to train leaders in the field of public health law.

This dual degree program offers students the opportunity for interdisciplinary study allowing them to customize their dual degree by selecting one of **six MPH concentration areas** and by taking electives addressing issues relevant to public health law. Graduates are prepared for positions in a variety of settings, including work in a health law or environmental section of a law firm; positions in local, state, and federal government; research or advocacy jobs in nongovernmental organizations; or posts in academia.

Students in the program fulfill all requirements necessary to earn a JD from the College of Law and an MPH from MEZCOPH and complete the separate requirements for the JD and MPH degrees in four years. (The program is open only to full-time students). The preferred sequence of courses would be to have dual degree students to be full time in the College of Law for the first year, then complete the first year of the Master of Public Health program during the second year, or vice-versa, before taking courses from both programs simultaneously. Following completion of the first year of study of each program, a student may take both law and Master of Public Health courses simultaneously, to complete both degrees. Students will have to work with their advisors to determine how they can coordinate their class schedules to meet both degree requirements. This will vary by the student's concentration area of study.

### Master of Public Health (MPH) Requirements

The Mel and Enid Zuckerman College of Public Health offers an interdisciplinary Master's program in Public Health. Students need a minimum of 42-47 units, depending on the area of concentration selected to complete the MPH degree (*in addition to the law school curriculum*).

#### **Core Courses** (15 units)

- CPH 573A Basic Principles of Epidemiology (3)
- CPH 574 Public Health Policy and Management (3)
- CPH 575 Environmental and Occupational Health (3)
- CPH 576A Biostatistics for Public Health (3)
- CPH 577 Sociocultural and Behavioral Aspects of Public Health (3)
- Internship Preparation Workshop (**required; non-credit**)

#### **Internship** (3-6 units)\*

- CPH 909\* Master's Report "Internship" (3-6 units)

#### **Required Concentration Courses** (12- 27 units)\*



The list of required courses can be found in this catalog listed under each of the MPH disciplines. These requirements may change from year to year and are specific to the year of acceptance into the MPH program.

**Electives** (3 - 12 units)\* – approved by Faculty Advisor)

\*The number of units and prerequisite courses varies based on the MPH concentration. A minimum of 50% of credit hours must be unique to each degree and cannot be used for dual credit.

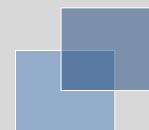
**Juris Doctor (J.D.) Requirements:**

The College of Law offers an interdisciplinary Juris Doctor degree. Students will need a total of 88 graduate units to successfully complete the program. Students must be enrolled for a minimum of four semesters as a law student.

**Tuition and Fees:**

Tuition and fees vary by program. Effective Spring 2012, the University will be charging students in multiple majors (dual degrees) with program fees/differentials, all applicable program fees/differentials. Students, who receive more than one program fee/differential will receive a 25 percent waiver for each program fee/differential.





## **Business:**

The MPH/MBA Dual Degree Program is offered jointly by the University of Arizona Mel and Enid Zuckerman College of Public Health and the Eller College of Management. The MPH/MBA dual degree program allows students to earn a Master of Public Health (MPH) and a Master of Business Administration (MBA) degree aimed to provide leadership and management training for the health services industry at the local, national and international levels.

This dual degree program offers students the opportunity for interdisciplinary study by allowing them to customize their dual degree by selecting **one of six MPH concentration areas** which offer comprehensive knowledge and competencies in the public health sciences (health behavior and health promotion, family and child health, public health policy and management, biostatistics, epidemiology, environmental health sciences) and state-of-the-art business practices (finance, accounting and marketing combined with strategic thinking, entrepreneurship and value-based management). The program prepares graduates to transfer strategic thinking, scientific know-how and leadership and managerial skills to rapidly changing environments and global health challenges in the 21st century. Graduates are prepared for work in health industry leadership positions, including health care marketing, healthcare consulting, hospital administration, managed care, biotechnology, healthcare related non-profit work or positions in academia.

Students in the MPH/MBA dual degree program complete the separate requirements for the MPH and MBA degrees in three years upon the completion of a minimum of 75-80 units in Public Health and Business. (The program is open only to full-time students). The preferred sequence of courses would be to have dual degree students to be full time in the Eller College of Management for the first year, then complete the first year of the Master of Public Health program during the second year, before taking courses from both programs simultaneously. Following completion of the first year of study of each program, a student may take both MPH and MBA courses simultaneously, to complete both degrees. Students will have to work with their advisors to determine how they can coordinate their class schedules to meet both degree requirements. This will vary by the student's concentration area of study within the MPH Program.

## **Master of Public Health (MPH) Requirements:**

The Mel and Enid Zuckerman College of Public Health offers an interdisciplinary Master's program in Public Health. Students need a minimum of 42-47 units, depending on the area of concentration selected, to complete the MPH degree (*in addition to the required MBA curriculum*).\*

### **Core Courses** (15 units)

|          |                                                                 |
|----------|-----------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                            |
| CPH 574  | Public Health Policy and Management (3)                         |
| CPH 575  | Environmental and Occupational Health (3)                       |
| CPH 576A | Biostatistics for Public Health (3)                             |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)       |
|          | Internship Preparation Workshop ( <b>required; non-credit</b> ) |



### **Internship**

CPH 909 Master's Report "Internship" (3-6 units)\*

### **Required Concentration Courses** (12- 27 units)\*

The list of required courses can be found in this catalog listed under each of the MPH disciplines. These requirements may change from year to year and are specific to the year of acceptance into the MPH program.

### **Electives** (3-12 units)\* – approved by Faculty Advisor)

\*The number of units and prerequisite courses varies based on the MPH concentration. A minimum of 50% of credit hours must be unique to each degree and cannot be used for dual credit. In summary, a student enrolled in the dual degree program may count a maximum of 23 units toward both degrees.

### **Master of Business Administration (MBA) Requirements:**

The Eller College of Management offers a Master of Business Administration degree. Students will need a total of 56 graduate units to successfully complete the MBA degree program. Students must be enrolled for a minimum of two semesters as an MBA student.

### **Tuition and Fees**

Tuition and fees vary by program. Effective Spring 2012, the University will be charging students in multiple majors (dual degrees) with program fees/differentials, all applicable program fees/differentials. Students, who receive more than one program fee/differential, will receive a 25 percent waiver for each program fee/differential.



## **Pharmacy:**

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The Doctor of Pharmacy/Master of Public Health (PharmD/MPH) is offered jointly by the University of Arizona College of Pharmacy and the Mel and Enid Zuckerman College of Public Health. The dual degree program allows students to simultaneously earn a Doctor of Pharmacy (PharmD) and a Master of Public Health (MPH). This PharmD/MPH combines the complementary strengths of the College of Pharmacy and the Zuckerman College of Public Health to provide students with an integrated curriculum focusing on knowledge and ingenuity in the delivery of pharmaceutical care within the broader population based public health environment.

### **Dual Degree Requirements:**

PharmD/MPH dual degree applicants must meet the application deadlines, testing requirements, and submit program fees to each program independently. Dual degrees refer to a formal, approved program for a student to earn two degrees simultaneously. Dual degrees allow flexibility and encourage interdisciplinary work. Since both degrees already exist, the approval process is minimal. The minimum requirements for dual degrees are:

1. Students must apply to and be accepted into both programs (two application fees will be required),
2. Students must meet all the requirements for both degrees, and
3. Students must be enrolled for a minimum of two semesters as an MPH student.

Students enrolled in the dual degree program complete the separate requirements as an integrated curriculum taking courses for the PharmD and MPH degrees during the same semesters. This will allow students to complete both degrees within 5 years of study (at least one year sooner than pursuing the degrees separately), if they are full-time students. Students will have to work with their advisors to determine how they can coordinate their class schedules to meet both degree requirements. This will vary by the student's MPH concentration area of study within the MPH Program. In summary, a student enrolled in the dual degree program may count a maximum of 21-22 units toward both degrees.

This dual degree program consists of the PharmD curriculum and any one of the MPH concentration areas. The concentration areas most easily coordinated include (and their required number of hours):

- Biostatistics (42)
- Epidemiology (44)
- Health Behavior and Promotion (44)
- Public Health Policy and Management (46)

The Masters of Public Health (MPH) also has concentration areas in "Environmental and Occupational Health" and "Family and Child Health." Students may consider these concentrations; however the coordination with the PharmD may be more difficult.

Depending on the student's choice of concentration within the MPH, the dual degree program could lead to a wide variety of career options. MPH/PharmD degree graduates may assume leadership roles in practice, health policy, governmental and non-governmental agencies, and research and academic institutions. Students will be provided with the expertise and competencies essential to provide care and services, in order to promote the health and wellbeing of local and global communities.

### **Master of Public Health (MPH) Requirements:**

The Mel and Enid Zuckerman College of Public Health offers an interdisciplinary Master's program in Public Health. Students need a minimum of 42-47 units, depending on the area of concentration selected, to complete the MPH degree (*in addition to the required **PharmD** curriculum*).

#### **Core Courses** (15 units)

|          |                                                                        |
|----------|------------------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                                   |
| CPH 574  | Public Health Policy and Management (3)                                |
| CPH 575  | Environmental and Occupational Health (3)                              |
| CPH 576A | Biostatistics for Public Health (3)                                    |
| CPH 577  | Sociocultural and Behavioral Aspects of Public Health (3)              |
|          | Internship Preparation Workshop ( <b><i>required; non-credit</i></b> ) |



#### **Internship** (3 - 6 units)\*

\***CPH 909, Master's Report "Internship"** (up to 6 units; the number of internship units and prerequisite courses varies based on the MPH concentration). Four units of Pharmacy Practice Project can count toward 6 units of CPH 909. Students are required to present projects at MEZCOPH and during the College of Pharmacy poster day.

Each MEZCOPH concentration has an additional group of required courses and electives to make up the units minimum required MPH units noted above (between 21 and 27 units). See the MEZCOPH Academic Catalog for these MPH courses listed under each concentration area. In order to facilitate a streamlined combined program there will be acceptance of credit between the programs (contact the MPH and PharmD Advisors).

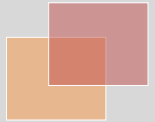
### **Doctor of Pharmacy Requirements:**

The College of Pharmacy requires four units of upper Department electives (non-practicum) and 15 units of practicum electives for the PharmD program. Total units (prepharmacy + professional):  $70 + 142 = 212$  units.

### **Tuition and Fees**

Tuition and fees vary by program. Effective Spring 2012, the University will be charging students in multiple majors (dual degrees) with program fees/differentials, all applicable program fees/differentials. Students, who receive more than one program fee/differential, will receive a 25 percent waiver for each program fee/differential.

# Master of Science in Biostatistics



*Denise Roe, DrPH – Section Chair*

**Faculty:** Melanie Bell, PhD; Dean Billheimer, PhD; Z. John Daye, PhD; Angelika Gruessner, PhD; Paul Hsu, PhD; Chengcheng Hu, PhD; Duane Sherrill, PhD, Professor Emeritus; Jin Zhou, PhD

The MS in Biostatistics is offered by the Department of Epidemiology and Biostatistics. The educational objective is to prepare individuals to work effectively as applied biostatisticians in a variety of public health, epidemiological and clinical research settings. The difference between the MS in Biostatistics and MPH concentration in Biostatistics is that the MS provides training in probability and statistical theory with a research focus, while the MPH provides a broader background in public health. A competitive applicant will have a strong quantitative background; at least three semesters of college-level calculus through multivariable/vector calculus is required; in addition, one semester of linear algebra is strongly recommended.

## **MS in Biostatistics Total Minimum Credit Requirements (39 units):**

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### **Required Courses** (24 units)

|          |                                      |
|----------|--------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3) |
| CPH 576A | Biostatistics in Public Health (3)   |
| CPH 576B | Biostatistics for Research (3)       |
| CPH 576C | Applied Biostatistics Analysis (3)   |
| CPH 647  | Analysis of Categorical Data (3)     |
| CPH 688  | Statistical Consulting (3)           |
| MATH 564 | Theory of Probability (3)            |
| MATH 566 | Theory of Statistics (3)             |

### **Elective Courses\*** (9 units)

At least 6 units from the following courses:

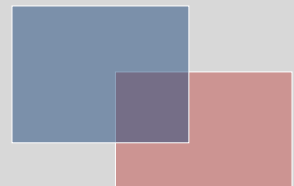
|         |                                              |
|---------|----------------------------------------------|
| CPH 648 | Analysis of High Dimensional Data (3)        |
| CPH 675 | Clinical Trials and Intervention Studies (3) |
| CPH 684 | General Linear and Mixed Effects Models (3)  |
| CPH 686 | Survival Analysis (3)                        |

### **Other elective courses:**

|           |                                                      |
|-----------|------------------------------------------------------|
| CPH 576D  | Data Management and the SAS Programming Language (3) |
| CPH 677   | Genetic Association Studies (3)                      |
| CPH 685   | Special Topics in Biostatistics (3)                  |
| CPH 687   | Theory of Linear Models (3)                          |
| STAT 571A | Advanced Statistical Regression Analysis (3)         |
| STAT 571B | Design of Experiments (3)                            |
| STAT 675  | Statistical Computing (3)                            |

\*Electives may also be chosen from courses taught in other programs with approval of the Biostatistics Faculty Advisor.

### **Required Master's Thesis:** CPH 910 (6 units)



# Master of Science in Environmental Health Sciences

Kelly Reynolds, PhD, MSPH – *Section Chair*

**Faculty:** Paloma Beamer, PhD; Jeff Burgess, MD, MS, MPH; Robert Canales, PhD, MS; Stephanie Griffin, PhD, CIH; Philip Harber, MD, MPH; Eric Lutz, PhD, CMSP; Mary Kay O'Rourke, PhD; Mary Poulton, PhD; Terry Stobbe, PhD, CIH, CSP, CPE

The MS in Environmental Health Sciences is offered by the Department of Community, Environment and Policy. Using an interdisciplinary approach, Environmental Health Sciences provides the critical link between environmental and occupational exposures and human health.

The degree prepares individuals to evaluate and control health risks posed by chemical and biological contaminants and physical exposures (noise, heat and radiation) in occupational environments and communities. Students will receive advanced systematic training in epidemiological and community-based research methods, statistical analysis, exposure assessment, environmental modeling, toxicology, and intervention design. Graduates of this program will apply theory and methods to public health research, evaluation, analysis and decision-making. The program promotes approaches for assessing, preventing and controlling environmental hazards to human health.

The Master of Science degree is designed for individuals who seek training in environmental health research. It is anticipated that graduates will occupy positions as project leaders, program directors and research personnel in academic, government, corporate, community and industrial settings.

For the MS, at least 42 credits are required for the major (including a minimum of 18 units of electives and a minimum of 6 units of thesis). The overall course of study will be developed by the student and the faculty mentor and approved by the student's Graduate Committee and Chair of the Environmental Health Sciences Section. The MS degree program requires approximately two to three years for completion including development and defense of a research thesis.

Successful MS students in our program may be admitted directly to the PhD program pending a favorable vote by the primary EHS faculty and completion of their MS degree.



## Required Master of Science in EHS Curriculum:

**Total Minimum Credit Requirement: = 42 units**

### **Required Major Courses (21 units):**

|          |                                                                       |
|----------|-----------------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                                  |
| CPH 576A | Biostatistics in Public Health (3)                                    |
| CPH 576B | Biostatistics for Research (3)                                        |
| CPH 584  | Fundamentals of Industrial and Environmental Health (3)               |
| CPH 502  | Environmental Monitoring and Analysis (3)                             |
| CPH 653  | Applied Exposure Assessment (3)                                       |
| CPH 696R | Environmental Health Seminar (1 unit each semester – <b>3 times</b> ) |

**Elective Courses:** Minimum of **15 elective units** required for the MS (approved by faculty mentor). Students select courses in areas of emphasis: Exposure and Risk Assessment, Climate and Health, Environmental Contaminant Modeling or Occupational Health and Safety.

**Required Master's Thesis:** CPH 910 (6 units)



# Master of Science in Epidemiology



Elizabeth Jacobs, PhD – **Section Chair**

**Faculty:** Heidi Brown, PhD, MPH; Zhao Chen, PhD, MPH; Leslie Dennis, MS, PhD; Kacey Ernst, PhD, MPH; Janet Foote, PhD; Robin Harris, PhD, MPH; Yann Klimentidis, PhD; Eyal Oren, PhD; Sydney Pettygrove, PhD; Kristen Pogreba Brown, PhD, MPH; Eyal Shahar, MD, MPH

The Master of Science in Epidemiology is offered by the Department of Epidemiology and Biostatistics. The Master of Science degree in Epidemiology is designed for individuals who wish to pursue training in epidemiological research. It is anticipated that graduates will occupy positions as research administrators, program managers, analysts, and evaluators in universities, health departments, governmental agencies, and similar organizations. Students have the option of either a general MS degree in Epidemiology or a specialization in clinical epidemiology. The requirements for these two tracks vary slightly. Students who are interested in clinical epidemiology should contact the Epidemiology Section Chair for additional information.

The overall course of study for the MS degree will be developed by the student and the advisor and approved by the student's Graduate Committee and Chair of the Epidemiology Section. On average, the MS program requires approximately two years for completion. The first year is usually devoted to core coursework and completion of the qualifying exam. The second year is focused on remaining coursework and development of the master's thesis research. Consult the UA catalog for further details on the current course schedule and specific course requirements.

## **MS Epidemiology Total Minimum Credit Requirements (42 units)**

### **Master of Science in Epidemiology Curriculum:**

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#### **Required Major Courses (27 units)**

|           |                                                                                                |
|-----------|------------------------------------------------------------------------------------------------|
| EPID 573A | Basic Principles of Epidemiology (3)                                                           |
| EPID 573B | Epidemiologic Methods (3)                                                                      |
| EPID 573C | Advanced Epidemiology (3)                                                                      |
| EPID 576A | Biostatistics for Public Health (3)                                                            |
| EPID 576B | Biostatistics for Research (3)                                                                 |
| EPID 660  | Infectious Disease Epidemiology (3)                                                            |
| EPID 670  | Chronic Disease Epidemiology (3) <b>or</b><br>EPID 615A Cancer Epidemiology and Prevention (3) |
| EPID 696A | Epidemiology Seminar (1 unit - 3 times), (or equivalent: approved by Faculty Advisor)          |
| EPID XXX  | Biostatistics course beyond EPID 576B (3)                                                      |

**Epidemiology Courses or Approved Electives (9 or more units** – Approved by Faculty Advisor). There is a maximum of 6 units from Independent Study/Research Credit (EPID 599, 699.)

#### **Required Master's Thesis, EPID 910 (6 units)**

# Master of Science in Epidemiology

## Clinical Epidemiology Track

This track is an option for clinically-based researchers seeking to improve their ability to conduct research. The expectation is that students seeking this track will be physicians seeking to conduct clinical research. The overall course of study for this Clinical Epidemiology MS track will be developed by the student and the advisor and approved by the student's Graduate Committee and Chair of the Epidemiology Section. On average, the MS program requires approximately two years for completion. The first year is usually devoted to core coursework and completion of the qualifying exam. The second year is focused on remaining coursework and development of the master's thesis research. Consult the UA catalog for further details on the current course schedule and specific course requirements.

### Master of Science in Epidemiology-Clinical Epidemiology Track Curriculum Total Minimum Credit Requirements (40 units)

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#### **Required Major Courses (26 units)**

|           |                                                                                             |
|-----------|---------------------------------------------------------------------------------------------|
| EPID 573A | Basic Principles of Epidemiology (3)                                                        |
| EPID 573B | Epidemiologic Methods (3)                                                                   |
| EPID 573C | Advanced Epidemiology (3)*                                                                  |
| EPID 576A | Biostatistics in Public Health (3)                                                          |
| EPID 576B | Biostatistics for Research (3)**                                                            |
| PHCL 595B | Scientific Writing, Presentation and Bioethics (2)**                                        |
| EPID 652  | Grantsmanship for a Winning Proposal (3) **                                                 |
| EPID 675  | Clinical Trials & Intervention Studies (3)**                                                |
| EPID 696A | Epidemiology Seminar (1 unit - <b>3 times</b> ) (or equivalent approved by Faculty Advisor) |

Epidemiology Courses or Approved Electives (minimum **8 units** – approved by Faculty Advisor)

There is a maximum of 6 units from Independent Study/Research Credit (EPID 599, 699).

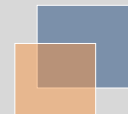
Required Master's Thesis, **EPID 910 (minimum 6 units)**

\*This course is only offered in the fall semester.

\*\*This course is only offered in the spring semester.



# Doctoral Programs



The UA Zuckerman College of Public Health is committed to offering professional and academic doctoral degree programs designed to prepare individuals for rewarding careers in public health at the local, national and international level. These programs are adept at integrating academic learning with public health practice to ensure a diverse and well-rounded educational experience.

## **Doctorate in Public Health (DrPH):**

The DrPH is an advanced, professional degree program designed for the student who has a Master of Public Health (MPH) degree or its equivalent and who intends to pursue a leadership career as a public health professional. The DrPH program focuses on developing future leaders in public health practice who will advance the public's health through the integration and application of a broad range of knowledge and analytical skills in leadership, practice, policy analysis, research, program management and professional communication.

The DrPH program prepares individuals to translate scientific knowledge into community-based programs that improve the health status of communities, identify solutions to community health problems, and provide leadership in public health policy and management within both academic and nonacademic settings, as well as in public-agency or private-sector settings that emphasize improving the health of the public. It follows that public health workers from the state and region with the requisite experience and subsequent training will be best suited and prepared for creating the administrative infrastructure necessary for promotion of a healthy public and amelioration of current public health issues in the region.

There are two key examinations associated with the DrPH program that indicate a student's progress toward obtaining the degree. The DrPH program requires students to complete a written and oral comprehensive doctoral examinations and a dissertation defense.

## **DrPH Options:**

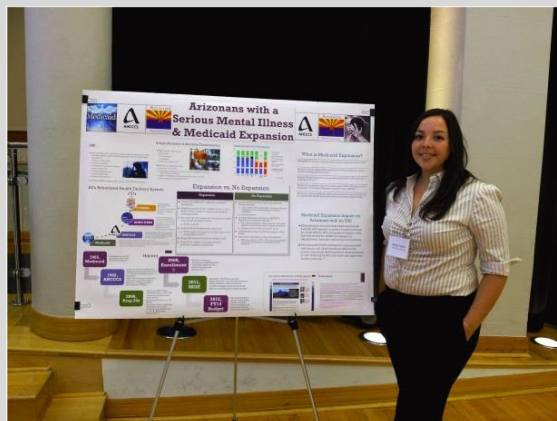
There are two areas of study available to DrPH candidates. Students are required to select either ***Maternal and Child Health*** or ***Public Health Policy and Management***. A description of each area is included on the following pages.

## **DrPH Course Requirements:**

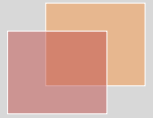
The DrPH course requirements are determined by the DrPH Section that offers the DrPH area of study. The specific course requirements for each area are listed on the following pages.

## **Prerequisites:**

Students should be aware that some of the coursework for the DrPH have pre-requisites; therefore, students work with their Faculty Advisor to plan their coursework accordingly. In addition, students without an MPH degree will be required to complete the five core MPH courses.



# DrPH – Maternal and Child Health



Nicolette Teufel-Shone, PhD – **Section Chair**

**Faculty:** Christina Cutshaw, PhD; Burris Duncan, MD; John Ehiri, PhD, MPH, MSc; Francisco Garcia, MD, MPH\*; Lynn Gerald, PhD, MSPH; Iman Hakim, MBBCh, PhD\*, MPH; Mary Koss, PhD; Velia Leybas Nuno, PhD, MSW; Irma Ramos, MD; Samantha Sabo, DrPH, MPH; Douglas Taren, PhD

The DrPH in Maternal and Child Health is offered by the Department of Health Promotion Sciences. The DrPH program in Maternal and Child Health (MCH) focuses on the population-based study of health and health care of families, infants, children, adolescents, and women of child bearing age. The program is designed to prepare students for advanced administrative, research and teaching positions. Upon completion of the program, graduates will be able to eligible for positions as instructors/faculty in the academic setting, MCH program developers, policy analysts, evaluation specialists or program directors. Graduates may also be eligible for senior administrative positions in health care organizations serving families or in MCH-related advocacy programs. These positions may be in the public or private sector at the local, state, tribal, federal, or global level.

The doctoral program typically requires four to five years for completion. The first two to three years are usually devoted to coursework, the written and oral comprehensive doctoral examinations, and the development of doctoral research proposal. The overall course of study is developed by the student and the advisor, and is approved by the student's Graduate committee and the Chair of the Maternal and Child Health Graduate Program. Students will be required to defend their dissertation research, analysis, conclusion and application through a public presentation and oral examination with their committee.

## **DrPH Admissions Criteria:**

The program is designed for students who have been awarded a Master's degree, preferably a Master of Public Health, and at least two years of public health work experience. Applicants with a Bachelor's degree and five years of public health work experience may be considered for admission into the program.

## **Required Courses:**

Of the 60 credit hours in the major, 36 are required DrPH courses, 6 units are from electives or selectives approved by the major advisor and 18 units of dissertation hours. . All students are required to designate a minor area of study that will be outside of the courses required for the DrPH. ***Students entering without a prior MPH degree will be required to complete the five core MPH courses offered through MEZCOPH, or their equivalent, in addition to the minimum DrPH credit hours of course work in the major.***

## **DrPH Required Courses (15 units)**

CPH 569 Fundamentals of Health Budgeting and Financial Management (3)

CPH 597 Service Learning (any from the series) (1)

CPH 608A Public Health Law and Ethics (3)

CPH 609 Evaluating the Public Health Literature (1 unit – **2 times**)

CPH 628 Public Health Research & Evaluation (3) **OR** CPH 544 Fundamentals of Evaluation (3)

CPH 642 Public Health Communications (3)

\*not currently advising students

**DrPH Maternal and Child Health Required Courses (21 units)**

- CPH 564 Special Topics in FCH: Public Health Leadership Seminar (1 unit – **3 times**) (3)  
CPH 564 Special Topics in FCH: Integrative Methods (3)  
CPH 565 Public Health Advocacy (3)  
CPH 605 Community Based Participatory Action Research to Decrease Health Disparities (3)  
CPH 650 Applied Public Health Theory (3)  
CPH 652 Grantsmanship for a Winning Proposal (3)  
CPH 682 Women and Children Health Policy (3)

**Concentration Electives or Selectives (minimum 6 units – approved by Faculty Advisor)**

**Minor (minimum 9 units)** The minor area of study can be in other academic doctoral programs in Public Health, or in other doctoral programs throughout the university. The minor area of study specifies the number of required minor units (minimum = 9 units).

**Dissertation (minimum 18 units)** The dissertation is expected to analyze and propose solutions to health management or policy issues by applying new theoretical or analytic advances to current problems in health care.

**DrPH in Maternal and Child Health – Total Minimum Credit Requirements: 69 units**





# DrPH – Public Health Policy and Management

Michael Halpern, MD, PhD, MPH – **Section Chair**

**Faculty:** Gail Barker, PhD, MBA; Leila Barraza, JD, MPH; Elizabeth Calhoun, PhD, MEd; Daniel Derksen, MD; Howard Eng, DrPH, MS; Joe Gerald, MD, PhD; Cecilia Rosales, MD, MS; Kenneth Schachter, MD, MBA; Ernest Schloss, PhD; Joe Tabor, PhD

The DrPH program in Public Health Policy and Management is offered by the Department of Community, Environment and Policy. The doctoral degree program in public health develops leaders and managers of public and private sectors who have proficiency in public health analysis, management, critical thinking, teaching and the translation of research into policy and practice. Our graduates will have the skills to work with diverse populations, building on extensive collaboration at the community level.

The doctoral program typically requires four to five years for completion. The first two to three years are usually devoted to coursework, the written and oral comprehensive doctoral examinations, and the development of doctoral research. The overall course of study is developed by the student and the advisor, and is approved by the student's Graduate committee and the Chair of the Public Health Policy and Management Graduate Program. Students will be required to defend their dissertation through a public presentation and oral examination with their committee.

## **DrPH Admissions Criteria:**

The program is designed for students who have been awarded a Master's degree, preferably a Master of Public Health, and at least two years of public health work experience. Applicants with a Bachelor's degree and five years of public health work experience also will be considered for admission.

## **Required Courses:**

Of the 37 credit hours in the major, 17 will be from required DrPH courses and the remaining 20 units will be course work specific to the area of concentration and electives approved by the major advisor. All students are required to designate a minor area of study that will be outside of the courses required for the DrPH. ***Students entering without a prior MPH degree will be required to complete the five core MPH courses offered through MEZCOPH, or their equivalent, in addition to the minimum DrPH credit hours of course work in the major.***

## **DrPH Required Courses (17 units)**

CPH 569 Fundamentals of Health Budgeting and Financial Management (3)  
CPH 608A Public Health Law and Ethics (3)  
CPH 609 Evaluating the Public Health Literature (1 unit – **2 times**)  
CPH 628 Public Health Research & Evaluation (3) **OR** CPH 544 Fundamentals of Evaluation (3)  
CPH 642 Public Health Communications (3)  
Higher Levels Methods Course \* (3)

\*Approval from Faculty Advisor

Of the remaining 20 units in the major, 11 units will be specific to the area of concentration, and 9 units will be from electives approved by the major faculty advisor.

**Public Health Policy and Management Required Courses (11 units)**

CPH 617 Advanced Public Health Policy Analysis (3)

CPH 641 Health Systems Delivery (3)

Community and Cultural Sensitivity Course \* (3)

MEZCOPH Field Courses \* (2)

\*Approval from Faculty Advisor

**Concentration Electives (minimum 9 units - approved by Faculty Advisor)**

**Minor (minimum 9 units)**

The minor area of study can be in other academic doctoral programs in Public Health, or in other doctoral programs throughout the university. The minor area of study specifies the number of required minor units (minimum = 9 units).

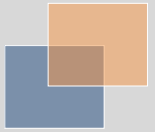
**Dissertation (minimum 18 units)**

The dissertation is expected to analyze and propose solutions to health management or policy issues by applying new theoretical or analytic advances to current problems in health care.

**DrPH in Public Health Policy and Management - Total Minimum Credit Requirements: 64 units**



# PhD Minor in Public Health

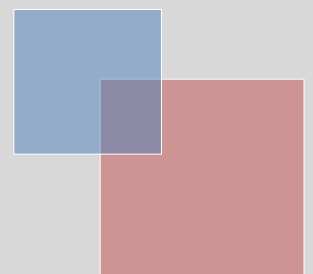


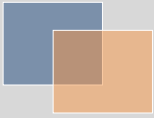
The PhD minor in Public Health is designed for individuals from other University of Arizona doctoral degree programs who wish to obtain graduate training in Public Health. The student identifies at least one faculty member with a primary appointment in MEZCOPH to serve on his or her committee. The student should hold a Planning Committee meeting where the committee faculty can provide advisement to the student regarding coursework.

## PhD Minor in Public Health Total Minimum Credit Requirements (15 units)

***The Public Health minor consists of a minimum of three Master of Public Health Core courses and two concentration specific courses agreed to by the student and his or her minor advisor.*** At the time the selections are made, the minor advisor and the student will define how competency will be determined. The demonstration may take several forms consistent with the practices of the home department. The minor member may contribute to the formulation of the comprehensive exam; the minor member may submit a specific written question; the minor may require participation in an active public health experience with a written summary to cite only a few examples. Other approaches are permissible with the consent of the student's graduate committee.

In addition to the PhD minor in Public Health, The University of Arizona Mel and Enid Zuckerman College of Public Health (MEZCOPH) offers a **Master of Public Health (MPH)** degree featuring seven concentration areas. Students can apply to the **MPH Program** within any of the concentrations areas. The MPH can also serve as the students PhD minor, although the MPH requirements must be completed prior to completion of the PhD. For more information regarding the MPH program in general, please refer to the following website: <http://publichealth.arizona.edu/academics/mph>





# Doctorate in Biostatistics (PhD)

Denise Roe, DrPH – **Section Chair**

**Faculty:** Melanie Bell, PhD; Dean Billheimer, PhD; Z. John Daye, PhD; Angelika Gruessner, PhD; Paul Hsu, PhD; Chengcheng Hu, PhD; Duane Sherrill, PhD, Professor Emeritus, Jin Zhou, PhD

The PhD in Biostatistics is offered by the Department of Epidemiology and Biostatistics. The doctoral degree program in Biostatistics will have an emphasis on the foundations of statistical reasoning and will require its graduates to complete rigorous training in applied probability and statistical analyses. This program prepares students who have demonstrated excellence in mathematics and the sciences to become research biostatisticians in academia, industry, or government.

The PhD program in Biostatistics is designed for individuals having strong quantitative skills with a background or interest in the biological, medical, or health sciences, and potential to become effective researchers in biostatistics. Applicants for the PhD in Biostatistics must have a prior Bachelor's degree. Applicants with a Master's degree in biostatistics, statistics, or applied mathematics will be given preference for admission and financial support. To the extent possible, the curriculum of each student will be tailored to his or her background and interests. A competitive applicant to the PhD in Biostatistics will have a strong quantitative background; at least three semesters of college-level calculus through multivariable/vector calculus is required; in addition, one semester of linear algebra is strongly recommended.

The doctoral program requires approximately four to five years for completion. The first two years of this time are usually devoted to coursework, the comprehensive doctoral examinations, and development of doctoral research. The program is research oriented and centers on a major research project. The overall course of study is developed by the student and the Faculty Advisor, and is approved by the student's Graduate committee and the Chair of the Biostatistics Section. Students will be required to defend their dissertation through a public presentation and oral examination with their committee.

## **Credit Hours:**

The curriculum requires a minimum of 47 units of course work in the major, of which 32 units are from required courses and 15 are electives. Students are required to select a minor and complete 9 semester hours or more (depending on requirements of the minor department) in their area of interest, and a minimum of 18 units of dissertation credit.

Students entering the program with a Bachelor's degree and limited undergraduate biology course work will be required to take "Biology in Public Health Research and Practice" (CPH 505).

Students, who enter the Biostatistics PhD program after completion of an MPH with a concentration in Biostatistics from MEZCOPH, may use 23 units towards the Biostatistics PhD. Thus, students with an MPH must complete a minimum of 18 additional units of course work, 6 units of seminar, 9 units or more in a minor subject, and 18 dissertation units. They will be allowed to substitute more advanced courses for any required courses already completed.

## PhD in Biostatistics Curriculum:

### **Required Courses (32 units)**

|           |                                                       |
|-----------|-------------------------------------------------------|
| MATH 564  | Theory of Probability (3)                             |
| MATH 566  | Theory of Statistics (3)                              |
| CPH 573A  | Basic Principles of Epidemiology (3)                  |
| CPH 576B  | Biostatistics for Research (3)                        |
| CPH 685   | Special Topics in Biostatistics (3)                   |
| CPH 687   | Theory of Linear Models (3)                           |
| CPH 688   | Statistical Consulting (3)                            |
| STAT 571B | Design of Experiments (3)                             |
| STAT 675  | Statistical Computing (3)                             |
| PHCL 595B | Scientific Writing, Presentation<br>and Bioethics (2) |
| CPH 696S  | Biostatistics Seminar (1 unit; <b>2 times</b> )       |
| CPH 609   | Evaluating Public Health Literature (1)               |



### **Elective Courses (15 units)**

|          |                                                      |
|----------|------------------------------------------------------|
| CPH 576C | Applied Biostatistics Analysis (3)                   |
| CPH 576D | Data Management and the SAS Programming Language (3) |
| CPH 647  | Analysis of Categorical Data (3)                     |
| CPH 648  | Analysis of High Dimensional Data (3)                |
| CPH 675  | Clinical Trials and Intervention Studies (3)         |
| CPH 677  | Genetic Association Studies (3)                      |
| CPH 686  | Survival Analysis (3)                                |

Electives may also be chosen from other Statistics or Mathematics courses with approval of the Biostatistics Faculty.

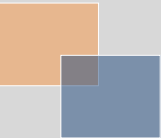
**Note:** CPH 576A, Biostatistics in Public Health (3 units), is considered a prerequisite, which will have been met by most entering students.

### **Minor (minimum 9 units)**

Each PhD student must complete a minimum of 9 credit hours of course work in a minor area. The minor area of study specifies the number of required minor units. This should consist of a coherent set of courses in an area (or in related areas) of application of biostatistics; the courses may be from more than one program. Minor courses should be primarily applied as opposed to mathematics/statistical in nature.

### **Dissertation (18 units)**

### **PhD in Biostatistics Total Minimum Credit Requirements (74 units)**



# PhD Minor in Biostatistics

The PhD minor in Biostatistics is administered by the Biostatistics Section in MEZCOPH. The PhD Minor in Biostatistics is designed for individuals from other University of Arizona doctoral degree programs who wish to obtain graduate training in Biostatistics. *A total of 15 course credits are required.* Admission to the minor must be approved by the Biostatistics minor faculty representative and the Biostatistics Section Chair, no later than enrollment in the second minor course. Selection of courses must be performed in consultation with the Biostatistics minor faculty representative.

## PhD Minor in Biostatistics Requirements:

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### Minor Courses (*minimum of 15 units*)

|           |                                                      |
|-----------|------------------------------------------------------|
| CPH 576C  | Applied Biostatistics Analysis (3)                   |
| CPH 576D  | Data Management and the SAS Programming Language (3) |
| CPH 647   | Analysis of Categorical Data (3)                     |
| CPH 648   | Analysis of High Dimensional Data (3)                |
| CPH 675   | Clinical Trials and Intervention Studies (3)         |
| CPH 677   | Genetic Association Studies (3)                      |
| CPH 688   | Statistical Consulting (3)                           |
| CPH 686   | Survival Analysis (3)                                |
| CPH 687   | Theory of Linear Models (3)                          |
| MATH 564  | Theory of Probability (3)                            |
| MATH 566  | Theory of Statistics (3)                             |
| STAT 571B | Design of Experiments (3)                            |
| STAT 675  | Statistical Computing (3)                            |

It is the responsibility of the student to have met prerequisites (if not already required for the student's Major), such as:

|           |                                |
|-----------|--------------------------------|
| EPID 576A | Biostatistics in Public Health |
| EPID 576B | Biostatistics for Research     |





# Doctorate in Environmental Health Sciences (PhD)

Kelly Reynolds, MSPH, PhD – *Section Chair*

**Faculty:** Paloma Beamer, PhD; Jeff Burgess, MD, MS, MPH; Robert Canales, PhD, MS; Stephanie Griffin, PhD, CIH; Philip Harber, MD, MPH; Eric Lutz, PhD, CMSP; Mary Kay O'Rourke, PhD; Mary Poulton, PhD; Terry Stobbe, PhD, CIH, CSP, CPE

The PhD in Environmental Health Sciences is offered by the Department of Community, Environment and Policy. Using an interdisciplinary approach, Environmental Health Sciences examines the critical link between environmental and occupational exposures and human health.

The degree prepares individuals to research, evaluate, and control health risks posed by chemical and biological contaminants and physical exposures (noise, heat and radiation) in communities and occupational environments. Students will receive advanced training and experience in the application of epidemiological and community-based research methods, statistical analysis, exposure assessment, environmental modeling, toxicology, and intervention design. Graduates of this program will apply theory and methods to public health research, evaluation, analysis and decision-making.

The Doctorate in Environmental Health Sciences trains students for research careers and leadership roles in academia, government agencies, research institutes, consulting firms and industry. The program is designed for individuals with a variety of scientific backgrounds. Our faculty and students come from diverse backgrounds with advanced training in: medicine, ecology and evolutionary biology, geology, microbiology, engineering, architecture, nutrition, and policy.

Entry into the PhD program requires successful completion of a master's degree in a related field. The PhD program requires approximately three to five years for completion. At least 47 credits are required for the major, plus a minimum of 18 dissertation units, and at least 9 units for a minor in another department. The course of study and dissertation will be developed by the student, the faculty advisor and their committee.

## PhD Course Requirements

The PhD requires at least 72 credits (including a minimum of 21 units of electives; a minimum of 18 dissertation units, and a minimum of 9 units for the minor).<sup>\*</sup> The overall course of study will be developed by the student and the faculty advisor and approved by the student's Graduate Committee and Chair of the Environmental Health Sciences Section.



## Required Courses for the PhD in EHS Curriculum:

### **Required Major Courses: (24 units)**

|          |                                                                       |
|----------|-----------------------------------------------------------------------|
| CPH 573A | Basic Principles of Epidemiology (3)                                  |
| CPH 576A | Biostatistics in Public Health (3)                                    |
| CPH 576B | Biostatistics for Research (3)                                        |
| CPH 584  | Fundamentals of Industrial and Environmental Health (3)               |
| CPH 502  | Environmental Monitoring and Analysis (3)                             |
| CPH 653  | Applied Exposure Assessment (3)                                       |
| CPH 609  | Evaluating Public Health Literature (1)                               |
| CPH 696R | Environmental Health Seminar (1 unit each semester – <b>5 times</b> ) |

**Elective Courses:** Minimum of 21 elective units required for the PhD; (approved by faculty mentor). Students select courses in areas of emphasis: Exposure Science and Risk Assessment; Climate and Health; Environmental Contaminant Modeling; and Occupational Health and Safety.

### **Minor Courses** = minimum of 9 units\*

***Environmental Health Sciences students must complete a minor of at least 9 units from another area of study.*** Minors that may interest students in this program include: Biostatistics, Epidemiology, Water Quality, Global Climate Change, Environmental Planning, Applied Mathematics, Engineering, Atmospheric Sciences, and Soil, Water and Environmental Science, just to name a few. With committee approval, a minor may be selected from any program of study at the University of Arizona that offers a doctoral degree.

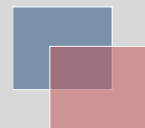
\*Requirements for a PhD minor in individual departments may vary. Required elective hours will be reduced if the minor exceeds 9 units.

### **Dissertation** – minimum of 18 units required

### **PhD in Environmental Health Sciences Total Minimum Credit Requirements (72 units)**



# PhD Minor in Environmental Health Sciences



***The PhD minor in Environmental Health Sciences*** is for majors outside Environmental Health Sciences and is administered by the Environmental Health Sciences Section in MEZCOPH. **A total of 15 course units are required** as well as successful completion of written and oral questions during the PhD comprehensive exam and successful defense of the dissertation. Consult the UA catalog for further details on the current course schedule and specific course requirements.

## **PhD Minor in Environmental Health Sciences Requirements:**

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### **Total Minimum Credit Requirements 15 units including:**

- CPH 502 Environmental Monitoring Methods (3)
- CPH 518 Introduction to Human Health Risk Assessment (3)
- CPH 584 Fundamentals of Industrial and Environmental Health (3)
- 2 additional courses (3 units each) approved by the EHS minor faculty advisor (6)

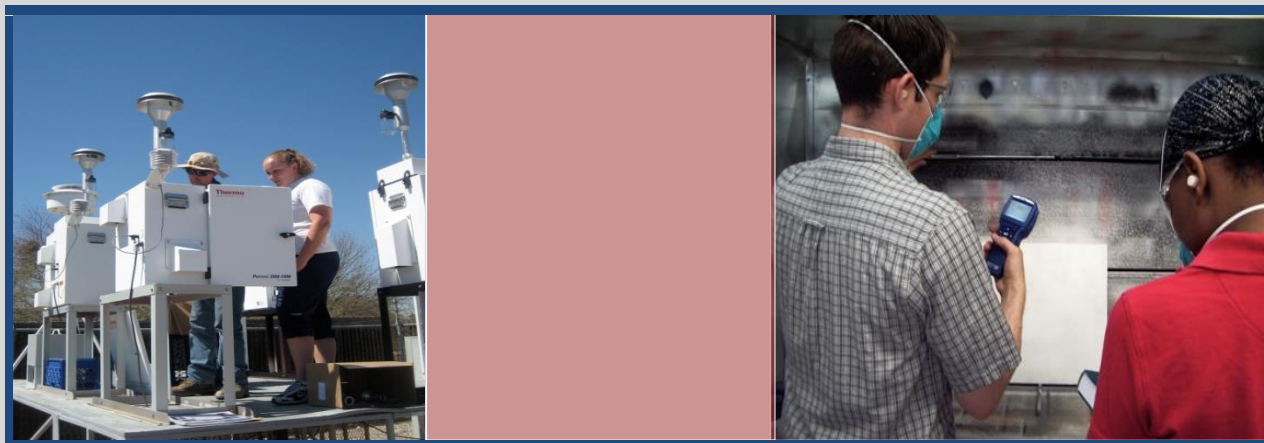
A list of EHS courses can be found obtained from the EHS Section Chair and are listed in the UA catalog under the College of Public Health (CPH).

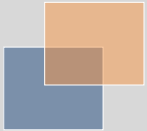
### **Transfer of Credits for the PhD Minor**

Graduate credit earned at other approved institutions may be counted toward fulfilling the PhD Minor requirements, if approved by the minor faculty mentor, the section chair of the Environmental Health Sciences Section and the student's graduate committee. All transferred credit must be at the graduate level with a grade of A or B. The Doctoral Plan of Study requires a listing of all courses the student seeks to transfer from another institution. See the Graduate College website for further details.

### **Declaration of Minor**

Meet with the section chair of the Environmental Health Sciences Section to discuss the minor. Complete the Declaration of the Minor Form, identify an Environmental Health Sciences minor and seek EHS Faculty Approval through the section chair. The Declaration of Minor form must be filed with the MEZCOPH Academic Progress Coordinator, in the MEZCOPH Office of Student Services (Drachman Hall, Room A302).





# Doctorate in Epidemiology (PhD)

Elizabeth Jacobs, PhD – **Section Chair**

**Faculty:** Heidi Brown, PhD, MPH; Zhao Chen, PhD, MPH; Leslie Dennis, MS, PhD; Kacey Ernst, PhD, MPH; Janet Foote, PhD; Robin Harris, PhD, MPH; Yann Klimentidis, PhD; Eyal Oren, PhD; Sydney Pettygrove, PhD; Kristen Pogreba Brown, PhD, MPH; Eyal Shahar, MD, MPH

The PhD in Epidemiology is offered by the Department of Epidemiology and Biostatistics. Epidemiology is the scientific discipline concerned with the causes and prevention of human disease. Epidemiology focuses on the occurrence of disease among human populations, considering changes within populations over time and differences among and between populations in disease risk. Epidemiologists today are involved in attempts to understand the causes and means of controlling AIDS and other infectious diseases, as well as chronic diseases including cancer and coronary heart disease. Much of our understanding of the links between sexual practices and AIDS risk, of smoking and cancer, of serum cholesterol and coronary heart disease, of obesity and mortality risk and of air pollution and chronic lung disease derives from epidemiologic studies.

The PhD in Epidemiology trains individuals for careers in research and teaching in academic settings, research institutes, government agencies and industry. It has been designed for students whose careers will focus on conducting investigator-initiated and collaborative epidemiologic research. On average, the doctoral program requires approximately four to five years for completion. The first two years of this time are usually devoted to coursework, the qualifying exam, the comprehensive doctoral examinations, and development of doctoral research. The program is research oriented and centers on a major research project.

## **PhD Course Requirements**

At least 46 units are required for the major (including up to 10 units of independent study), plus a minimum of 18 dissertation units, and at least 9 units minimum for the minor (depending on minor department requirements). Consult the course listings for further details on the specific course requirements and schedules. The overall course of study will be developed by the student and the advisor and approved by the student's Graduate Committee and Chair of the Epidemiology Section. Students will be required to defend their dissertation through a public presentation and oral examination with their committee. Please refer to the Epidemiology Student Handbook for additional information.

## **PhD in Epidemiology Curriculum:**

### **Required Major Courses (29 units)**

|           |                                                                                                     |
|-----------|-----------------------------------------------------------------------------------------------------|
| EPID 573A | Basic Principles of Epidemiology (3)                                                                |
| EPID 573B | Epidemiologic Methods (3)                                                                           |
| EPID 573C | Advanced Epidemiology (3)                                                                           |
| EPID 576A | Biostatistics in Public Health (3)                                                                  |
| EPID 576B | Biostatistics for Research (3)                                                                      |
| PHCL 595B | Scientific Writing, Presentation and Bioethics (2)                                                  |
| CPH 609   | Evaluating the Public Health Literature (1 unit, <b><i>fall semester of first year</i></b> )        |
| EPID 660  | Infectious Disease Epidemiology (3)                                                                 |
| EPID 670  | Chronic Disease Epidemiology (3)                                                                    |
| EPID 696A | Epidemiology Seminar (1 unit – <b>3 times</b> ) ( <b>or equivalent</b> approved by Faculty Advisor) |
| EPID 796A | Epidemiology Doctoral Seminar (1 unit – <b>2 times</b> )                                            |



**Electives** (17 or more units required; 12 of which must be in Epidemiology/Biostatistics, with at least (3) EPID units in a Biostatistics course beyond EPID 576B).

Note: maximum of 10 units of Independent Study/Research Credit (EPID 599, 699, 799, 900).

**Minor Courses** - According to Graduate College Policy, PhD students must choose at least one supporting minor subject, in addition to the major subject. The selection of a minor subject area is the responsibility of the student, in consultation with their faculty advisor and/or Graduate Committee Chair. The minor area of study specifies the number of required minor units and examinations (**minimum required= 9 units**).

**Dissertation** – EPID 920 - minimum of 18 units required

**PhD in Epidemiology Total Minimum Credit Requirements (73 units)**



# PhD Minor in Epidemiology

The PhD minor in Epidemiology is designed for individuals from other University of Arizona doctoral degree programs who wish to obtain graduate training in Epidemiology. A member of the primary Epidemiology faculty will serve as the Minor Advisor and sit on the student's graduate committee.

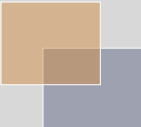
The PhD minor in Epidemiology is administered by the Epidemiology Graduate Program. A total of **15 course units** are required (see the course listings for further details on the specific course requirements and schedule).

## **Required PhD Minor in Epidemiology Courses (at least 15 units)**

EPID 573B Epidemiologic Methods (3)\*  
EPID 573C Advanced Epidemiology (3)  
EPID 576A Biostatistics for Public Health (3)  
EPID 576B Biostatistics for Research (3)  
EPID Elective The elective must be 600-level or above (to be approved by Epidemiology Minor Advisor) (3)

Note on required PhD minor in Epidemiology coursework:

- **\*Minor course prerequisites:** It is the responsibility of the student to have met course prerequisites (if not already required for the student's major): \*EPID 573A, Basic Principles of Epidemiology
- **Minor GPA requirement:** 3.5/4.0 scale in the required PhD Minor in Epidemiology courses.



## Doctorate in Health Behavior Health Promotion (PhD)

Scott Carvajal PhD, MPH, *Section Chair*

**Faculty:** Richard Carmona, MD, MPH; Patricia Haynes, PhD; Brent Langellier, PhD; Sheila Parker, DrPH; Kerstin Muller Reinschmidt, PhD, MPH; Cynthia Thomson, PhD, RD, CSO; Ronald Watson, PhD; Nicole Yuan, PhD

The PhD in Health Behavior Health Promotion (HBHP) is offered by the Department of Health Promotion Sciences. The doctoral degree program in Health Behavior Health Promotion will have an emphasis on the biological, behavioral, and socio-cultural determinants of health and health behavior, and the interventions and policies aimed at improving community and population health. The PhD program includes instruction in behavioral sciences, public health practice and policy, human services, and research methods. The doctoral program will offer a diverse and challenging curriculum that addresses health behavior health promotion theory, knowledge/skills in working on health issues within the diverse communities of the Southwest US, mixed qualitative/quantitative research methods, statistics, and grant development skills. Students will further specialize in one or more areas by methodology (applicable quantitative and qualitative methods) and/or topic--examples include promoting population health equity in one or more underserved communities of the State or developing/testing theory-based healthy lifestyle promotion interventions.

The requirement for entry into the PhD will be a bachelor's degree. Outstanding course performance and strong evidence for research interests/aptitude in health behavior health promotion is required for all admitted students. Applicants without a prior related master's degree will complete a Master of Science in Public Health (MSPH) in route to their PhD in Health Behavior Health Promotion. For students admitted to the PhD program without a prior related master's degree, the MSPH develops the student's ability to think critically, develop and execute research, while also providing depth in health behavior health promotion, epidemiology and biostatistics. These skills are essential to the success of a future PhD student and future health promotion health behavior scholar. Students are expected to complete the MSPH as a required component of this program when entering without a prior master's degree. Except for the thesis credits, all internal MSPH coursework will apply toward the PhD provided the student received an A or B grade.

The MSPH is not a stand-alone degree; students interested in graduate studies in health behavior health promotion who are uncertain of a research career focus are encouraged to discuss applying for the Master of Public Health (MPH) with section faculty and MEZCOPH's Office of Student Affairs. The latter professional degree (MPH with a concentration in HBHP) affords sound preparation for the PhD program while foremost being designed as a functional terminal degree for immediate workforce entry.

The doctoral program requires approximately four to five years for completion. The first two years of this time are usually devoted to coursework, the comprehensive doctoral examinations, and development of doctoral research. The program is research oriented and centers on a major research project. The overall course of study is developed by the student and the Faculty Advisor, and is approved by the student's Graduate committee and the Chair of the Health Behavior Health Promotion Section. Students will be required to defend their dissertation through a public presentation and oral examination with their committee.



### **Credit Hours:**

For students entering **with** a master's degree, the PhD curriculum will require a minimum of 63 credit hours (units). Of this, 15 units are required from major courses: 3 units are required on US minority/health disparities; 3 units on advanced grant proposal development; 6 units on health promotion research content electives, 9 units of other electives, 9 units (minimum) for the minor; and 18 units for the dissertation. A maximum of 30 units from a prior degree may be applied towards an admitted student, pending review by the student's advisory committee. The **63 unit** curriculum is detailed below:

### **PhD in Health Behavior Health Promotion Curriculum:**

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#### **Required Major Courses (15 units)**

|           |                                                                    |
|-----------|--------------------------------------------------------------------|
| CPH 573A  | Basic Principle of Epidemiology (3)                                |
| CPH 576B* | Biostatistics for Research (3)                                     |
| CPH 607   | Qualitative Research Methods in Public Health (3)                  |
| CPH 650*  | Applied Public Health Theory (3)                                   |
| CPH 609   | Evaluating the Public Health Literature (1)                        |
| CPH 696L  | Health Behavior Health Promotion Seminar (1 unit; <b>2 times</b> ) |

#### **Required US Minority/Health Disparities Course** (minimum **3 units**)

|         |                                                                                  |
|---------|----------------------------------------------------------------------------------|
| CPH 535 | Multicultural Health Beliefs (3) <b>or</b>                                       |
| CPH 605 | Community Based Participatory Action Research to Decrease Health Disparities (3) |

#### **\*Note:** Prerequisite Courses for:

|           |                                                            |
|-----------|------------------------------------------------------------|
| CPH 576B: | CPH 576A or other introductory graduate statistics course. |
| CPH 650:  | CPH 577 or related graduate coursework                     |

#### **Required Grant Proposal Development Emphasis Course** (minimum **3 units**)

|         |                                                     |
|---------|-----------------------------------------------------|
| CPH 628 | Public Health Research and Evaluation (3) <b>or</b> |
| CPH 652 | Grantsmanship for a Winning Proposal (3)            |

#### **Required Health Promotion Emphasis Electives** (minimum of **6 units**)

|           |                                                                                  |
|-----------|----------------------------------------------------------------------------------|
| CPH 531   | Contemporary Health Issues & Research (3)                                        |
| CPH 532A  | Applied Aspects of Program Planning, Implementation & Evaluation I (4)           |
| CPH 535** | Multicultural Health Beliefs (3)                                                 |
| CPH 577   | Sociocultural & Behavioral Aspects of Public Health (3)                          |
| CPH 605** | Community Based Participatory Action Research to Decrease Health Disparities (3) |
| CPH 619   | Topics in Health Behavior Health Promotion (3)                                   |
| CPH 622   | Applied Research Methods in Diet and Physical Activity (3)                       |
| CPH 628 § | Public Health Research and Evaluation (3)                                        |
| CPH 642   | Public Health Communications (3)                                                 |
| CPH 652 § | Grantsmanship for a Winning Proposal (3)                                         |
| CPH 671   | Social Epidemiology (3)                                                          |
| CPH 646   | Measurement Issues in Epidemiology (3)                                           |

\*\* (if not already used to fulfill the US minority health/disparities requirement)

§ (if not used to fulfill the grant proposal development requirement)

**Other Electives** (minimum 9 units; Approved by Faculty Advisor/Doctoral Committee)

These electives will often be independent studies with a research focus, public health graduate courses, or other graduate theory, content or methodology-related courses at the University, relevant to the doctoral area of study).

**Minor** (minimum 9 units)

Each PhD student must complete a minimum of 9 credit hours of course work in a minor area. The minor area of study specifies the number of required minor units. This should consist of a coherent set of courses in an area (or in related areas) of health behavior health promotion, in consultation with the PhD students faculty advisor and/or Graduate Committee Chair. These courses may be from more than one program.

**Dissertation** – CPH 920 - minimum of 18 units required

**PhD in Health Behavior Health Promotion - Total Minimum Credit Requirements:  
63 units**

**Master of Science in Public Health (MSPH)/PhD in Health Behavior Health Promotion:**

For students entering **without** a master's degree, the PhD curriculum will require a minimum of 72 credit hours (units), with 40 units required toward completing the **Master of Science in Public Health (MSPH)** / PhD. The MSPH component requires 22 required course credits: 3 units are required on US minority/health disparities; 3 units on health promotion research content electives; 6 units of other electives; and 6 units of thesis. Additional required units post completion of the MSPH include 2 additional major units; 3 units on advanced grant proposal development; 9 units (minimum) for the minor, and 18 units for the dissertation. A maximum of 8 units from prior graduate coursework (6 units from a prior awarded degree) may be considered (pending review) to be applied towards the MSPH component.

**Requirements for MSPH to PhD in Health Behavior Health Promotion for students entering without a prior master's degree:**

**Master of Science in Public Health (MSPH) requirements (40 units)**

**Required Major Courses** (22 units)

|           |                                                         |
|-----------|---------------------------------------------------------|
| CPH 531   | Contemporary Health Issues & Research (3)               |
| CPH 573A  | Basic Principles of Epidemiology (3)                    |
| CPH 576A  | Biostatistics in Public Health (3)                      |
| CPH 576B* | Biostatistics for Research (3)                          |
| CPH 577   | Sociocultural & Behavioral Aspects of Public Health (3) |
| CPH 607   | Qualitative Research Methods in Public Health (3)       |
| CPH 650*  | Applied Public Health Theory (3)                        |
| CPH 696L  | Health Behavior Health Promotion Seminar (1)            |

**\*Note:** Prerequisite Courses for:

- CPH 576B: CPH 576A or other introductory graduate statistics course.  
CPH 650: CPH 577 or related graduate coursework

**Required US Minority/Health Disparities Course** (minimum 3 units)

CPH 535      Multicultural Health Beliefs ) (3) **or**  
CPH 605      Community Based Participatory Action Research to Decrease Health  
Disparities (3)

**Required Health Promotion Emphasis Electives** (minimum of 3 units)

CPH 532A      Applied Aspects of Program Planning, Implementation & Evaluation I (4)  
CPH 535\*\*      Multicultural Health Beliefs (3)  
CPH 605\*\*      Community Based Participatory Action Research to Decrease Health  
Disparities (3)  
CPH 619      Topics in Health Behavior Health Promotion (3)  
CPH 622      Applied Research Methods in Diet and Physical Activity (3)  
CPH 628      Public Health Research and Evaluation (3)  
CPH 642      Public Health Communications (3)  
CPH 652      Grantsmanship for a Winning Proposal (3)  
CPH 671      Social Epidemiology (3)  
CPH 646      Measurement Issues in Epidemiology (3)

**Other Electives** (Minimum of 6 units, approved by Faculty Adviser)

**Required Master's Thesis:** CPH 910 (minimum 6 units)

**Additional core requirements for the PhD post completion of the MSPH (32 units)**

**Required Courses** (minimum of 2 units)

CPH 609      Evaluating the Public Health Literature (1)  
CPH 696L      HBHP Seminar (1)

**Required Grant Proposal Development Emphasis Course** (minimum 3 units) §

CPH 628 §      Public Health Research and Evaluation (3) **or**  
CPH 652 §      Grantsmanship for a Winning Proposal (3)

§ **Note:** A course for this requirement may **not** also be counted towards a requirement described prior)

**Approved Minor** (minimum 9 units required)

Each PhD student must complete a minimum of 9 credit hours of course work in a minor area. The minor area of study specifies the number of required minor units. This should consist of a coherent set of courses in an area (or in related areas) of health behavior health promotion, in consultation with the student's faculty advisor and/or Graduate Committee Chair. These courses may be from more than one program

**Dissertation** – CPH 920 – (minimum of 18 units required)

**MSPH/PhD in Health Behavior Health Promotion - Total Minimum Credit Requirements:  
72 units**

# PhD Minor in Health Behavior Health Promotion

The PhD minor in Health Behavior Health Promotion (HBHP) is designed for individuals from other University of Arizona doctoral degree programs who wish to obtain graduate training in Health Behavior Health Promotion and is administered by the HBHP Section in MEZCOPH.

A total of **15 course units** are required, as well as successful completion of written and oral questions during the PhD Comprehensive exam, and successful defense of the dissertation. Consult the UA catalog and UA schedule of classes for further details and specific course requirements.

## **Required PhD Minor in Health Behavior Health Promotion Courses (at least 15 units):**

CPH 650 Applied Public Health Theory (3)

### **Choose (1) course from the following:**

CPH 535 Multicultural Health Beliefs (3) **or**

CPH 605 Community Based Participatory Action Research to Decrease Health Disparities (3)

### **Choose (2) courses from the following:**

CPH 577 Sociocultural & Behavioral Aspects of Public Health (3)

CPH 531 Contemporary Health Issues & Research (3)

CPH 607 Qualitative Research Methods in Public Health (3)

CPH 605 Community Based Participatory Action Research to Decrease Health Disparities (3)  
*(if not used to fulfill the above requirement)*

CPH 622 Applied Research Methods in Diet and Physical Activity (3)

CPH 628 Public Health Research and Evaluation (3)

EPID 671 Social Epidemiology (3)

CPH 619 Topics in Health Behavior Health Promotion (3)

One additional course (**minimum 3 units**) - Approved by the HBHP minor Faculty Advisor (3)

