Course Description

The **Culminating Experience** is a graded course where students apply the epidemiologic methods and skills acquired in the program. It consists of four elements that focus on the synthesis and summary of data acquired through application of epidemiologic and/or biostatistical methods in research or surveillance activities. The four elements are: (a) Concept Paper, (b) Proposal, (c) Final Report or Manuscript, and (d) two Oral Presentations (one at the site, and a final presentation evaluated by GW Faculty). These elements are fully described in the Appendix – Guidelines for Culminating Experience Elements.

MPH students are required to demonstrate proficiency in the application of the skills they acquire during their academic programs through the **Practicum** (PubH 6014) and the **Culminating Experience** (PubH 6015). The two courses can be linked but this is not a departmental requirement. In addition, they can be taken simultaneously or sequentially, in which case the Practicum would come first.

Course Prerequisite(s)

- PubH 6002 Biostatistical Applications for Public Health
- PubH 6003 Principles and Practice of Epidemiology
- PubH 6047 Design of Health Studies

Co-Requisites

- PubH 6249 Use of Stat Packages for Data Management/Data Analysis
- PubH 6014.13 Epidemiology and Biostatistics Practicum
- PubH 6252 Advanced Epidemiologic Methods

Recommended Course

- PubH 6004 Environmental and Occupational Health
- PubH 6006 Management and Policy Approaches to Public Health
- PubH 6007 Social and Behavioral Science Methods

Other prerequisites

- Students must take the online training courses relating to research with human subjects (CITI) and protection of personal health information (HIPAA). (see SPHHS Student Practicum Guidebook for details)
Students must have participated in the Department of Epidemiology and Biostatistics mandatory Practicum/Culminating Experience orientation.

If applicable, students must have submitted IRB paperwork before participating in the Practicum or Culminating Experience.

Student responsibilities

1. Before registering for the Culminating Experience, students should talk to the Practicum Director (PD) to discuss their plans and interests.
2. The first step in the Culminating Experience is identification of a topic. In some cases students work on a topic during the Practicum that can be developed to fulfill the requirements of the Culminating Experience. At other times they may decide to choose a new topic. Students are permitted to work with SPHHS faculty members on their Culminating Experience, including faculty from the Department of Epidemiology and Biostatistics.
3. Once students decide on a Culminating Experience topic they are assigned a GW Faculty Advisor, unless the person they are working with is a member of the Department of Epidemiology and Biostatistics. In that case, the faculty member serves as both the Site Preceptor and the GW Faculty Advisor. The student provides a draft Concept Paper to the PD, who will use it to identify a GW Faculty Advisor.
4. The first requirement of the Culminating Experience is the development of a Concept Paper which describes the work that will be done and how it will be carried out. (See Appendix for Concept Paper template). Concept Paper is reviewed and approved by the Site Preceptor and GW Faculty Advisor to assess the appropriateness of its scope as well as its feasibility.
5. The GW Faculty Advisor and Site Preceptor will review the Concept Paper and work with the student and decide when the student is ready to expand the Concept Paper into a Proposal. Once the Proposal is approved by the GW Faculty Advisor and Site Preceptor, the student provides a final copy to the PD. (See Appendix for Proposal guidelines). If the student links the Practicum and CE, the Concept Paper and Proposal may be written during the Practicum.
6. Students work with their GW Faculty Advisors and Site Preceptors to determine whether IRB review is required. If it is, an IRB application must be submitted (See Appendix for guidance)
7. Students should submit their Concept Paper, Proposal, and IRB paperwork (if applicable) as soon as possible.
8. Students will produce a Final Report or Manuscript which expands on their Proposal by including their results and discussion. (See Appendix for guidelines for the Final Report/Manuscript) The GW Faculty Advisor and when applicable, the Site Preceptor, must receive a near final draft of the complete report/manuscript four weeks before the student intends to make their Oral Presentation.
9. Once the GW Faculty Advisor and Site Preceptor give written authorization for the student to present, the student works with the GW Faculty Advisor and Practicum Coordinator (PC) to schedule the Oral Presentation. Students are encouraged to invite Site Preceptors external to the Department of Epidemiology and Biostatistics to their Oral Presentations.
10. Students must provide the GW Faculty Advisor with a copy of their PowerPoint presentation two weeks before the scheduled date of their Oral Presentation. (See Appendix)
11. Each student is required to make an Oral Present to their site preceptor (if they are working in the field) and/or GW Faculty Advisor previous to the actual final Oral Presentation.

Epidemiology and Biostatistics- Core Competencies

1. Identify and define a public health issue.
2. Develop a plan or proposal to apply the epidemiological principles needed to carry out the chosen public health Practice Activity.
3. Identify the appropriate data analysis methods.
4. Demonstrate competency in data collection.
5. Demonstrate proficiency in constructing and managing databases for epidemiological studies using statistical software, e.g. The SAS system for a specific project or endeavor.
Learning Objectives – Upon completion of the course, students will be able to:

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<th>Meets Competency Number</th>
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<td># 1, 2, 3, 4, 5</td>
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- 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.

- Synthesize data and relevant literature to interpret findings in a casual framework, write reports/manuscripts, and make oral presentations.

Required Texts

Students will conduct relevant research to inform their CE project.

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Edition</th>
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<tbody>
<tr>
<td>NONE</td>
<td>N/A</td>
<td>N/A</td>
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</table>

Key Definitions – Course Participants

Students – Students identify and develop a topic applying and integrating the knowledge and skills they have obtained through epidemiologic research or surveillance data. At times this data comes from the student’s Practicum.

Site Preceptor – This individual works in the field and supervises the student’s work and provides input to the GW Faculty Advisor on the student’s performance, through an evaluation. The SPHHS faculty members are permitted to precept students on their CEs.

GW Faculty Advisor– This is a member of the GW SPHHS Department of Epidemiology and Biostatistics faculty who works with the student throughout the process to ensure that the student’s project and work meet Departmental standards. The GW Faculty Advisor is responsible for portions of the student’s final evaluation and grade. The student should meet with the GW Faculty Advisor a minimum of twice per month throughout their CE coursework. If the GW Faculty Advisor is also serving as the site preceptor, they are also responsible for the site preceptor’s portion of the student’s grade (see table with the grading distribution below).

Practicum Director (PD) – guides student through Practicum-CE process.

DEB Practicum Coordinator (PC) - assists the Practicum Directors with student placement, provides guidance on the SPHHS Practicum Application website to student and Site Preceptors, and assists students with scheduling orientations and Culminating Experience presentations.

SAS Coach – assists students with data management and analysis. Please contact Dr. Angelo Elmi (afelmi@gwu.edu) when assistance is needed.
Course Registration
To register for the CE, students must fill out and sign a registration transaction form (RTF) and send it to the PD they are working with for the PD’s signature. MPH Epidemiology students register for PubH 6015.13, while Biostatistics students register for 6015.10.

Recommended/Supplemental Texts

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<tr>
<th>Title</th>
<th>Author</th>
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Methods of Instruction
Students are actively involved in the integration of knowledge and skills gained in their MPH program under the supervision of the Site Preceptor and the GW Faculty Advisor. The student’s progress in accomplishing the four basic elements of the course is tracked with the use of the Student Checklist, which assists students by outlining the specific steps needed to complete the Practicum and Culminating Experience. The Student Checklist is available on the Practicum and Culminating Experience Resource Page: http://publichealth.gwu.edu/departments/epidemiology-and-biostatistics/practice-experience.

<table>
<thead>
<tr>
<th>Lectures</th>
<th>Case Studies</th>
<th>Required Readings/Textbook</th>
<th>Recommended/Supplemental Readings</th>
<th>Class and Small Group Discussions</th>
<th>Student Presentations</th>
<th>Other [Specify] Student will conduct research</th>
<th>Other [Specify]</th>
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Methods of Evaluation

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<tr>
<th>Methods of Evaluation</th>
<th>Percent of Grade</th>
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<tbody>
<tr>
<td>CE Prep: Concept Paper, Proposal, IRB submission, if applicable</td>
<td>25%</td>
</tr>
<tr>
<td>Final Report/Manuscript</td>
<td>35%</td>
</tr>
<tr>
<td>Oral Presentation</td>
<td>20%</td>
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<tr>
<td>Final Evaluation</td>
<td>20%</td>
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<tr>
<td>TOTAL</td>
<td>100%</td>
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Students will be assessed on how well they accomplish the objectives for the Culminating Experience through the evaluation of their (a) Concept Paper, (b) Proposal, (c) Final Report/Manuscript, and (d) Oral Presentation. The Site Preceptor completes an evaluation of the student’s performance (found on the Practicum and CE Resource Page). The GW Faculty Advisor also contributes to the final grade, as do Faculty attending the students’ presentations.

Upon completion of the Culminating Experience the student will also have an opportunity to provide feedback regarding the course through completion of a Final Student Evaluation (found on the Practicum and CE Resource Page).

Grading Scale and Standards (Credit/ No Credit)

1 = Unacceptable  
2 = Poor  
3 = Acceptable  
4 = Good  
5 = Excellent
GWFA's and SPs will each rate students on the following products using the scale above. If the GWFA is serving as the SP as well, then she/he enters the same score:

CE Prep: Concept Paper, Proposal, IRB submission (if applicable)
Final Report/Manuscript
Oral Presentation
Final Evaluation

A score of 3 or more in at least 3 of the categories will be sufficient for credit.

**Workload:**

This is an individualized course where students are learning through public health practice or research. Students are expected to put in a minimum of 120 hours over the course of a semester, which works out to a minimum of 9 hours a week.

**University Policy on Religious Holidays**

- Students should notify faculty during the first week of the semester of their intention to be absent from class on their day(s) of religious observance.
- Faculty should extend to these students the courtesy of absence without penalty on such occasions, including permission to make up examinations.
- Faculty who intend to observe a religious holiday should arrange at the beginning of the semester to reschedule missed classes or to make other provisions for their course-related activities.

**Blackboard**

Blackboard will be used for posting course files and assignments and for communicating with the class. You are already enrolled for this course on Blackboard if you have completed registration for the course. It is your responsibility to periodically check the course site (log in at [http://blackboard.gwu.edu/](http://blackboard.gwu.edu/) Using your gwu.edu address) for updates to the syllabus/readings.

**Academic Integrity**

(Put first paragraph in ALL core syllabi):
All Milken Institute School of Public Health Students are required to complete two (separate) online activities regarding academic integrity -- the GW Academic Integrity Activity and the Identifying and Avoiding Plagiarism Activity. Both activities must be completed within 2 weeks of starting your coursework at Milken Institute School of Public Health. - See more at: https://publichealth.gwu.edu/integrity#sthash.FlIRdO5H.dpuf

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. For the remainder of the code, see https://studentconduct.gwu.edu/code-academic-integrity.

Support for Students Outside the Classroom

Disabilities Support Services (DSS)

Any student who may need an accommodation based on the potential impact of a disability, should contact the Disability Support Services office at 202.994.8250 in the Rome Hall, Suite 102, to establish eligibility and to coordinate reasonable accommodations. For additional information please refer to: https://disabilitysupport.gwu.edu/

Mental Health Services- 202-994-5300

The University's Mental Health Services offers 24/7 assistance and referral to address students' personal, social, career, and study skills problems. Services for students include: crisis and emergency mental health consultations, confidential assessment, counseling services (individual and small group), and referrals. https://counselingcenter.gwu.edu/

Adverse Weather/Class Cancellation

In the advent of inclement weather or any other emergency, the Milken Institute School of Public Health will follow the decision of the University. Call the University hotline at 202.994.5050 or check the Human Resources status button at http://hr.gwu.edu/adverse-weather-conditions-and-emergency-situations. In the event of class cancellation, we will email you about rescheduling, assignments due, etc.

Emergency Preparedness and Response Procedures

The University has asked all faculty to inform students of these procedures, prepared by the GW Office of Public Safety and Emergency Management in collaboration with the Office of the Executive Vice President for Academic Affairs.
To Report an Emergency or Suspicious Activity

Call the University Police Department at 202-994-6111 (Foggy Bottom) or 202-242-6111 (Mount Vernon).

Shelter in Place – General Guidance

Although it is unlikely that we will ever need to shelter in place, it is helpful to know what to do just in case. No matter where you are, the basic steps of shelter in place will generally remain the same.

- If you are inside, stay where you are unless the building you are in is affected. If it is affected, you should evacuate. If you are outdoors, proceed into the closest building or follow instructions from emergency personnel on the scene.
- Locate an interior room to shelter inside. If possible, it should be above ground level and have the fewest number of windows. If sheltering in a room with windows, move away from the windows. If there is a large group of people inside a particular building, several rooms maybe necessary.
- Shut and lock all windows (for a tighter seal) and close exterior doors.
- Turn off air conditioners, heaters, and fans. Close vents to ventilation systems as you are able. (University staff will turn off ventilation systems as quickly as possible).
- Make a list of the people with you and ask someone to call the list in to UPD so they know where you are sheltering and who is with you. If only students are present, one of the students should call in the list.
- Await further instructions. If possible, visit GW Campus Advisories for incident updates (http://CampusAdvisories.gwu.edu) or call the GW Information Line 202-994-5050.
- Make yourself comfortable and look after one other. You will get word as soon as it is safe to come out.

Evacuation

An evacuation will be considered if the building we are in is affected or we must move to a location of greater safety. We will always evacuate if the fire alarm sounds. In the event of an evacuation, please gather your personal belongings quickly (purse, keys, GWorld card, etc.) and proceed to the nearest exit. Every classroom has a map at the door designating both the shortest egress and an alternate egress. Anyone who is physically unable to walk down the stairs should wait in the stairwell, behind the closed doors. Firemen will check the stairwells upon entering the building.

- Once you have evacuated the building, proceed to our primary rendezvous location: the courtyard area between the GW Hospital and Ross Hall. In the event that this location is unavailable, we will meet on the ground level of the Visitors Parking Garage (I Street entrance, at 22nd Street). From our rendezvous location, we will await instructions to re-enter the School.

Alert DC

Alert DC provides free notification by e-mail or text message during an emergency. Visit GW Campus Advisories for a link and instructions on how to sign up for alerts pertaining to GW. If you receive an Alert DC notification during class, you are encouraged to share the information immediately.

GW Alert
GW Alert provides popup notification to desktop and laptop computers during an emergency. In the event that we receive an alert to the computer in our classroom, we will follow the instructions given. You are also encouraged to download this application to your personal computer. Visit GW Campus Advisories to learn how.

Additional Information
Additional information about emergency preparedness and response at GW or the University’s operating status can be found on GW Campus Advisories (http://CampusAdvisories.gwu.edu) or by calling the GW Information Line at 202-994-5050.

APPENDIX

Guidelines for Culminating Experience Elements

1. Title Page
A Title Page must be included with each of the written documents (Concept Paper, Proposal, and Final Report/Manuscript) submitted to your GW Faculty Advisor, Site Preceptor, and Practicum Director. The proper format of the Title Page should be:

   TITLE
   DATE
   Protocol Approved by
   The George Washington University
   Institutional Review Board IRB #
   (if applicable)

   Submitted by:
   Student Name
   Contact Information

   Preceptor Name
   Contact Information

   GW Faculty Advisor Name
   Contact Information

   In Partial Fulfillment of the Requirements
   For the Masters of Public Health Degree
   Department of Epidemiology and Biostatistics
   The George Washington University
   School of Public Health and Health Services

2. Concept Paper: 2-3 pages double-spaced (including references)
Please follow this template by maintaining the headings of each section. If they are not applicable, please explain why.

a. **Title Page**: as above  
b. **Background**: brief review of the literature, public health significance, and justification of need for the activity to be carried out (gaps in research area).  
c. **Scope**: explicit statement of what will be done during the Culminating Experience.  
d. **Principal Aims and Hypotheses**: Clear statement of the principal aims and research hypotheses to accomplish these goals.  
e. **Methods**: outline of the proposed analytic methods, including:
   a. Study design: Type of study or activity to be conducted (e.g. case-control study or surveillance project).  
   b. Data sources- defend adequacy in terms of the availability and quality of data; quantity of data.  
   c. Variables: principal independent and dependent variables, and potential cofounders  
   d. Statistical analysis methods  
   e. Human subjects protection issues  
f. **Deliverables**: report of research or public health practice activity.  
g. **Discussion**: of the public health significance of the proposed project.  
h. **Timeline**: for the project or activity and a description of projected meetings with field preceptor and GW Faculty Advisor  
i. **References**  

3. **Proposal**: about 5-10 pages double-spaced pages  

The proposal represents an expansion of the approved Concept Paper. In addition to the above elements which should be described in greater detail, a scientific abstract using standard *New England Journal of Medicine* (*NEJM*) format should be included after the Title Page. It is understood that the abstract for the proposal will not contain results.

4. **Institutional Review Board (IRB) Review**  

Students must work with their GW Faculty Advisor to decide whether the topic for a proposed Culminating Experience must be submitted for IRB approval.  

**If you are working with data or accessing any health records, you must ensure that you are allowed to access the data. This must be done prior to looking at, downloading, or analyzing any data!** Another example of a situation where IRB review might be required is if the student has been conducting research with the intent to publish.  

There are several steps to go through:  
- Ensure you are listed on the study/program in the agency where you are working and are covered by the agency’s rules regarding working with their data. Provide a copy of IRB (or other) approvals to PD.  
- Work with your preceptor, PD, and/or GWFA to complete the research determination form ([http://publichealth.gwu.edu/research/policy-procedure-guidance](http://publichealth.gwu.edu/research/policy-procedure-guidance)) if you are not sure whether you require IRB approval from GW.  
- If your study will require exempt, expedited, or fully IRB approval, complete the appropriate forms.  
- Once you have completed the appropriate forms, have the GWFA sign it.  
- Log completed forms into the log in sheet at Ms. Kayla Morrison’s desk. **Do not send to the SPH prior to doing this. Do not begin work until you receive word that you are approved. All research must also have the Department’s signature (Chair or delegate). Forms may not be submitted to the IRB without this.**  

The IRB is a committee mandated by federal law to protect the rights and welfare of human subjects participating in research activities. The IRB achieves its primary function, protecting the rights and welfare of subjects participating in research, by educating researchers.  

Human Subject Research course requirements – please consult the SPHHS Student Practicum Guidebook.
Other institutions with their own IRBs: Students will sometimes work with institutions other than GWU that have their own IRB. The general rule is that students still have to complete an IRB submission for GW once the IRB used by the site has approved the project. Students should include the other IRB’s documentation of project approval.

5. Final Scientific Report/Manuscript Guidelines – about 18-20 double-spaced pages

The Final Report/Manuscript follows the outline of a published research paper, and represents an expansion of the Proposal. It should include the following elements:

a. Title Page
b. Abstract *
c. Background
d. Principal Aims and Hypothesis
e. Methods: including study design, data sources, sample size, variables, statistical analysis methods, and human subjects protection issues
f. Results: a description of the data and the principal findings
g. Discussion: of the main findings and public health significance of the proposed project
h. Tables and Figures
i. References**
j. Appendices: e.g., data collection instruments

*The abstract should follow the outline below using NEJM format with a word limit of 250 words:
  a. Background/Objectives
  b. Methods
  c. Results
  d. Conclusions

** References should follow the NEJM style in as explained in the excerpt below from the Journal Style section of the NEJM Author Center Resources:

"References must be double-spaced and numbered consecutively as they are cited. References first cited in a table or figure legend should be numbered so that they will be in sequence with references cited in the text at the point where the table or figure is first mentioned. List all authors when there are six or fewer; when there are seven or more, list the first three, followed by “et al.” The following are sample references:


Numbered references to personal communications, unpublished data, or manuscripts either ‘in preparation’ or ‘submitted for publication’ are unacceptable. If essential, such material can be incorporated at the appropriate place in the text."
6. Oral Presentation Guidelines

Students are expected to prepare a concise, 15-minute oral presentation using PowerPoint slides. The basic outline of the talk should include a Title Slide, Background, Hypotheses or Objectives, Methods, Results, Summary and/or Conclusions, Recommendations, and Acknowledgments. The number of slides presented should be limited to about 15, as each slide takes about one minute to present. Each presentation will be followed by a 5-minute question and answer session with Department faculty and other students.

At least two weeks prior to the scheduled presentation date, students must provide a copy of and review their PowerPoint presentation with their GW Faculty Advisor. The GW Faculty Advisor and Site Preceptor must authorize the student’s presentation to the Practicum Manager via email. The student must also provide an abstract of the written Report/Manuscript to the Practicum Manager one week before the presentation is scheduled so that announcements can be made to Department faculty and students.