

<hr/> <small>THE GEORGE WASHINGTON UNIVERSITY</small> <hr/> <b>SCHOOL OF PUBLIC HEALTH AND HEALTH SERVICES</b> <hr/>	<b>Department of Epidemiology and Biostatistics</b>  <b>[PubH 216 (2 credits)]</b>  <b>Description of the Field/Laboratory Experience Requirement for the Masters of Science Degree in Public Health Microbiology and Emerging Infectious Diseases (MS PHMEID)</b>
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**Instructors**

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**Course Description**

The overall purpose of the field/laboratory experience requirement is to introduce students in the MS PHMEID Program to a supervised practical experience to reinforce the classroom and laboratory work in their academic program. Experiences generally take place in one of the following areas:

- infectious disease research;
- public health laboratories, or
- a qualifying public health entity (local, state or federal public health department, multilateral health organization, private contractor, etc.) to introduce them to epidemiologic research, particularly, surveillance and its tie-in with laboratories either in the United States or in an international setting.

Students choosing a laboratory-focused experience will gain concrete experiences in key laboratory functions. This includes but is not limited to gaining experience in specimen collection, use of test kits, specimen storage and transport, chain of custody procedures, specimen processing in the laboratory, Good Laboratory Practices, general quality control issues, use of basic lab instrumentation, issues of biosafety, and exposure to one or more key laboratory test methods.

Students seeking a more epidemiology-focused experience will carry out the field placement in contexts where they will be exposed to epidemiologic research, surveillance, and the relationship between the laboratory and public health epidemiologists.

The Field/Laboratory Experience is a 2-credit course. Students are required to spend a minimum of 120 hours in their field placement. While the timing of the field placement is flexible, the typical arrangement is about one day a week for 12 to 14 weeks.

### Epidemiology and Biostatistics Skills Building Seminar:

In addition to the Field/lab activity students are strongly encouraged to participate in the Epidemiology and Biostatistics Skills Building Seminar. This six or seven session seminar (depending on the semester) gives students the essentials of preparation, implementation, presentation, and communication in epidemiology to prepare them for their field experience as well as future work.

#### Procedures:

- Before beginning the field placement, students and site preceptors develop a proposal that outlines the learning objectives that will be met and defines the project activities.
- Site preceptors are asked to certify the student's hours and evaluate the student (certification and evaluation documents can be sent via mail, fax, or email).
- Students are required to produce a brief report on their experience.

#### **Course Prerequisite(s):**

Before a student can enroll in the field/laboratory experience course, they must complete the following epidemiology and microbiology courses. These courses are:

- PubH 203 (Principles and Practice of Epidemiology)
- PubH 245 (Infectious Disease Epidemiology)
- MICR 210 (Infection and Immunity)
- MICR 292 (Tropical Infectious Diseases)
- PubH 204 (Environmental and Occupational Health) – *Co-requisite*

In the event a student has not completed one of these courses, the student will seek permission from a co-director prior to enrolling for the Field/Laboratory Experience.

In addition, the student must have completed the following course requirements:

1. Attend the GWU Biosafety training course offered every semester. Trainings will be announced via the MS PHMEID listserv; please contact Denise Olive for more information at [sphdso@gwumc.edu](mailto:sphdso@gwumc.edu).
2. Attend the mandatory MS Field/Lab Experience Orientation Session offered every semester.
3. Completed CITI and HIPAA on-line training.

#### **Course Learning Objectives (list)**

The following list of topics are examples of activities that could serve as a foundation for the field/laboratory experience.

##### *Laboratory oriented experience:*

- Description of the key elements of specimen collection (biological, entomological, and environmental) and transport and storage of these specimens
- Description of the key aspects of chain-of-custody for collection, transport, receipt and processing of specimens
- Description of the proper use of specific test kits and containers for specimen collection

- Description of the key elements of Good Clinical Laboratory Practices (GCLP) or Good Laboratory Practices (GLP) and how they apply to specific laboratory activities
- Discussion of privacy issues and identity protection of sensitive laboratory information
- Identification and description of key biosafety issues in the laboratory
- Description of the proper use of various lab instruments and understanding key calibration and maintenance issues

*Epidemiology and/or Surveillance oriented experience:*

- Identify and assess patterns of emerging diseases to postulate hypotheses and to identify appropriate strategies in order to evaluate the impact of health problems
- Enumerate and apply underlying principles and methods to design, plan, and conduct epidemiologic studies including observational and experimental designs, screening programs, public health surveillance, and other epidemiologic designs
- Apply epidemiological and biomedical concepts in identifying and describing the determinants and the distribution of disease in human populations

**Methods of Instruction**

<input type="checkbox"/>	Lectures	<input type="checkbox"/>	Class and Small Group Discussions
<input type="checkbox"/>	Case Studies	<input type="checkbox"/>	Student Presentations
<input type="checkbox"/>	Required Readings/Textbook	X	Other: Field Work]
<input type="checkbox"/>	Recommended/Supplemental Readings	<input type="checkbox"/>	Other [Specify]

**Methods of Evaluation**

**Percent of Grade**

Field/Laboratory Experience Contract	5%
Field/Laboratory Experience Report	45%
Preceptor Evaluation	50%

**Class Policy:** This is a 2- credit field-based course. This translates into a minimum of 120 hours in the field. Procedures:

- Students begin by working with the Course Director to identify a site (public health/epidemiology or laboratory).
- Once the site is identified they develop a Field/Laboratory Experience Proposal (See Appendix A).
- Students must keep a log of their time (minimum 120 hours), including dates, hours, and activities completed, certified by the preceptor.
- At the completion of the field/laboratory experience, the student will prepare a detailed report (4 pages or more) describing the various activities they were involved in, what specific learning objectives were achieved, and what new knowledge was gained. See the suggestions below and the template for the field/laboratory experience report in Appendix B.

*Laboratory oriented experience:*

- Describe two procedures for specimen preparation for at least two key laboratory tests
- Participate in at least two laboratory tests (depending on the season). This will entail observing the proper techniques of specimen preparation and test procedures

*Epidemiology and/or Surveillance oriented experience:*

- Produce a study proposal including an analysis plan and the results for the epidemiologic/surveillance project you participated in.
- Design a questionnaire, test it for validity.

The preceptor will complete an evaluation form describing student performance.

**Grading Scale and Standards** The field/laboratory experience will be a graded course, based upon the preceptor's evaluation of the student and the student's Field/Laboratory Experience report.

Final Grades will be assigned as follows:

Letter Grade	Total points earned
A	95 -100%
A -	90 – 94%
B +	86 – 89%
B	80 – 85%
B -	76 – 79%
C +	70 – 75%
C	66 – 69%
C -	60 – 65%
F	≤ 59%

The grading scale may be adjusted to the benefit of the students.

### **Blackboard**

This course will not use Blackboard.

### **Academic Integrity**

Please review the University's policy on academic integrity, located at [www.gwu.edu/~ntegrity/code.html](http://www.gwu.edu/~ntegrity/code.html). All graded work must be completed in accordance with The George Washington University Code of Academic Integrity.

Academic dishonesty is defined as cheating of any kind, including misrepresenting one's own work, taking credit for the work of others without crediting them and without appropriate authorization, and the fabrication of information. Common examples of academically dishonest behavior include, but are not limited to, the following: Cheating; Fabrication; Plagiarism; Falsification and forgery of University academic documents; Facilitating academic dishonesty.

### **Students with Disabilities**

If you feel you may need an accommodation based on the impact of a disability, please contact one of the co-directors privately to discuss specific needs. Please contact the Disability Support Services Office at (202) 994-8250, Suite 242 Marvin Center, <http://gwired.gwu.edu/dss> , to establish eligibility and to coordinate reasonable accommodations.

For MS PHMEID program questions, students should contact Denise Olive, the MS PHMEID Executive Coordinator at Tel: (202) 994-0374; Fax: (202) 994-0082; Email: [sphdso@qwumc.edu](mailto:sphdso@qwumc.edu)

## APPENDIX A

### MS Public Health Epidemiology and Emerging Infectious Diseases The George Washington University School of Public Health and Health Services

#### Sample Field/Laboratory Experience Proposal Template

**Student:** [Name, contact information]

**Preceptor:** [Name, contact information]

**Site:** (this can be a lab or private or public health organization) [Please provide the complete name and address of the site.]

**Learning Objectives: (examples)**

- To learn molecular biology techniques and apply them to cloning, expressing and characterizing Ac-SPI, a serine protease inhibitor produced by *Ancylostoma caninum*
- To learn about regulation, accreditation, and other policy aspects of the Human Hookworm Vaccine Initiative
- To learn about all the stages of vaccine development
- To learn good laboratory practices, standards of procedure and quality control
- To learn how to design and implement an epidemiologic survey

**Proposed Activities: (examples)**

- To clone, express and characterize novel hookworm proteins for the preceptor
- To run assays as directed
- To perform basic functions in lab management such as ordering supplies, maintenance, keeping a laboratory notebook
- To develop a survey to be implemented in the community

**Duration and proposed schedule:**

**Evaluation:**

- Detailed report and notebook outlining all work and data obtained in the laboratory
- Written paper describing the process of antigen discovery in vaccine development
- Written paper with analysis from the data collected
- Written evaluation of student performance by supervisor

## APPENDIX B

### MS Public Health Epidemiology and Emerging Infectious Diseases The George Washington University School of Public Health and Health Services

#### Field/Laboratory Experience Report Template (4-5 pages)

Student Name

Field/Laboratory Experience Preceptor Name and Title  
Field/Laboratory Experience Site, complete name and address

Please describe your Field/Laboratory Experience using this outline:

Objectives

Methods

Activities

If the Field/Laboratory Experience took place in a laboratory, describe two laboratory methods you learned.

If the Field/Laboratory Experience took place in a public health/surveillance setting, please describe the epidemiologic methods you learned.

Describe the learning experience

**APPENDIX C**  
**The George Washington University School of Public Health and Health Services**

**MS in Public Health Microbiology and Emerging Infectious Diseases**  
**STUDENT PERFORMANCE EVALUATION**  
*For use by Field/Lab Supervisors*

*Thank you for taking the time to supervise and evaluate this student. Your evaluation will be weighed when grading the student's Field/Laboratory Experience. We strongly encourage you to discuss your assessment of the student's performance directly with the student. Concerns or questions about this process, this evaluation, or this student should be directed to the staff member listed on the first page of this form.*

Name of Student: \_\_\_\_\_ Date: \_\_\_\_\_

Name of Preceptor: \_\_\_\_\_ Title: \_\_\_\_\_

Preceptor's e-mail: \_\_\_\_\_ Phone: \_\_\_\_\_

Organization/Office and mailing address: \_\_\_\_\_

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***Please return this evaluation to:***

Professor Amanda Castel (students with last names A-L) or Professor Ann Goldman (students with last names M-Z)

Department of Epidemiology and Biostatistics  
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Email: Amanda Castel at [sphaxc@gwumc.edu](mailto:sphaxc@gwumc.edu); Ann Goldman at [sphasg@gwumc.edu](mailto:sphasg@gwumc.edu)

**PERFORMANCE EVALUATION**

- 5 = Superior Accomplishments
- 4 = Commendable
- 3 = Competent
- 2 = Requires Improvement
- 1 = Unsatisfactory
- NA = Not Applicable

*Please base your evaluation on the student's performance on this particular project. Use the scale above to rate the student on each area. Your written comments are a very valuable part of the evaluation; use specific examples whenever possible.*

**UNDERSTANDING OF THE PUBLIC HEALTH CONTEXT OF THE PROJECT**  
Consider the student's understanding of: the topic; the target population for the project; and, the nature of the problem and/or relevant risk factors.

Comments:

**RESEARCH AND PROGRAM SKILLS**

Consider the student's ability to: conceptualize the questions; select and apply the appropriate methods to achieve the objectives (instruments, etc.); and, analyze information and interpret results.

Comments:

**COMMUNICATION SKILLS**

Consider the student's skills in: general oral communication; writing; visual presentation of data and information; and, oral presentation.

Comments:

**PROFESSIONAL CHARACTERISTICS**

Consider the student's: reliability; professional maturity/judgment; initiative; ability to seek advice appropriately; response to feedback/ability to accept criticism; ability to work as part of a team; ability to work independently; organizational skills; and, ability to meet deadlines.

Comments:

**WORK HABITS**

Was the student punctual? Reliable? Cooperative?

Did the student willingly undertake assignments and follow instructions?

Comments:

**OVERALL QUALITY OF WORK ON THIS PROJECT**

Did the student display unusual talent or initiative in performing assigned tasks?

Comments:

**DEVELOPMENT**

Has the student shown improved work habits? Sense of professionalism? Communication skills? Are there areas for improvement?

Comments:

What grade would you recommend the student receive? (Please use the grading scale on page 3 of the syllabus) \_\_\_\_\_

Have you discussed this evaluation with the student?	Yes	No
If no, would you be willing to let the student read this evaluation?	Yes	No

Evaluator's signature: \_\_\_\_\_ Date: \_\_\_\_\_