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) Oral Presentation. 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.
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). The Concept Paper is reviewed and approved first by the Site Preceptor and GW Faculty Advisor, and then by the Practicum Director, to assess the appropriateness of its scope as well as its feasibility.
5. Once the Concept Paper is approved, the student expands the Concept Paper into a Proposal which requires the approval of the GW Faculty Advisor and Site Preceptor. (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)

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 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.

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<tr>
<th>Title</th>
<th>Author</th>
<th>Edition</th>
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<td>NONE</td>
<td>N/A</td>
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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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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](http://publichealth.gwu.edu/departments/epidemiology-and-biostatistics/practice-experience).

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<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]</th>
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Methods of Evaluation

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<th>Percent of Grade</th>
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<tr>
<td>CE Prep: Concept Paper, Proposal, IRB submission, if applicable</td>
<td>25%</td>
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<tr>
<td>Final Report/Manuscript</td>
<td>35%</td>
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<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><strong>TOTAL</strong></td>
<td><strong>100%</strong></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).

Class Policy: Expectations for individual contributions and acceptable levels of collaboration for assignments on which students may work together [describe (e.g. “Homework assignments: Although you may discuss the case studies/homework assignments with other students, the written assignment you turn in must be your own work in your own words. If you copy another students assignment or let someone else copies yours, you are both cheating. Exams: Must be done independently, on your own.”)]

Grading Scale and Standards (Credit/ No Credit)

1= Unacceptable  2= Poor  3=Acceptable  4=Good  5=Excellent
GWFA 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.

**Class Policy: Attendance/Participation**

This is not a classroom experience but one where students work semi-independently, under the supervision of their preceptor and GW Faculty Advisor.

**Blackboard**

Blackboard will be used for posting course files and assignments and for communicating with the class. You are already “signed up” for this course on Blackboard, since it is linked to the course registration system. It is your responsibility to periodically check the course site (log in at http://blackboard.gwu.edu/ using your gwu.edu address) for updates to the syllabus/ readings.

**Academic Integrity**

Please review the University’s policy on academic integrity, located at 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 me 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.

**Adverse Weather/Class Cancellation**

In the advent of inclement weather or any other emergency, The School of Public Health and Health Services will follow the decision of the University, and I will follow the SPHHS decision. Call the University hotline at 202.994.5050 or check the website Campus Advisories at http://campusadvisories.gwu.edu/. In the event of class cancellation, I will email you about rescheduling, assignments due, etc.
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 confounders
   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. An example of a situation where IRB review might be required is if the student has been conducting research with the intent to publish.

IRB staff can be contacted directly, to discuss the particulars of a student’s study at ohrirb@gwu.edu.

If IRB review is required, students must work with their GW Faculty Advisor, the Practicum Director, and the Office of Human Research (OHR) to obtain access to the appropriate forms; OHR has forms and worksheets to assist students. Once an IRB submission has been prepared, the GW Faculty Advisor should review it, sign it if needed, and the package should then be submitted to the Practicum Director for review and signature in lieu of the Chair’s signature.

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.