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Mel and Enid Zuckerman  
College of Public Health

# *Academic Catalog* 2009-2010

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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.

## Bachelor of Science in Public Health

**Director:** Joe K. Gerald, MD, PhD

**Faculty:** Paloma Beamer, PhD; Jeff Burgess, MD, MPH; Peter Giacobbi, PhD;  
Norma Gray, PhD; Robin Harris, PhD, MPH; Mary Koss, PhD; Mary Kay O'Rourke, PhD;  
Kirsten Reinschmidt, PhD, MPH; Lisa Staten, PhD; Douglas Taren, PhD; Ron Watson, PhD

**Academic Advisor:** Alan Beaudrie

The Bachelor of Science in Public Health (BSPH) is offered by the Mel and Enid Zuckerman College of Public Health. The BSPH is designed to promote an understanding of health and disease based on public health principles. The primary goal of the program is to train public health professionals who will seek to improve the quality of life of individuals and communities within Arizona. The curriculum provides general knowledge regarding public health principles and practice augmented by concentrated study (tracks) in Environmental and Occupational Health and Health Behaviors. 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. 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 at 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 including two letters of recommendation, 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**.

## **PUBLIC HEALTH CURRICULUM**

### **Minimum Public Health Major Credit Requirement = 64 units**

#### Required Core Courses (34 units)

ENGL 308	Technical Writing (3)
CPH 3xx	Epidemiology (3)
CPH 300	Community Health Sciences and Services (3)
CPH 310	Health Care in the US (3)
CPH 376	Introduction to Health Statistics (4)
CPH 381	Public Health Planning and Evaluation Methods (3)
CPH 4xx	Health Disparities and Inequalities (3)
CPH 433	Global Health (3)
CPH 478	Maternal and Child Health Nutrition (3) <b>or</b>
NSC 310	Principles of Nutrition in Health and Disease (3)
CPH 493	Field Work in Public Health (6)

#### Track Courses (9 units)

##### Environmental and Occupational Health Track

CPH 418	Introduction to Health Risk Assessment (3)
CPH 484	Fundamentals of Industrial and Environmental Health (3)
CPH 489	Public Health Preparedness (3)

##### Health Behaviors Track

CPH 306	Drugs and Society (3)
CPH 330	Human Sexuality (3)
CPH 449	Family Violence (3)

##### CPH Electives\* (12 units)

CPH 321	Health Care Policy and Institutions (3) see also PA 321
CPH 322	Health Education Ethical Leadership (3)
CPH 400	Contemporary Community Health Problems (3)
CPH 409	Evolution of Infectious Disease (3) see also ECOL 409
CPH 421	Disease and Illness in Mining (3) see also M NE 421
CPH 425	Topics in Latino Health (3) see also MAS 425
CPH 444	Rethinking Race and Health in US (3) see also AFAS 444

\* See Advisor for latest update to elective course offerings.

#### General Electives (9 units)

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

## Recommended Course Sequencing – BSPH

### **First Year**

#### Fall Semester (15 units)

ENGL 308	Technical Writing (3)
CPH 300	Community Health Sciences and Services (3)
CPH 310	Health Care in the US (3)
CPH	Track Requirement 1 (3)
CPH	CPH Elective 1 (3)

#### Spring Semester (16 units)

CPH 3xx	Epidemiology (3)
CPH 376	Introduction to Health Statistics (4)
CPH 433	Global Health (3)
CPH	Track Requirement 2 (3)
	General Elective 1 (3)

### **Second Year**

#### Fall Semester (15 units)

CPH 381	Public Health Planning and Evaluation Methods (3)
CPH 478	Maternal and Child Health Nutrition (3)
CPH	Track Requirement 3 (3)
CPH	CPH Elective 2 (3)*
	General Elective 2 (3)*

\* Students may substitute CPH 493 Field Work in Public Health (6)

#### Spring Semester (18 units)

CPH 4xx	Health Disparities and Inequalities (3)
CPH	CPH Elective 3 (3)
CPH	CPH Elective 4 (3)
	General Elective 3 (3)
CPH 493	Field Work in Public Health <sup>#</sup> (6)

<sup>#</sup>Co-requisites/prerequisites for CPH 493 Field Work in Public Health are admission to the major and CPH 381.

## **MASTER OF PUBLIC HEALTH**

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The 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 professionals 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.

### **MPH DEGREE OPTIONS**

The UA Zuckerman College of Public Health offers an MPH program in which students acquire a sound academic background for competent practice in the field of public health. MPH students are required to select one of the six concentration areas listed below:

#### **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.

#### **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 families and children. Students entering the FCH concentration must choose a plan of work in one of two specialized areas: maternal and child health or international health. 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. In addition, each student will develop with an advisor an individualized plan of study for their area of specialization.

### **Health Behavior and Health Promotion**

The Health Behavior and 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.

### **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 non-occupational environments. The teaching faculty has experience in industrial hygiene, occupational and environmental health, toxicology, occupational and preventive medicine, environmental sciences and epidemiology. Concentration coursework includes: indoor/outdoor pollution, assessment and evaluation strategies, the toxicology of chemical agents, and implementation of research protocols.

### **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. 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.

## **MPH DEGREE REQUIREMENTS**

The MPH degree is comprised of core courses, concentration and elective courses, and an internship. Each student also will be required to produce a comprehensive, analytical, problem solving report integrating the in-class learning into the 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

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**Faculty:** Denise Roe, DrPH – Section Chair; Angelika Gruessner, PhD; Paul Hsu, PhD; Chengcheng Hu, PhD; Bonnie LaFleur, PhD, MPH; Duane Sherrill, PhD.

The MPH program in Biostatistics is offered by the Division 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 statistics, 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.

### **Total Minimum Credit Requirement = 45 units**

#### Required Core Courses (16 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)
CPH 596N	Internship Preparation (1)

#### Required Biostatistics Courses (23 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 684	General Linear and Mixed Effects Models (3)
CPH 685	Statistical Consulting (3)
CPH 909	Master's Report "Internship" (3)
CPH 696S	Biostatistics Seminar (1 unit – 2 times)

#### Elective Courses (minimum 6 units) – approved by Advisor

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)
CPH 687	Theory of Linear Models (3)
STAT 564	Theory of Probability (3)
STAT 566	Theory of Statistics (3)
STAT 571B	Design of Experiments (3)
STAT 675	Statistical Computing (3)

## Recommended Course Sequencing – Biostatistics

### **First Year**

#### Fall Semester

- CPH 573A Basic Principles of Epidemiology (3)
- CPH 575 Environmental & Occupational Health (3)
- CPH 576A Biostatistics in Public Health (3)
- CPH 576D Data Management and the SAS Programming Language (3)
- CPH 696S Biostatistics Seminar (1)

#### Spring Semester

- CPH 574 Public Health Policy & Management (3)
- CPH 576B Biostatistics for Research (3)
- CPH 577 Sociocultural & Behavioral Aspects of Public Health (3)
- CPH 696S Biostatistics Seminar (1)

#### Summer Semester

- CPH 576C Applied Biostatistics Analysis (3)

### **Second Year**

#### Fall Semester

- CPH 684 General Linear and Mixed Effects Models (3)
- CPH 685 Statistical Consulting (3)
- CPH 596N Internship Preparation (1)
- Elective (approved by Advisor)

#### Spring Semester

- CPH 647 Analysis of Categorical Data (3)
- CPH 909\* Master's Report "Internship" (3)
- Elective (approved by Advisor)

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

\*Prerequisites for CPH 909 – Master's Report "Internship": at least 3 MPH core courses.

## Environmental and Occupational Health

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**Faculty:** Mary Kay O'Rourke, PhD – Section Chair; Paloma Beamer, PhD;  
Jeff Burgess, MD, MS, MPH; Kelly Reynolds, MSPH, PhD.

The MPH degree in Environmental and Occupational Health (EOH) is offered by the Division of Community, Environment and Policy. 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 and non-occupational environments. The teaching faculty has experience in industrial hygiene, occupational and environmental health, toxicology, occupational and preventive medicine, epidemiology, microbiology, environmental sciences and engineering.

Concentration coursework includes: indoor/outdoor agents, assessment and evaluation strategies, the toxicology of chemical agents, cross-cutting relationships with changing ecosystems, and implementation of research protocols. Students perform internships to gain experience in a setting related to their professional interests. Collaborative research is facilitated; students may present their findings at professional conferences and publish their results. A technical paper or thesis is required of all students and is defended during a final oral examination.

Students selecting the EOH concentration area should have a strong background in the biological and physical sciences. Inorganic chemistry is required for admission to this concentration; organic chemistry is highly recommended.

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

### Required Core Courses (16 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)
CPH 596N	Internship Preparation (1)

### Required EOH Courses (17 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 – 2 times)
CPH 900	Research – Environmental and Occupational Health (3)
CPH 909	Master's Report "Internship" (3)

Selective Courses (minimum 9 units) – approved by Advisor

*Students select courses in one of two areas of emphasis –*

**+Environmental Health Science** or **\*Industrial Hygiene**.

\*\* Some scholarships require additional unit

Recommended Course Sequencing – EOH  
(odd year entry)

**First Year**

Fall Semester

CPH 502	Environmental Monitoring & Analysis (3)
CPH 576A	Biostatistics in Public Health (3)
CPH 584	Fundamentals of Industrial & Environmental Health (3)
CPH 696R	Environmental & Occupational Health Seminar (1 unit 2 times)
*/+IH/EH	Selective I (approved by Advisor)

Spring Semester

CPH 573A	Basic Principles of Epidemiology (3)
CPH 574	Public Health Policy and Management (3)
CPH 596N	Internship Preparation (1)
CPH 653	Control of Exposures (3)
*/+ IH/EH	Selective II (approved by Advisor)

Summer Session

@CPH 909	Master's Report "Internship" (3) or CPH 900 Research (3)
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**Second Year**

Fall Semester

CPH 577	Sociocultural & Behavioral Aspects of Public Health (3)
CPH 575	Environmental & Occupational Health (3)
CPH 696R	Environmental & Occupational Health Seminar (1 unit 2 times)
*/+ IH/EH	Selective III (approved by Advisor)

Spring Semester

CPH 653	Applied Exposure Assessment (3)
CPH 900	EOH Research (3)
+CPH 909	Master's Report "Internship" (3)
Additional Selective(s) (approved by Advisor) (6) **	

@Prerequisites for CPH 909: at least 3 MPH core courses and CPH 502, 584 and CPH 596N

Contact your Advisor for a list of selective courses appropriate to your interest area.

*Students select courses in one of two areas of emphasis:*

**+Environmental Health Science or \*Industrial Hygiene.**

\*\* Some scholarships require additional units (CPH 510, 583, 653, 655)

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

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

## **Epidemiology**

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**Faculty:** Robin Harris, PhD, MPH – Section Chair; Zhao Chen, PhD, MPH; Kacey Ernst, PhD; Janet Foote, PhD; Stefano Guerra, MD, PhD; Elizabeth Jacobs, PhD; M. Elena Martinez, PhD, MPH; Sydney Pettygrove, PhD; Eyal Shahar, MD, MPH; Patricia Thompson, PhD.

The MPH in Epidemiology is offered by the Division 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.

### **Total Minimum Credit Requirement = 44 units**

#### Required Core Courses (16 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)
CPH 596N	Internship Preparation (1)

#### Required Epidemiology Courses (25 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 660	Infectious Disease Epidemiology (3)
CPH 670	Chronic Disease Epidemiology (3)
CPH 696A	Epidemiology Seminar (1 unit – 2 times)
CPH 909	Master's Report "Internship" (6)

Elective Courses (minimum 3 units) – approved by Advisor

## Recommended Course Sequencing - Epidemiology

### **First Year**

#### Fall Semester

- CPH 573A Basic Principles of Epidemiology (3)  
CPH 574 Public Health Policy & Management (3) or other Core MPH Course\*\*  
CPH 576A Biostatistics in Public Health (3)  
CPH 596D Public Health Experience – Student Epidemiology Response Team (2)  
CPH 696A Epidemiology Seminar (1)

#### Spring Semester

- CPH 573B Epidemiologic Methods (3)  
CPH 576B Biostatistics for Research (3)  
CPH 577 Sociocultural & Behavioral Aspects of Public Health (3) OR other Core MPH Class\*\*  
CPH 596N Internship Preparation (1)  
CPH 696A Epidemiology Seminar (1)

#### Summer Semester

- CPH 909 Master's Report "Internship" (0-6) OR Elective (approved by Advisor)

### **Second Year**

#### Fall Semester

- CPH 573C Advanced Epidemiology (3)  
CPH 575 Environmental & Occupational Health (3) OR other Core MPH Class\*\*  
CPH 670 Chronic Disease Epidemiology (3)  
CPH 909 Master's Report "Internship" (0-6) OR Elective (approved by Advisor)

#### Spring Semester

- CPH 660 Infectious Disease Epidemiology (3)  
CPH 909\* Master's Report "Internship" (0-6) OR Elective (approved by Advisor)

\***CPH 909** – Master's Report "Internship" may be taken in one or more semesters and the credits may be split across semesters. Prerequisite courses for CPH 909 are: CPH 573A, CPH 576A, CPH 573B, CPH 576B.

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

## **Family and Child Health**

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**Faculty:** Nicolette Teufel-Shone, PhD – Section Chair; Christina Cutshaw, PhD, Burris “Duke” Duncan, M.D; John Ehiri, PhD, MPH, MSc; Lynn Gerald, PhD, MSPH; Norma Gray, PhD; Iman Hakim, MBBCh, PhD, MPH; Mary Koss, PhD; Douglas Taren, PhD; Ronald Watson, PhD.

The MPH in Family and Child Health is offered by the Division 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 families and children. 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 an advisor, 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.

Total Minimum Credit Requirements: MCH Track = **46 units** Global Health Track = **47 units**

### **Required Core Courses** (16 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)
- CPH 596N Internship Preparation (1)

### **Maternal and Child Health Track**

#### **Required MCH Courses** (21 units)

- CPH 586 Maternal and Child Health (3)
- CPH 630 Maternal and Child Health Epidemiology (3)
- CPH 682 Women & Children Health Policy (3)
- CHP 597A Maternal & Child Health Programs in Urban Settings (1)
- CPH 597B Maternal & Child Health Programs in Rural Southwest (1)
- CPH 696H MCH/Public Health Seminar (1)
- One Planning and/or Evaluation Course (from approved list – consult with Advisor) (3)
- Collaborative Leadership Course (required 8 sessions, non-credit)
- CPH 909 Master’s Report “Internship” (6)

**Elective Courses** (minimum 9 units) – approved by advisor

**Global Health Track**

Required Global Health Courses (22 units)

- CPH 533 Global Health (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 (3)  
CPH 696H MCH/Public Health Seminar (1)  
One Planning and/or Evaluation Course (from approved list – consult with Advisor) (3)  
CPH 909 Master’s Report “Internship” (6)

Elective Courses (minimum 9 units) – approved by advisor

## Recommended Course Sequencing – Maternal and Child 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 credits)

- CPH 597A MCH Programs in Urban Settings (1) *one week before Fall semester*
- CPH 573A Basic Principles of Epidemiology (3)
- CPH 586 Maternal & Child Health (3)
- CPH 682 Women & Child Health Policy (3)
- Elective (approved by Advisor) (3)
- CPH 696H MCH/Public Health Seminar (enroll for credit in the Spring)

#### Spring Semester (13 credits)

- CPH 630 MCH Epidemiology (3)
- CPH 577 Sociocultural & Behavioral Aspects of Public Health (3)
- Elective (approved by Advisor) (3)  
Planning/Evaluation Course (3)
- CPH 696H MCH/Public Health Seminar (1)
- Collaborative Leadership Course (required, non-credit bearing)

#### Summer Pre-Session Semester *one week after Spring semester*

- CPH 597B MCH Programs in Rural Southwest (1)

### ***Second Year***

#### Fall Semester (13 credits)

- CPH 575 Environmental & Occupational Health (3)
- CPH 576A Biostatistics in Public Health (3)
- CPH 574 Public Health Policy & Management (3)
- Elective (approved by Advisor) (3)
- CPH 596N Internship Preparation (1)

#### Spring Semester (6 credits)

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

## Recommended Course Sequencing – 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 (12 credits)

- CPH 573A Basic Principles of Epidemiology (3)
- CPH 586 Maternal & Child Health (3)
- CPH 577 Sociocultural Aspects of Public Health (3)
- Elective (approved by Advisor) (3)
- CPH 696H MCH/Public Health Seminar (enroll for credit in Spring)

#### Spring Semester (13 credits)

- CPH 533 Global Health (3)
- CPH 630 MCH Epidemiology (3)
  - or CPH 645 Nutritional Epidemiology (3)
  - or CPH 660 Infectious Epidemiology (3)
- CPH 574 Public Health Policy & Management (3)
- CPH 696H MCH/Public Health Seminar (1)
- Elective (approved by Advisor) (3)

### ***Second Year***

#### Fall Semester (13 credits)

- CPH 576A Biostatistics in Public Health (3)
- CPH 575 Environmental & Occupational Health (3)
- CPH 606 Changing Health Policy: Cultural Understanding & Epi Analysis (3)
  - Planning/Evaluation Course (3)
- CPH 696N Internship Preparation (1)

#### Spring Semester (9 credits)

- CPH 909 Master's Report "Internship" (6)
- Elective (approved by Advisor) (3)

## **Health Behavior and Health Promotion**

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**Faculty:** Lisa Staten, PhD – Section Chair; Lynda Bergsma, PhD; Richard Carmona, MD, MPH; Kathryn Coe, PhD; Peter Giacobbi, PhD; Nicole Yuan, PhD

The MPH in Health Behavior and Health Promotion (HBHP), offered by the Division 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 and 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 and Health Promotion concentration should include information regarding these factors.

### **Total Minimum Credit Requirement = 43 units**

#### Required Core Courses (16 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)
CPH 596N	Internship Preparation (1)

Required HBHP Courses (21 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 650 Applied Public Health Theory (3)
- CPH 909 Master's Report "Internship" (6)

Elective Courses (minimum 6 units) – approved by Advisor

## Recommended Course Sequencing – HBHP

### **First Year**

#### Fall Semester

- CPH 531 Contemporary Health Issues & Research (3)  
CPH 576A Biostatistics in Public Health (3)  
CPH 577 Sociocultural & Behavioral Aspects of Public Health (3)  
CPH 535 Multi Cultural Health Beliefs (3)

#### Spring Semester

- CPH 532A\* Applied Aspects of Program Planning, Implementation & Evaluation I (4)  
CPH 573A Basic Principles of Epidemiology (3)  
CPH 596E Health Education Leadership Seminar (2)  
Elective (approved by Advisor) (3)

### **Second Year**

#### Fall Semester

- CPH 574 Public Health Policy & Management (3)  
CPH 650\* Applied Public Health Theory (3)  
CPH 596N Internship Preparation (1)  
CPH 909\* Master's Report "Internship" (2)  
Elective (approved by Advisor) (3)

#### Spring Semester

- CPH 575 Environmental & Occupational Health (3)  
CPH 909\* Master's Report "Internship" (4)

- \*Prerequisites: CPH 532A: CPH 535 and CPH 577  
CPH 650: CPH 531, CPH 532A  
CPH 909: At least 3 core courses and CPH 532A

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

## Public Health Policy and Management

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**Faculty:** Douglas Taren, PhD – Interim Section Chair; Gail Barker, PhD; Merrill Eisenberg, PhD; Howard Eng, DrPH, MS; Joe Gerald, MD, PhD; Gary Hart, PhD; Lisle Hites, MS, Med, PhD; Ralph Renger, PhD; Cecilia Rosales, MD, MS; Kenneth Schachter, MD, MBA; Ernest Schloss, PhD; Anthony Vuturo, MD, MPH

**Appointed Professionals:**

Jill Guernsey de Zapien, BA; Alison Hughes, MPA; Maia Ingram, MPH

The MPH in Public Health Policy and Management is offered by the Division 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: public health experience or interest; documented experience and/or commitment to underserved areas and populations (an interest in rural and border health issues is also encouraged); passion for social justice; successful leadership experience or potential and demonstrated community service.

**Total Minimum Credit Requirement = 46 units**

Required Core Courses (16 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)
CPH 596N	Internship Preparation (1)

Required PHPM Courses (18 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 616	Public Health and Rural Policy Analysis (3)
CPH 909	Master's Report "Internship" (6)

Elective Courses (12 units) - Approved by Advisor

## Recommended Course Sequencing - PHPM

### **First Year**

#### Fall Semester

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

#### Spring Semester

- CPH 567 Public Health Leadership & Management (3)  
Elective (approved by Advisor) (3)  
Elective (approved by Advisor) (3)  
CPH 616 Public Health and Rural Policy Analysis (3)

### **Second Year**

#### Fall Semester

- CPH 569 Fundamentals of Health Budgeting & Financial Management (3)  
CPH 575 Environmental & Occupational Health (3)  
CPH 577 Sociocultural & Behavioral Aspects of Public Health (3) or CPH 576A Biostatistics in Public Health (3)  
CPH 596N Internship Preparation (1)  
Elective (approved by Advisor) (3)

#### Spring Semester

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

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

\*Prerequisites for CPH 909 – Master's Report "Internship": at least 3 MPH core courses.

## DUAL DEGREE PROGRAMS

The Mel and Enid Zuckerman College of Public Health has partnered with the College of Medicine, the College of Law, and the College of Social and Behavioral Sciences to administer four dual degree programs. 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.

### MEDICINE

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)
CPH 596N	Internship Preparation Course (1)
CPH 896I	Clinical Leadership and Administration (4)
CPH 909	Master’s Report “Internship” (12)

Electives (7 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 **any 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 M.P.H. concentration. A minimum of 50% of credit hours must be unique to each degree and cannot be used for dual credit.

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

- LAS 500 Introduction to Latin American Studies (3 units)
- LAS Interdisciplinary Seminar - approved by LAS Director (3 units)
- Primary discipline or thematic area, including 3 units of a research methods course if doing a thesis (15 units)
- International public health courses with assignments focusing on Latin America or U.S. – Mexico border (9 units)
- Language requirement met by Spanish 330 and Portuguese 305 *or* Spanish 251 and Portuguese 325 *or* equivalency exam.
- 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)

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

#### Core Courses (16 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)  
CPH 596N Internship Preparation (1)

#### Internship (3-6 units)

- CPH 909 Master’s Report “Internship” (3-6 units)

#### Required Concentration Courses (12 - 20 units)\*

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

#### Electives (6-12 units) – approved by Advisor)

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

## MEXICAN AMERICAN STUDIES

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 any 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 M.P.H. concentration. A minimum of 50% of credit hours must be unique to each degree and cannot be used for dual credit.

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

Thirty-four (34) units are required for the MS in Mexican American Studies: a minimum of 19 core units, 9 elective units from the Latino Health Strand, and the choice of a 6 unit thesis or 6 units of electives and an oral examination.

#### Required Core Courses (19 units)

MAS 508	The Mexican American: A Cultural Perspective (3)
MAS 509	Mexican Immigration (3)
MAS 520	Racial and Ethnic Health Disparities: A Comparative Approach (3)
MAS 525	Topics in Latino Health (3)
MAS 580A	Advanced Research Methods (3)
MAS 587	Chicana Gender Perspectives (3)
MAS 595A	MAS Graduate Colloquium (1)

#### Elective Courses (minimum 9 units – approved by Advisor)

#### Thesis or Examination Option (6)

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

#### Core Courses (16 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)
CPH 596N	Internship Preparation Course (1)

#### Internship (3-6 units)

CPH 909	Master's Report "Internship" (3-6)
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**Required Concentration Courses** (12-20 units)\*

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

**Electives** (6-12 units) – approved by Advisor)

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

## LAW

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 (J.D.) and a Master of Public Health (M.P.H.). 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. 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** (16 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)
CPH 596N	Internship Preparation Course (1)

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

CPH 909	Master's Report "Internship" (3-6)
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**Required Concentration Courses** (12-20 units)\*

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

**Electives** (6-12 units) – approved by Advisor)

\*The number of units varies based on the M.P.H. 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 85 graduate units to successfully complete the program. Students must be enrolled for a minimum of four semesters as a law student.

## MASTER OF SCIENCE IN EPIDEMIOLOGY

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**Faculty:** Robin Harris, PhD, MPH – Section Chair; Zhao Chen, PhD, MPH; Kacey Ernst, PhD; Janet Foote, PhD; Stefano Guerra, MD, PhD; Elizabeth Jacobs, PhD; M. Elena Martinez, PhD, MPH; Sydney Pettygrove, PhD; Eyal Shahar, MD, MPH; Patricia Thompson, PhD.

The Master of Science in Epidemiology is offered by the Division 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 MS degrees 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. Please refer to the Epidemiology Student Handbook for additional information. See the UA catalog for further details on the current course schedule and specific course requirements.

### **Total Minimum Credit Requirement = 40 units**

#### Required Major Courses (25 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) **OR** select from:
  - EPID 615a Cancer Epidemiology and Prevention (3) or
  - EPID 673 Epidemiology of Aging (3)
- EPID 696A Epidemiology Seminar (1 unit - 4 times)

#### Epidemiology Courses or Approved Electives (9 or more units – see Advisor)

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

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

## **MS in Epidemiology – Clinical Epidemiology Track**

This degree 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. Please refer to the Epidemiology Student Handbook for additional information. See the UA catalog for further details on the current course schedule and specific course requirements.

### **Total Minimum Credit Requirement = 40 units**

#### Required Major Courses (25 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 651 Bioethics & Regulation (2)
- EPID 652 Grantsmanship for a Winning Proposal (2)
- EPID 675 Clinical Trials & Intervention Studies (3)
- EPID 696A Epidemiology Seminar (or equivalent approved by Advisor) (1 unit - 3 times)

Epidemiology Courses or Approved Electives (9 or more units – see Advisor)

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

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

## **DOCTORAL PROGRAMS**

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The UA Zuckerman College of Public Health is committed to offering professional and academic doctoral degree programs designed to prepare individuals for challenging 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 is unique as it 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 these 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 three key examinations associated with the DrPH program that indicate a student's progress toward obtaining the degree. The DrPH program requires students to complete (1) a qualifying examination, (2) a written and oral comprehensive examination and (3) a dissertation defense.

### **DRPH DEGREE 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 – Maternal and Child Health**

**Faculty:** Nicolette Teufel-Shone, PhD – Section Chair; Christina Cutshaw, PhD; John Ehiri, PhD, MPH, MSc; Lynn Gerald, PhD, MSPH; Norma Gray, PhD; Iman Hakim, MBBCh, PhD, MPH; Mary Koss, PhD; Douglas Taren, PhD; Ronald Watson, PhD.

The DrPH in Maternal and Child Health is offered by the Division 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 women of child-bearing age, infants, children, adolescents, and families. The program is designed to prepare students for advanced administrative, research and teaching positions. Upon completion of the program, graduates will be able to assume academic positions, to be employed as MCH epidemiologists, policy analysts, and evaluation specialists or to be program directors. Graduates may also assume 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, 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 qualifying examination, 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 Maternal and Child Health 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. Additionally, applicants with a Bachelor's degree and five years of public health work experience may be considered for admission into the program.

### **Required Courses**

A minimum of **64 units** are required for the DrPH in Maternal and Child Health. All students are required to designate a minor area of study that will be outside of the courses required for the DrPH. Students without an MPH degree will be required to take the five core MPH courses. These units are in addition to the minimum DrPH credit requirements.

#### DrPH Required Courses (22 units)

CPH 516	Ethics, Values and Public Health Policy (3)
CPH 642	Public Health Communications (3)
CPH 652	Grantsmanship for a Winning Proposal (2)
CPH 628	Public Health Research and Evaluation (3)
CPH 696H	DrPH Seminar (3)
	MEZCOPH Field Courses * (2)
	Higher Levels Methods Course* (3)
	Community and Cultural Sensitivity Course* (3)

\*approval from advisor

Maternal and Child Health Required Courses (9 units)

CPH 586	Maternal and Child Health (3)
CPH 630	Maternal and Child Epidemiology (3)
CPH 682	Women and Children Health Policy (3)

Concentration Electives (minimum 6 units – approved by 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.

**Total DrPH Minimum Credit Requirement = 64 units**

## **DrPH – Public Health Policy and Management**

**Faculty:** Douglas Taren, PhD – Interim Section Chair; Gail Barker, PhD; Merrill Eisenberg, PhD; Howard Eng, DrPH, MS; Joe Gerald, MD, PhD; Gary Hart, PhD; Ralph Renger, PhD; Cecilia Rosales, MD, MS; Kenneth Schachter, MD, MBA; Ernest Schloss, PhD

The DrPH program in Public Health Policy and Management is offered by the Division 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 qualifying examination, 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 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**

A minimum of **64 units** are required for the DrPH in Public Health Policy and Management. All students are required to designate a minor area of study that will be outside of the courses required for the DrPH. Students without an MPH degree will be required to take the five core MPH courses. These units are in addition to the minimum DrPH credit requirements.

#### **DrPH Required Courses (22 units)**

CPH 516	Ethics, Values and Public Health Policy (3)
CPH 642	Public Health Communications (3)
CPH 652	Grantsmanship for a Winning Proposal (2)
CPH 544	Fundamentals of Evaluation (3)
CPH 696J	DrPH Seminar (3)
	MEZCOPH Field Courses * (2)
	Higher Levels Methods Course* (3)
	Community and Cultural Sensitivity Course* (3)

\*approval from advisor

Public Health Policy and Management Required Courses (9 units)

CPH 617      Advanced Public Health Policy Analysis (3)

CPH 641      Advanced Health Care Administration (3)

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

Concentration Electives (minimum 6 units - approved by 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.

**Total DrPH Minimum Credit Requirement = 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.

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.

**Total Minor Requirement = 15 units minimum**

## DOCTORATE IN BIOSTATISTICS (PHD)

**Faculty:** Denise Roe, DrPH – Section Chair; Angelika Gruessner, PhD; Paul Hsu, PhD; Chengcheng Hu, PhD; Bonnie LaFleur, PhD, MPH; Duane Sherrill, PhD.

The PhD in Biostatistics is offered by the Division 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 advisor, and is approved by the student's Graduate committee and the Chair 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.

### Required PhD Courses (32 units)

MATH 564 Theory of Probability (3)

MATH 566 Theory of Statistics (3)

CPH 573A	Basic Principles of Epidemiology (3)
CPH 576A	Biostatistics in Public Health (3)
CPH 576B	Biostatistics for Research (3)
CPH 685	Statistical Consulting (3)
CPH 687	Theory of Linear Models (3)
STAT 571B	Design of Experiments (3)
STAT 675	Statistical Computing (3)
PHCL 595B	Scientific Writing Strategies, Skills and Ethics (2)
CPH 696S	Biostatistics Seminar (1 unit – 3 times)

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.

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)

**Total Minimum Credit Requirement = 74 units**

## PHD MINOR IN BIOSTATISTICS

The PhD minor in Biostatistics is administered by the Biostatistics Section in MEZCOPH. A total of 15 course credits are required. A member of the primary Biostatistics faculty will serve as the Minor Advisor and sit on the student's graduate committee. Selection of courses should be performed in consultation with the Biostatistics minor primary faculty member.

### **PhD Minor Requirements:**

#### 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)
EPID 684	General Linear and Mixed Effects Models (3)
CPH 685	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 for Public Health
EPID 576B	Biostatistics for Research

## DOCTORATE IN EPIDEMIOLOGY (PHD)

**Faculty:** Robin Harris, PhD, MPH – Section Chair; Zhao Chen, PhD, MPH; Kacey Ernst, PhD; Janet Foote, PhD; Stefano Guerra, MD, PhD; Elizabeth Jacobs, PhD; M. Elena Martinez, PhD, MPH; Sydney Pettygrove, PhD; Eyal Shahar, MD, MPH; Patricia Thompson, PhD.

The PhD in Epidemiology is offered by the Division 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). See the course listings for further details on the specific course requirements and schedule. 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.

#### 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 for Public Health (3)
EPID 576B	Biostatistics for Research (3)
EPID 651	Bioethics, Regulations, & Repercussions in Research (2) or PHCL 595B Scientific Writing Strategies, Skills and Ethics (2)
EPID 660	Infectious Disease Epidemiology (3)
EPID 670	Chronic Disease Epidemiology (3)
EPID 696A	Epidemiology Seminar (1 unit – 4 times) ( <i>or equivalent approved by Advisor</i> )

EPID 796A Epidemiology Doctoral Seminar (1 unit – 2 times)

Electives (17 or more units, 12 of which must be in Epidemiology/Biostatistics)

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 advisor and/or Graduate Committee Chair. The minor area of study specifies the number of required minor units and examinations (minimum = 9 units).

Dissertation – minimum of 18 units

Total Minimum Credit Requirement = 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 as well as successful completion of the Epidemiology Qualifying Exam. See the course listings for further details on the specific course requirements and schedule.

Required Minor Courses (at least 15 units)

EPID 573A Basic Principles of Epidemiology (3)

EPID 573B Epidemiologic Methods (3)

EPID 576A Biostatistics for Public Health (3)

EPID 576B Biostatistics for Research (3)

Elective (to be approved by Epidemiology Faculty Advisor)