

**2.12 DOCTORAL DEGREES. THE SCHOOL SHALL OFFER AT LEAST THREE DOCTORAL DEGREE PROGRAMS THAT ARE RELEVANT TO THREE OF THE FIVE AREAS OF BASIC PUBLIC HEALTH KNOWLEDGE.**

2.12.a. Identification of all doctoral programs offered by the school, by degree and area of specialization. The instructional matrix in Criterion 2.1.a may be referenced for this purpose. If the school is a new applicant and has graduates from only one doctoral program, a description of plans and a timetable for graduating students from the other two doctoral programs must be presented, with university documentation supporting the school's projections.

The Milken Institute SPH offers four DrPH programs and two PhD programs as described throughout this Criteria. These doctoral programs are relevant to four of the five core areas of public health knowledge; environmental health sciences; social and behavioral sciences; health policy and management; and epidemiology. In addition, the SPH offers a DrPH degree in Global Health. See the Instructional Matrix in 2.1.a. The University offers a PhD degree in Biostatistics conferred by the Statistics Department in the Columbian College of Arts and Sciences (CCAS). Faculty in the SPH Department of Epidemiology and Biostatistics (DEB) assist with advising and teaching courses for this program.

**Doctor of Public Health (DrPH) Degree**

The SPH DrPH degree is designed to prepare professionals to assume national and global leadership positions in one of four areas: 1) environmental and occupational health; 2) global health; 3) health behavior; and 4) health policy. These four distinct tracks prepare students to apply critical thinking and rigorous research methods to the complex practical problems facing practitioners and policy-makers in public health leadership. The DrPH degree is designed for students who enter the program with a master's degree, preferably an MPH, and generally several years of relevant work experience. While work experience is not a requirement for admission, over 95% of our incoming class in the last several cohorts has had relevant work experience; over 65% have five or more years of relevant work experience. While many DrPH students attend the program on a full-time basis, program courses are often scheduled after work hours to accommodate part-time, working students. Admission to the SPH DrPH program is open every other year, fall semester of even-numbered years. The program guides for each of the four DrPH programs can be found at: <http://publichealth.gwu.edu/academics/graduate/drph-programs>.

**Doctor of Philosophy (PhD) Degree in Epidemiology**

The GW Columbian College has offered a PhD in Epidemiology since 1998. In July 2013 the program was transferred to the Milken Institute School of Public Health. Housed in the DEB, the mission of the Epidemiology PhD program is to prepare students for a career in epidemiologic research in an academic, government, or industry setting. Most applicants have already completed a Master's degree, but this is

not required. Most matriculating students work part-time or full-time and pursue their degree on a part-time basis, attending classes in the afternoon and evenings. The PhD in Epidemiology program reviews and admits applicants annually.

The goals of the PhD program in Epidemiology are to ensure graduates: 1) gain knowledge across a wide range of epidemiologic and biostatistical theories and methods; 2) gain specific knowledge of epidemiology in one or more of the following areas: infectious disease, chronic disease, environmental and occupational health, or physical activity; 3) understand general and specialized advanced epidemiologic concepts; 4) understand how to apply statistical methods to biological/biomedical sciences and health services; 5) understand and abide by guidelines for ethical treatment of research participants; 6) conduct and analyze data from a research study; and 7) disseminate research findings to scientific and lay audiences. The guide for the program can be found at: <http://publichealth.gwu.edu/programs/epidemiology-phd>.

### **Doctor of Philosophy (PhD) in Social and Behavioral Sciences in Public Health**

This new doctoral program will welcome its first cohort in the fall of 2016. The program guide for this program can be found at: <http://publichealth.gwu.edu/programs/social-and-behavioral-sciences-phd>. As per the letter from CEPH dated September 10, 2015, the SPH will present this program during the site visit.

#### **2.12.b. Description of specific support and resources available to doctoral students including traineeships, mentorship opportunities, etc.**

The SPH offers Graduate Assistant (GA) and Graduate Research Assistant (GRA) positions to select full-time students within our DrPH and PhD programs. The current GA package includes 18 credits of tuition support, a stipend of \$17,000.00, and a payment for services of \$5,000.00 per academic year. The school offers a total of eight GA packages to selected DrPH students with two students per program area receiving a position. Four additional GA packages can be awarded between the PhD in Epidemiology and the PhD in Social and Behavioral Sciences. GAs serve as teaching assistants for two courses per semester, primarily for school core courses or department-specific required courses. In addition to these instruction-based GA positions, the school offers additional GA and GRA positions depending on their availability within funded projects. GRA positions provide a combination of tuition-support and salary payments that is similar to the level of support provided by GA positions. Exact funding levels for GRA positions are determined at the time of hire and based on the parameters of the associated funded project. GRA positions emphasize the production of generalizable knowledge and do not require service as a teaching assistant within the classroom.

The SPH has recently received several generous gifts that now enable us to offer more competitive scholarship packages to support doctoral students. Currently, the Milken Scholars program provides scholarship funding that is equivalent to 36 credit hours of support distributed over two academic years.

Four doctoral students received a designation as a Milken Scholar in the 2015-2016 academic year, and current budget projections indicate that the SPH will be in a position to maintain support for four new Milken Scholars per academic year. In addition to formal designations as Milken Scholars, the School offers financial support to supplement the funding for Gates Scholars and to provide financial support during the dissertation process. Detailed information about dollar amounts that the School provides for doctoral students can be found in Criteria 1.1.d: Outcomes Measures.

The school has numerous mentorship opportunities available for doctoral students, given both its substantial research portfolio and its location in the heart of Washington, DC. DrPH and PhD students frequently participate in research projects that provide outstanding learning and mentorship experiences as well as publication opportunities. DrPH and PhD students also enjoy ample opportunities to develop their professional experience. For example, most matriculating Epidemiology PhD students work in the DC metro area in government agencies (e.g., NIH, HHS, DOD), independent consulting firms (e.g., Emmes, RTI), or other health-related organizations where they gain research experience and future employment opportunities.

**2.12.c. Data on student progression through each of the school’s doctoral programs, to include the total number of students enrolled, number of students completing coursework and number of students in candidacy for each doctoral program. See CEPH Template 2.12.1.**

**CEPH Data Template 2.12.1.: Doctoral Student Data**

	<u>DrPH- 2012-13</u>	<u>DrPH- 2013-14</u>	<u>DrPH 2014-15</u>
# Newly Admitted (Fall)	21	0	21
# Currently Enrolled- (Fall)	61	54	70
# Completed Coursework	22	17	3
# Advanced to candidacy	21	17	3
# Graduated	6	4	9
	<u>PhD 2012-13*</u>	<u>PhD- 2013-14</u>	<u>PhD 2014-15</u>
# Newly Admitted (Fall)	N/A	3	4
# Currently Enrolled- (Fall)	N/A	25	24
# Completed Coursework	N/A	3	5
# Advanced to candidacy	N/A	3	3
# Graduated	N/A	1	4

*\*Note: PhD program was not part of SPH in 2012-13*

**2.12.d. Identification of specific coursework, for each degree, that is aimed at doctoral-level education.**

**DrPH Program**

The 20-credit core foundational courses for the four DrPH programs are all doctoral level courses (8000 level). An additional four Leadership credits are required; PUBH 8413- *Research Leadership* and PUBH 8415- *Instructional Leadership*. Also, upon successful completion of the comprehensive exam, all DrPH students are required to take a two credit course, PUBH 8422- *Advanced Health Care and Public Health Research Design*. Here the doctoral candidates develop a draft dissertation proposal and prepare to defend it. The program also requires six to nine dissertation credits. Additionally, each DrPH student is required to take two Advanced Seminar courses (six credits) within their specialty area (EOH, GH, HB, or HP). Of the 48 credits required to complete the DrPH program, 32 credits, plus dissertation credits, are at the doctoral level. Transfer credits are not accepted toward the DrPH degree. DrPH students take elective credits, based on their individual interests, to earn 48 credits. Below is an outline of the required doctoral level coursework:

**Table 2.12.d.1: DrPH Program- Required Curriculum (electives not included)**

<b>REQUIRED PROGRAM TOTAL = 48 credits</b>		
<b>Required Foundational/Methods Courses (20 credits)</b>		
<u>Course</u>	<u>Credits</u>	<u>Title</u>
PubH 8401	3	Foundations of Public Health Leadership and Practice – Doctoral Seminar
PubH 8402	2	Leadership in Public Health Practice and Policy
PubH 8416	3	Study Design and Evaluation
PubH 8417	3	Qualitative Research Methods and Analysis
PubH 8418	3	Applied Statistical Analysis
PubH 8419	3	Measurement in Public Health and Health Services Research
PubH 8420	3	Advanced Analysis and Dissemination
<b>Required Advanced Seminars (6 credits)-specific to each specialty field area</b>		
<b>Professional Leadership Courses (4 credits)</b>		
PubH 8413	Varies	Research Leadership
PubH 8415	Varies	Instructional Leadership (2 credits required)
<b>Required Dissertation Prep and Dissertation Credits (8- 11 Credits)</b>		
PubH 8422	2	Advanced Health Care and Public Health Research Design
PubH 8423	6-9	Dissertation Research

**PHD Epidemiology**

The Epidemiology PhD is a 72-credit program. Almost all students enter the program with a master’s degree and may transfer up to 24 credits toward the doctoral degree, leaving 48 credits in the SPH PhD curriculum. There are two tracks to follow in the PhD program.

Overview:

- Core courses: 33 credits (Track A); 30 credits (Track B)
- Elective Courses: 15 credits (Track A); 18 credits (Track B)
- 3 credits consulting
- 12-21 credits dissertation research

**Table 2.12.d.2: PhD, Epidemiology Required Coursework**

<b>Required Public Health Core Courses (18 Credits)</b>		<b>Credits</b>
PubH 6001	Biological Concepts for Public Health	2
PubH 6003	Principles and Practice of Epidemiology	3
PubH 6247	Design of Health Studies <i>Basis for PhD General Comprehensive</i>	3
PubH 6252	Advanced Epidemiologic Methods <i>Basis for PhD General Comprehensive</i>	3
PubH 8419	Measurement in Public Health and Health Services <i>Basis for PhD General Comprehensive</i>	3
<b>And either combination of the following for a total of 4 credits:</b>		
PubH 6299	Topics ( <i>Elective courses</i> ) <b>And either:</b>	2
PubH 6004	Environmental & Occupational Health in a Sustainable World	2
PubH 6007	Social & Behavioral Approaches to Public Health	2
<b>-OR-</b>		
PubH 6299	Topics ( <i>Elective course</i> ) <b>And</b>	1
PubH 6006	Management and Policy in Public Health	3
<b>Required Statistics Core Courses (12 - 15 Credits)</b>		<b>Credits</b>
STAT 6210	Data Analysis	3
PubH 8365	Design of Medical Studies	3
PubH 8366	Biostatistical Methods <i>Basis for PhD General Comprehensive</i>	3
<b>OPTION A ONLY:</b>		
STAT 6201	Mathematical Statistics I	3
STAT 6202	Mathematical Statistics II	3
<b>OPTION B ONLY:</b>		
PubH 8364	Quantitative Methods	3
<b>Consulting (3 Credits)</b>		
Note: May be waived by the Epidemiology Program Director, based on written documentation of prior equivalent course work or relevant work experience. Waiver of the consulting course increases the total number of electives by the number of consulting credits waived.		
PubH 6258	Advanced Topics in Biostatistical Consulting	1
PubH 6283	Consulting Practicum	2
<b>Dissertation Research (12-21 Credits)</b>		
PubH 8999	Dissertation Research for PhD Epidemiology Students	Taken in units of 3 credits

Of the required courses, nine-to-twelve credits are doctoral (8000 level) courses. Currently, there are also numerous doctoral-level courses available to take as electives, such as courses in: Clinical Epidemiology and Decision Analysis; Cancer Epidemiology; Infections Disease Epidemiology; Epidemiology of HIV/AIDS; and Epidemiology Surveillance in Public Health. Students are also eligible to take doctoral courses offered in the SPH DrPH program or the GW Department of Statistics.

Students can choose to focus their PhD program in a particular area, such as Environmental Epidemiology. In this case, the student would be expected to take the following coursework for 15 of the elective credits:

- PUBH 6123- *Toxicology: Application for Public Health*;
- PUBH 6121- *Environmental & Occupational Epidemiology*;
- PUBH 6126 – *Assessment & Control/Environmental Hazards*;
- PUBH 8411-*Advanced Topics: Principles of Human Health Risk Science*; and
- PUBH 8412- *Advanced Topics: Environmental and Occupational Health Research and Practice*.

Additionally, three consulting credits are required, but may be waived by the Program Director upon submission of written documentation of prior equivalent course work or relevant work experience. Waiver of the consulting course increases the total number of electives by the number of consulting credits waived.

### **PHD in Social and Behavioral Sciences in Public Health (SBS)**

The new PHD, SBS will be implemented with a strong doctoral level curriculum. The program is a 48-credit curriculum and does not accept any transfer credits. The requirements for this PhD includes a total of seven credits of dissertation/dissertation preparation; a new one-credit dissertation preparation course will be developed; and six-credits of dissertation research. In addition to the required curriculum, students take 14 elective credits to customize their program. The curriculum outline for this program is as follows:

**Table 2.12.d.3.: PhD, SBS Required Curriculum**

<b>Required Foundational Methods Courses (12 credits)</b>		
<b>Course</b>	<b>Credits</b>	<b>Title</b>
PubH 8416	3	Study Design and Evaluation
PubH 8417	3	Qualitative Research Methods and Analysis
PubH 8418	3	Applied Statistical Analysis
PubH 8419	3	Measurement in Public Health and Health Services Research
<b>Required Advanced Methods Courses (6 credits)- choose from options below:</b>		
PUBH 8xxx	3	Data Analysis and Presentation in Social and Behavioral Sciences Research (NEW)
EDUC 8140	3	Ethnographic Research Methods
EDUC 8172	3	Multivariate Analysis
EDUC 8173	3	Structural Equation Modeling
EDUC 8131	3	Case Study Research Methods Structural Equation Modeling
PSYC 8231	3	Development of Psychometric Instruments
PUBH 8366	3	Design of Medical Studies
PUBH 6263	1	Advanced GIS
PUBH 6273	1	Ethnographic Methods
PUBH 6533	2	Design of Community Health Surveys
PUBH 6310	3	Statistical Analysis in Health Policy
PUBH 8364	2	Qualitative Methods
<b>Required Specialty Field Courses (9 courses)</b>		
PubH 8408	3	Advanced Topics in Health Behavior Research and Practice– Doctoral Seminar
PubH 8409	3	Advanced Topics in Health Communication Research- Doctoral Seminar
PubH 8xxx	3	Advanced Topics in Behavioral Medicine- Doctoral Seminar (NEW)
<b>Required Dissertation and Dissertation Prep (7 credits)</b>		
PubH 8xxx	1	Advanced Theorizing in Social & Behavioral Sciences in PH (NEW)
PubH 8423	6	Dissertation Research

**2.12.e. Assessment of the extent to which this criterion is met and an analysis of the school's strengths, weaknesses and plans relating to this criterion.**

This criterion is met.

**Strengths:**

- The school has five doctoral degree programs, and with CEPH approval, has added one additional PhD starting in Fall 2016.
- More than one-third of students in the four DrPH program and 10% of Epidemiology PhD students are funded under Graduate Assistant positions. The school has also increased the funding made available for additional tuition support that can be used for non-GA students. Each of the four DrPH programs receives approximately 15 credits per academic year to distribute across students not otherwise funded. The PhD Program receives 21 credits for one-time merit scholarships for incoming students.

- The DrPH program is very selective and attracts highly qualified, diverse, energetic and passionate applicants. These include current public health professionals with substantial relevant practice, policy and leadership experience.
- The PhD in Epidemiology program is also very selective enrolling, on average, less than six new students each academic year from an annual applicant pool of 60 to 80.
- The PhD in Epidemiology has incorporated areas of concentration in Environmental & Occupational Health as well as Physical Activity Epidemiology.
- The creation of cohorts of students who take core courses together fosters collaboration and strong professional relationships.

#### **Challenges:**

- We currently have no training grants.
- DrPH students would benefit from an additional course focused on more advanced leadership and management skills.
- Some doctoral students will benefit from higher-level methods courses.
- Limited PhD options.

#### **Future Plans:**

- The doctoral programs will investigate opportunities for supporting DrPH students during both the pre-candidacy and candidacy phases.
- The DrPH committee will work with current DrPH faculty and other management faculty to expand the curriculum related to leadership/management skills.
- The Department of Epidemiology & Biostatistics is in the process of developing doctoral level courses in epidemiology methods as well as applied biostatistical methods.
- The Department of Environmental and Occupational Health is developing a PhD in Environmental Health for possible launch in 2017.
- Pursue training grants.