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1. Mission Statement

The primary mission of the Department of Epidemiology is to provide excellence in teaching and training in the field of epidemiology. The graduate program offers master's and doctoral degrees to prepare students for careers in research or professions in public health which require knowledge of advanced epidemiologic methods.
2. ScM Program Guide

Program Description

The graduate program offers a two-year Master of Science degree in Epidemiology. The master’s program is designed to provide advanced training in the underlying principles and practice of epidemiology for students with little or no prior graduate-level training. Candidates for the Master of Science degree follow an integrated program of study comprising a minimum of 12 credits and a master's thesis. There is no written examination requirement.

Upon completion of the ScM program, students are expected to have proficiency in the following areas:

1. conceptualization of different epidemiologic approaches to the understanding of the causes of health and disease in population-based research;
2. synthesis of existing literature in epidemiology;
3. experience in the design and conduct of epidemiologic studies;
4. sample size estimation for basic epidemiologic study designs;
5. analysis of data from epidemiologic studies using appropriate statistical methods; and
6. effective communication of scientific findings. The training is provided through coursework and the completion of a written thesis.

ScM students who would like to obtain experience teaching can discuss Teaching Assistantship opportunities with the Graduate Program Director. The Sheridan Center offers a variety of resources for students, including support for teaching and English language learning. ScM students can also explore the possibility of Research Assistantships with the Master's Program Director and department faculty.
Coursework

The Master’s program requires 12 courses to complete. Students must complete at least 8 credits of didactic coursework. The remaining 4 credits may be fulfilled through a combination of didactic coursework or independent studies. Of the 8 classroom courses required, at least 4 will be epidemiology courses with substantial methodological focus and at least 2 others will be in biostatistics.

The program expects students to enroll in 3 courses per semester. Occasionally, and with written permission from the Graduate Program Director, students may opt to take additional courses and, in some instances, complete the degree in 3 semesters.

**NOTE**: Please refer to the appendix for course descriptions.
In addition, master’s students are required participate in the Journal Club series and to take the following non-credit courses:

**Public Health 1001**
The School of Public Health has developed an on-line, non-credit, modular course covering the scope of public health (Public Health 101) to meet the requirements of the accrediting organization for the School of Public Health (i.e., The Council on Education for Public Health). Students are required to receive instruction in the breadth of public health. There is no charge for the on-line course. The course presents one module at a time; three in the fall and three in the spring semester. Each module is made up of 3-5 sessions, each created by a Brown faculty member. Modules are set up to run for one scheduled week per session, during which the faculty member for that session will be available for questions using an online discussion. However, students can complete the module at their own pace, though faculty will not be available outside of their scheduled week.

**Online SAS Training**
Two online courses offered by the SAS Institute will be required.

**SAS Programming 1: Essentials**  
[https://support.sas.com/edu/schedules.html?ctry=us&crs=PROG1](https://support.sas.com/edu/schedules.html?ctry=us&crs=PROG1)  
is designed as a basic introduction to SAS and must be completed by the end of the first term by all students unless a waiver is obtained from the GPD. The emphasis is on data management (including how to read in different types of data, formatting, and creating variables) and, programming univariate comparisons -  
[https://support.sas.com/edu/schedules.html?id=2588&ctry=US&s1=3](https://support.sas.com/edu/schedules.html?id=2588&ctry=US&s1=3)

**SAS Programming 2: Data Management**  
[https://support.sas.com/edu/schedules.html?ctry=us&crs=PROG2](https://support.sas.com/edu/schedules.html?ctry=us&crs=PROG2),  
which must be completed by the 2nd semester, includes more advanced data management, including do loops and arrays, as well as summarizing, reading, and writing different types of data. The online learning is self-paced, but students are encouraged to start the training early in the first semester. Epidemiology courses offered during the second term will assume the online SAS courses have been completed and that the students understand the material in the training.

[https://support.sas.com/edu/schedules.html?id=2588&ctry=US](https://support.sas.com/edu/schedules.html?id=2588&ctry=US)
Research Ethics Training in the School of Public Health (RCR Training)

All first-year master’s Epidemiology students are required to successfully complete “Responsible Conduct in Research (RCR) Training.” This five-week introduction to the scope and complexity of ethical situations that confront modern public health practitioners is led by the School’s Associate Dean for Academic Affairs (Don Operario). Training covers multiple topics including: the context and history of ethical research practices within public health; research misconduct; the peer review process and its purpose; publication practices and responsible authorship; practical and ethical issues in human-subjects research; data acquisition, storage, and privacy; use of electronic resources; recognizing and navigating conflicts of interest; the mentoring relationship and associated responsibilities of mentors and trainees; and societal impact of public health research. Discussion of the ethics of diversity is incorporated to convey an appreciation for the fact that differences of race, culture, age, gender, disability, and religion can affect the conduct and interpretation of research. The training includes presentations, short illustrative films specific to public health research issues, and small group discussion of hypothetical and real scenarios drawn from current literature and the news media. Supplemental materials and homework assignments are provided through the Collaborative Institutional Review Board Training Initiative (CITI) program online system. School of Public Health faculty and University staff from the Office of Vice President for Research and Research Administration participate as presenters and discussants along with students. Successful completion of this course includes attendance at all meetings and passing the written final examination.

Additionally, all students may continue their training after the first year by attending relevant lectures and discussion sessions sponsored by the Office of the Vice President for Research:

http://www.brown.edu/research/brown-bag-rcr-conversations-graduate-students-and-postdoctoral-researchers

Students pursuing a ScM in Epidemiology are required to take the following courses:

**PHP 2150** – Foundations in Epidemiologic Research Methods  
**PHP 2200** – Intermediate Methods in Epidemiologic Research  
**PHP 2130** – Human Biology for Epidemiology
AND at least two of the following: Approved Methods Electives for PhD and ScM Epidemiology Students

Students are encouraged to seek diversity in their epidemiologic and biostatistical methods training, in line with their career goals. The following courses have been approved to be counted as methods courses for PhD and ScM Epidemiology students.

**PHP 1560/2560** – Statistical Programming in R\(^1,2\)
**PHP 2030** – Clinical Trials Methodology
**PHP 2040** – Applied Research Methods
**PHP 2118** – Genomics Epidemiology
**PHP 2180** – Interpretation and Application of Epidemiology\(^3\)
**PHP 2220B** - Nutritional Epidemiology\(^*\)
**PHP 2250** – Advanced Quantitative Methods in Epidemiologic Research\(^3\)
**PHP 2260** – Applied Epidemiologic Analysis Using SAS\(^2,4\)
**PHP 2430** – Analysis of Population Based Datasets\(^2,4\)
**PHP 2440** - Introduction to Pharmacoepidemiology
**PHP 2455A** – Health Services Research Methods I\(^5\)
**PHP 2455B** – Health Services Research Methods II\(^5\)
**PHP 2465A** – Introduction to Health Decision Analysis
**PHP 2520** – Statistical Inference I
**PHP 2530** – Bayesian Statistical Methods
**PHP 2540** – Advanced Methods for Multivariate Analysis
**PHP 2550** – Practical Data Analysis\(^2,4\)
**PHP 2601** – Linear and Generalized Linear Models
**PHP 2602** – Analysis of Lifetime Data
**PHP 2603** – Analysis of Longitudinal Data
**PHP 2610** – Causal Inference and Missing Data
**PHP 2620** – Statistical Methods in Bioinformatics I

\(^*\)May be used as a substantive or methods elective, but cannot be counted towards both requirements.

**Required Biostatistics Courses:**
**PHP 2510** – Principles of Biostatistics and Data Analysis
**PHP 2511** – Introduction to Applied Regression Analysis

**NOTE:** Qualified students may request permission from their advisor to substitute more advanced biostatistics courses in place of these introductory courses (this requires waiving the introductory courses, see box on next page).
The remaining courses can be selected from among various offerings in Public Health, Sociology, Environmental Studies, or related disciplines with approval from the student’s academic advisor. Electives must be chosen so the student will develop substantive expertise in epidemiologic methods as applied to a specific substantive area, such as cardiovascular, cancer, infectious disease, environmental epidemiology, or health services research. Independent Studies completed under the direction of an Epidemiology faculty member may also be counted as electives with prior approval of the study plan from the student’s academic advisor.

Students may request that up to four related graduate/medical courses taken previously be counted toward the twelve course requirement.

NOTE – COURSE WAIVERS: Some courses may be waived at the faculty’s discretion if students have received credit elsewhere. Students should use the Course Waiver Request Form (see the appendix) to request permission to waive a required course. Generally, only required introductory courses can be waived, and then only when a student can demonstrate that s/he has satisfactorily completed an equivalent course at Brown or at another institution. Students seeking permission should obtain signatures first from their advisor, second from the course instructor, and lastly, from the Master’s Program Director. The course instructor may ask the student to take a past final exam from the course for which a waiver is being requested. Students should propose a suitable alternate activity in place of the waived course, which may include: serving as a TA for the waived course, taking an alternate course, or an independent study. Completed forms should be returned to the department’s Academic Program Coordinator.
Sample Curricula

The following is a sample program for the two-year curriculum leading to a ScM in Epidemiology:

Semester I (Fall):
PHP 2150 – Foundations of Epidemiologic Research
PHP 2510 – Principles of Biostatistics and Data Analysis Public Health 101 (non-credit)
Online Graduate Student Course on SAS Data Management (non-credit)
Responsible Conduct in Research (RCR) Course (non-credit)

Semester II (Spring):
PHP 2200 – Intermediate Methods in Epidemiologic Research
PHP 2511 – Applied Regression Analysis
1 Elective or Independent Study
Begin development of thesis proposal
Public Health 101 (non-credit)

Semester III (Fall):
PHP 2030 – Clinical Trials Methodology
1 Credits of Electives or Independent Studies
Finalize thesis proposal and begin thesis work

Semester IV (Spring):
PHP 2180 – Interpretation and Application of Epidemiology
2 Credits of Electives or Independent Studies
Complete thesis
Bi-Annual Student Evaluations

Students are formally evaluated by their advisor and the Master's Program Director twice per academic year. The Master’s Program Director’s role is to provide consolidated feedback to students about their performance and progress in the program. The Academic Advisor should provide specific feedback to the student based on consultation with the Master’s Program Director and conversations with the student. If the determination is made that a student is not making satisfactory progress, prospects for future financial support could be adversely affected and/or student enrollment in the program may be terminated. The results of the evaluation are communicated to students in a letter from the Graduate Program Director.

Academic and Thesis Advisors are strongly encouraged to contact the Graduate Program Director if there is a concern about the student’s progress or performance in order to facilitate early interventions.

Role of the Master’s Program Director: The Master’s Program Director will send an email to students at the end of the Fall semester requesting the completed IDP and asking if there are any concerns about the student’s progress. Students may consult with the Master’s Program Director or Graduate Program Director on confidential matters associated with advising or personal/professional matters.
Master’s Thesis Requirements

All students working toward the Master’s of Science (ScM) degree are required to demonstrate competency in carrying out an independent research project, culminating in a written thesis that is suitable for submission to a recognized, peer-reviewed journal. While students are not required to submit their thesis manuscript for publication in a peer-review journal, they are strongly encouraged to do so. Apart from the thesis, there is no written examination requirement for the ScM degree. The master’s thesis should consist of one of the following:

1. Development of a theoretical or methodological advance in epidemiology, or
2. A critical and systematic review of a substantive issue in epidemiology, or
3. Primary data collection and/or analysis of existing data bases that provide new substantive findings.

Selection of the Master’s Thesis Advisor and Reader: Students must choose their thesis advisor by the end of their second semester and submit the thesis proposal by June 1st of their first year. Selection of a Master’s Thesis Advisor is usually dictated by the topic a student wishes to pursue. Students are encouraged to learn about faculty interests by taking classes and possibly independent reading courses, and of course by visiting faculty members in person.

Master’s Thesis Advisor and Reader(s)
The Master’s thesis advisor provides ongoing supervision and consultation for conceptualization, design, conduct, analysis, and interpretation of the research project. Selection of a master’s thesis advisor is usually dictated by the topic a student wishes to pursue. Students are encouraged to learn about faculty interests by taking classes and possibly independent studies, and by visiting faculty members in person. The initial academic advisor may also become the advisor for the ScM thesis; however, students may arrange to work on their thesis under the supervision of another advisor. The thesis advisor has to be a faculty member who has an appointment (primary, secondary, or adjunct) within the Department of Epidemiology.

In addition to the primary advisor, the student must also select at least one reader from among the Brown faculty. A second reader, who may be asked to provide comment or evaluation related to a specialized topic, is optional. The second reader does not need to be on the Department’s faculty roster. In cases where the second reader is a faculty member at another institution, the second reader will act in the
role of consultant, and in particular does not have approval or disapproval authority over the final thesis. The committee should be selected once the student has selected a topic, and no later than the beginning of the third semester.

_The thesis advisor, with input from the reader(s), determines the point at which the student has successfully completed the stated research project._ The student should arrange a meeting with the thesis committee early in the development of the thesis project to clarify roles and expectations. At that time, a schedule for submission of drafts should be agreed upon. Some readers may want to be minimally involved, commenting only on later drafts of the thesis. Others may want extensive
involvement during all phases of the thesis project. Regardless of process, the thesis advisor should provide regular feedback to the student regarding progress of the project.

**Timeline for the Master of Science in Epidemiology Thesis**

**Master’s Thesis Timeframe**
The thesis constitutes significant effort often requiring several semesters. Students should consult with their academic advisor and their thesis advisor to create an appropriate timeline for the thesis project. Students are advised to meet with their thesis advisor on a regular basis. It is important to plan a meeting schedule with the thesis advisor throughout the development of the thesis.

Students must choose their thesis advisor and submit the thesis proposal by **June 1st** of their first year. Students must submit a progress report completed by their thesis advisor by **January 15th** for graduation in that year. The advisor should indicate whether or not the student has made adequate progress toward completion of the thesis and if they will be able to complete the thesis in a timely manner prior to graduation.

In the final year of study, all data analyses should be completed by the end of the student’s first semester to allow time for writing and interpretation. Students must complete the thesis by **April 1st** for graduation in that year.

Students are advised to allow sufficient time to make corrections and prepare the thesis for submission to the Graduate School. This should include developing a timeline with the thesis advisor and reader to be sure that they have sufficient time to read the thesis, return comments (multiple times) and sign it prior to the deadline.

**Master’s Thesis Proposal**
With guidance from their research advisor, students should write a single-spaced, 1-page “ScM Thesis Proposal.” This document should include a clearly articulated research question and succinctly summarize the: 1) background literature and gaps related to their thesis topic, 2) the dataset they will use, and 3) the methods they will use to address their question.
The thesis proposal is due June 1st of the second semester and should be submitted to the Master’s Program Director for approval.

**Oral Presentation**
As part of the thesis process, the Department requires all students to orally present the completed project during Epidemiology Master’s Research Day in the spring semester of their second year. This is a capstone experience rather than a formal defense and is scheduled by the Academic Program Coordinator. Students should be prepared for this presentation after the written version of the thesis has gained at least tentative approval by the faculty advisor and reader(s) but well before the deadline for submitting the thesis to the Graduate School. The student and committee may collectively decide to incorporate comments offered during the oral presentation into the final version of the written thesis.

The presentation should be fifteen minutes in length and is followed by ten minutes of questions and discussion. The thesis advisor and reader should attend.
Presentations will be advertised to the School of Public Health community and all will be welcome to attend.

**Submitting the final version to the Graduate School**
The University Graduate School requires all master’s theses to be submitted by May 1st for a May graduation. Students must submit their thesis electronically. The Graduate School has compiled detailed instructions to help graduate students with the preparation and presentation of the Master’s Thesis. These instructions are located at the following website:


When the thesis is presented to the Graduate School, it must be in final form. It may not be revised in any way after it is submitted.

**NOTE**: In addition to providing the Graduate School with the required number of copies of the ScM dissertation, the student must also provide the Department of Epidemiology and each committee member both a printed and electronic copy of the thesis. These copies should be submitted to the Academic Program Coordinator.
Please see appendix for a complete outline of the Timeline for Master of Science in Epidemiology Thesis.

**NOTE:** The Graduate School requires all master's theses to be completed by May 1 for May graduation. [https://www.brown.edu/academics/gradschool/masters-thesis-guidelines](https://www.brown.edu/academics/gradschool/masters-thesis-guidelines)

**Master’s Advising Guidelines**

*Academic Advisors:* All entering master’s students are assigned an Academic Advisor from the Epidemiology faculty. The faculty member must have a primary appointment in the Department. The role of the Academic Advisor is to meet regularly with the student, provide guidance on the student’s academic and career goals, help with the selection of courses and the completion of the Individual Development Plan (IDP), identify and discuss any challenges in the graduate program, help with the identification of a thesis topic/advisor, and serve as a resource to the student for general professional development advice, mentorship, and academic advocacy. Academic Advisors will also provide the Master’s Program Director with a formal evaluation of each student and discuss this evaluation in greater detail with the student.

Topics relevant for the evaluation may include (but are not limited to) status in academic courses, performance on exams or papers, progress towards the thesis, and professional development.

Students must meet with their Academic Advisors at least twice per semester. One meeting should occur at the beginning of the semester as an introductory meeting to plan and set goals for the semester, and one meeting should occur after the mid-point of the semester to discuss the student’s experiences and challenges and review the student’s IDP and mid-term exam results. Additional and regular contact between students and Advisor is encouraged.

**NOTE:** Advisors should note that the Graduate Student Handbook a student enters the program with is the handbook that they follow for the duration of their time in the program.
Academic advisors should discuss students’ research interests during their meetings and encourage students to meet with faculty members that have relevant expertise, interests, or data that could be leveraged for the student’s thesis. In addition, advisors are strongly encouraged to discuss topics related to professional and career development with students, including advice on publishing manuscripts, the selection of appropriate journals for manuscripts, networking, and presentation skills.

Semi-annual meetings are not intended to substitute for regular contact and students are encouraged to take the initiative to schedule additional appointments with Advisors on a recurring basis as needed.
<table>
<thead>
<tr>
<th>First Year</th>
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</thead>
</table>
| **First Semester** | **Meet with Faculty**  
Students should confer with their core advisor and review the faculty directory to find faculty with public health research interests similar to their own. Students should meet with faculty to discuss their research projects and current issues in the student’s area of interest.  
([http://www.brown.edu/academics/public-health/faculty](http://www.brown.edu/academics/public-health/faculty))  
**Preliminary Research**  
Students should begin to narrow their thesis topic by reading the literature and meeting with potential thesis advisors. Discussions with the epidemiology faculty should provide the opportunity to explore various topics of interest and thesis topic ideas. Students might also want to learn about the thesis projects previous ScM students have completed, which will be kept on file in the Epidemiology library. |
| **Second Semester** | **June 1 – Thesis Proposal Due**  
Students should identify a thesis advisor to guide the development of their thesis proposal. The thesis proposal should include a timeline for completion, including data analysis, first draft of literature review (if choosing this thesis option), first draft of paper/s, and final thesis. The proposal should clearly define and justify the thesis project. |

<table>
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<th>Second Year</th>
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</table>
| **Summer** | **It is recommended that students begin their thesis work over the summer. Data Analysis**  
Students who are going to undertake a primary data analysis for their thesis are strongly advised to complete most of their data analyses over the summer.  
**First Draft of Literature Review (including Meta-Analysis)**  
Students preparing a literature review should have a first draft completed by September 1. |
| **First Semester** | **Data Analyses**  
All data analyses should be completed by the end of the first two months of the first semester, or before the beginning of the 2nd semester at the latest, to allow time for writing and interpretation.  
**First Draft of Paper/s Sections**  
Students should submit a first draft of their paper/s to include the Introduction and Methodology sections by October 1st; the Results section by November 15th; a draft of the entire paper/s by January 10th; and the final completed thesis, signed by the advisor and reader, by March 1st.  
**January 15th – Progress Report**  
Students must submit a progress report completed by their thesis advisor by January 15th. The advisor should indicate if the student has met the recommended timelines; has made good progress toward completion of the thesis; and will, or will not, be able to complete the thesis by March 1st (Appendix B). |
| **Second Semester** | **April 1st- Submit Thesis**  
Students must complete the thesis by March 1st to allow sufficient time to respond to formatting changes to comply with the requirements of the Graduate School (Appendix D). Students need to allow enough time for the thesis advisor and reader to review the thesis, return comments (to be addressed by student in final draft), and sign the thesis prior to the March 1st deadline.  
**May 1st**  
The Master’s Thesis must be submitted to the Graduate School for graduation in May.  
(NOTE: Students must make an appointment to submit the thesis; contact Barbara Bennett in the Graduate School at 401-863-2843) |
Template to Help Conceptualize and Design Thesis or Dissertation Topic Papers

<table>
<thead>
<tr>
<th>Thesis Title:</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>Brief Background:</td>
<td></td>
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<tr>
<td>Research Question:</td>
<td></td>
</tr>
<tr>
<td>Data Source (e.g., Women’s Health Initiative):</td>
<td></td>
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<tr>
<td>Estimated Sample Size:</td>
<td></td>
</tr>
<tr>
<td>Source Population (Persons, place, &amp; time):</td>
<td></td>
</tr>
<tr>
<td>Primary Exposure(s):</td>
<td></td>
</tr>
<tr>
<td>Primary Outcome(s):</td>
<td></td>
</tr>
<tr>
<td>Potential Confounders and/or Covariates (age, sex, race, and SES):</td>
<td></td>
</tr>
<tr>
<td>Potential Modifiers (e.g., sex or race):</td>
<td></td>
</tr>
<tr>
<td>Analytic Methods (e.g., logistic or linear regression):</td>
<td></td>
</tr>
<tr>
<td>Effect Measures to be Estimated (e.g., relative risk of disease among those with exposure compared to those without):</td>
<td></td>
</tr>
</tbody>
</table>

21
Seminars, Clubs, and Forums
One of the Program’s priorities is that graduate students become proficient in the written and oral communication of scientific thinking. One strategy for the support and development of communication skills is the participation in the Department of Epidemiology Seminar Series, Journal Club, and Faculty Forum.

Epidemiology Seminar Series
This series brings in both US and international experts in epidemiology methods and applications. These seminars are a critical element for graduate training in Epidemiology, and attendance is mandatory for all students (attendance will be taken into account as a part of end of semester and end of year progress reviews). Participation in discussion during these seminars is central to both graduate training and our community of epidemiologic scholarship. The seminar series runs throughout the academic year. Schedules for the fall and spring semester are typically distributed at the beginning of each semester.

Journal Club
The objective of the Journal Club is to provide students with a regular, peer-led, semi-structured discussion forum in which they:

- Critically appraise empirical, methodological, or theoretical papers in their field
- Improve oral presentation skills through giving presentations and scholarly debate about topics in a more casual and comfortable setting
- Network with peers, Brown faculty members, and outside speakers

Meeting Schedule:
- Journal Club meetings for the Doctoral and Master’s Programs in Epidemiology occur once per month on Tuesdays from 12:00-1:00 pm, with the exception of during months when there is a Faculty Forum. During the months when there is a Faculty Forum, Journal Club will meet twice in the same month.
- Journal Club meetings take place at 121 South Main St. in room 375
Instructor of Record:

- Every departmental journal club will have an Instructor of Record and is required to notify the Associate Dean and Academic Program Manager of the Instructor’s name prior to pre-registration.
- Primary responsibilities include: attending a meeting prior to the start of the semester with the Graduate Program Director and Student Journal Club Director(s) to review guidelines; attending the first journal club of each semester to review guidelines with doctoral and master’s students; reviewing journal club attendance; assisting in selection of articles upon request; attending additional Journal Club meetings upon request.
- The instructor of record will be assigned a section under PHP2950 and will be responsible for assigning a grade of Pass or Fail for the Student Journal Club Director(s) registered in their section of PHP2950.
- In the beginning of each semester, the Instructor of Record or the Academic Program Coordinator will contact the Seminar Series Director to obtain the names and dates of the seminar series speakers for that semester to facilitate seminar series speakers participating in journal club during that semester.

Attendance Policy:

- Every doctoral student in the School of Public Health is required to attend Journal Club each semester while enrolled in the program unless exempted by the Graduate Program Director.
- Every doctoral student is required to be a discussion facilitator at least once during the academic year.
- Department of Epidemiology Master’s students are required to attend Journal Club each semester while enrolled in the program unless exempted by the Master’s Program Director.
- Every Master’s student is required to be a discussion facilitator at least once during their time in the ScM program, preferably in their second year of the program to allow for their mastery of Epidemiology content to be more advanced.
- The Graduate Program Director and the Master’s Program Director should notify the Instructor of Record, in writing, of any exemptions being granted each semester.
- Copies of exemptions are to be filed in the student’s e-record (Please ask for a waiver form).
• The Academic Program Coordinator will email the Instructor of Record and the Graduate Program Director if a student has missed two consecutive Journal Club sessions in a given semester. The Graduate Program Director will email the student regarding the missed Journal Club sessions.

Responsibilities

Journal Club Student Director(s):
All doctoral students must serve as Journal Club Director for one full semester, typically during their 2nd or 3rd year. Students may serve as co-directors depending on cohort size. Doctoral students should register for Journal Club course credit (PHP2950) during the semester when they will act as the Journal Club Student Director(s). Student directors are responsible for:

• Coordinating/assigning student discussion facilitators for each journal club session (including sending reminders; circulating papers in advance).
• Maintaining the semester Journal Club schedule (see below table).
• Organizing one faculty forum per semester, which includes a Brown faculty member discussing their career path and research.
• Recording attendance for the Instructor of Record.
• Ordering food, as needed, with the assistance of the Academic Program Coordinator.
• Administering and summarizing a student evaluation via a survey of the overall course.
• Assist the Student Discussion Facilitators during the breakout groups (see below) by joining a breakout group that the Student Discussion Facilitators are not participating in, when possible, and facilitating discussion as needed and helping to ensure balance of discussion by PhD and ScM students in the breakout group
• Sending the article (published or draft, as appropriate), discussion questions, and presentation slides to the students one week before the relevant Journal Club date.
• Ensure that the guest speaker, if there is one, as well as the faculty representative(s) are introduced.

Student Discussion Facilitators must:

• Identify an article or project in-progress for their session with a
broad topic area or a historical article during the journal club sessions where a guest speaker doesn’t select an article. Historical articles should be seminal papers that considerably impacted the field. The selected article/project should not be a systematic review or a meta-analysis.

- Come up with 2-3 questions as a starting place for discussing the article/project
- Send the selected article/project to the Instructor of Record for their approval at least two weeks before their Journal Club date.
- Send the article/project that was approved by the Instructor of Record and the questions to the Student Journal Club Director(s) at least 10 days before their Journal Club date.
- Lead the journal club discussion in breakout groups, preferably no greater than 10 students per group. The student discussion facilitators should join separate breakout groups and be prepared to lead the discussion in the breakout group that they join which includes helping to ensure balance of discussion by PhD and ScM students.

**Additional Department Specific Guidelines:**

- During a week when a seminar speaker is visiting, the goal is that an article selected by that speaker will be discussed. The Student Discussion Facilitators are responsible for contacting the Academic Program Coordinator for help with contacting the seminar speaker to obtain a suggestion for what article(s) should be discussed.
- Student Discussion Facilitators should introduce the paper and the guest seminar speaker if relevant. The Student Discussion Facilitators should introduce the paper by giving a presentation of no more than 5-mins at the start of journal club that highlights the paper objective(s), methods, results, and conclusions using no more than 3-4 slides. During a given journal club, the Student Discussion Facilitators should be one doctoral student and one second year ScM student. The Student Discussion Facilitators should send the slides to the Student Journal Club Director(s) at least 10 days before their Journal Club date.
- Faculty representatives are responsible for ensuring that discussion remains thoughtful, friendly, and supportive throughout the duration of the journal club session. Faculty
members should plan to drift between the breakout groups of students as needed. The Student Discussion Facilitators should make sure that the Faculty representatives introduce themselves prior to discussing the selected article/project.

- Students attending the journal who are not the Student Director(s) or Student Facilitator(s) should come to journal club with 2-3 questions and be prepared to share those questions during the breakout group discussion.

- We strongly encourage a diversity of topics over the school year. All students tend to share commonalities in being interested in Epidemiology methods training. Considering interesting methodological approaches across a diversity of applied areas (e.g. cardiovascular epidemiology, perinatal epidemiology, infectious disease epidemiology, social epidemiology, etc.) can allow for fostering training in areas of common interest, while enabling diversity of applications to the field of Epidemiology.

**Faculty Forum**

- A faculty forum is an opportunity for students to ask open-ended questions for the faculty member in an informal, single group setting. The faculty member must be Brown affiliated.
- There will be no paper discussed during the faculty forum.
- There will be no Student Discussion Facilitators during the faculty forums. The Student Director(s) will help facilitate the discussion and introduce the faculty member.

**Guest Seminar Speaker Guidelines:**

- When a guest seminar speaker attends Journal Club, the format will be to invite the speaker to start out with about 10 minutes of informally discussing their career path, such as how they got to where they are now, including questions from students about their career steps. This 10 minute discussion will occur as a single group. The subsequent 35 minutes will be focused on the paper presentation and breakout group discussion of the paper. During the breakout group discussion, the Student Discussion Facilitators should inform the guest speaker that they can either join a single breakout group or drift between the various breakout groups depending on which approach that they prefer. If a guest speaker prefers, it is fine to focus on the science of the paper.
only, and not on their career path.

- Before any speaker is added to the journal club schedule, the addition must be approved by the Instructor of Record.
- No more than half of the non-faculty forum journal club sessions should have a guest speaker and journal club sessions with guest speakers should not be back to back on the schedule.
Research and Teaching Opportunities for ScM Students

We encourage students to participate in research projects with department faculty. Students can assist with conducting literature reviews, field work, data entry, statistical analyses, and manuscript preparation. These projects can be related to the student’s ScM thesis. In some cases, faculty may pay students to work on these projects as a research assistant (RA) on either a 10 or 20 hour per week model.

Second year ScM students may also work as paid supplemental teaching assistants (TAs) for introductory public health or epidemiology courses. Students interested in working as a TA should contact Brittany Leclerc so they can be added to the pool of available TAs.

During a given semester, students should spend no more than 20 hours per week on activities related to their TA or RA. It is acceptable for a student to work for 10 hours per week as an RA and another 10 hours per week as a TA.

Students must be in good academic standing to be a TA or RA.
3. PhD Program Guide

Program Description

The Doctoral Program in Epidemiology’s mission is to prepare students to become leading, independent investigators with rigorous training in epidemiologic methods, able to excel in academia, industry, government or public health practice. All students in the Doctoral Program in Epidemiology are required to demonstrate mastery of advanced epidemiologic methods, which is assessed via coursework and examinations.

Upon completion of the PhD program, students are expected to have proficiency in the following areas: 1) Develop a strong foundation in contemporary approaches to epidemiologic methods, and major observational study designs; 2) Design a research study that can appropriately and efficiently examine an epidemiologic research question of interest; write and submit a proposal to support this research; 3) Use causal diagrams to identify threats to study validity and potential approaches to mitigating such threats; 4) Conduct appropriate analyses of epidemiologic data using standard regression models in SAS or R; 5) Distinguish between association and causation based on counterfactual theory to make causal inference using data obtained from observational studies; 6) Represent a priori subject-matter knowledge and hypotheses with causal diagrams; 7) Understand the difference between effect modification and interaction; 8) Learn to interpret and integrate multiple lines of scientific evidence concerning a particular topic of importance to the field of epidemiology; 9) Effective communication of scientific findings; 10) Demonstrate a basic understanding of human physiology and pathophysiology; 11) Demonstrate mastery of a substantive area; 12) Review, critically analyze and synthesize existing epidemiologic literature to identify meaningful gaps in current knowledge and formulate research objectives; 13) Strong understanding of what scientific misconduct is and the impact unethical conduct can cause within and outside of the research community.
Coursework

All students in the PhD program in Epidemiology are required to take 13 courses for credit, including 9 core courses, 2 or more methods elective courses, and 2 or more substantive elective courses. Each of these courses must be taken for credit and for a grade. PhD students are also required to: a) take PHP101, an online, noncredit introductory course b) take a noncredit online introductory course on SAS data management, c) participate in the journal club series (course credit optional), and d) take the noncredit Responsible Conduct in Research (RCR) course.

NOTE: Please refer to the appendix for course descriptions.
Specifically, students pursuing a PhD in Epidemiology are required to take the following:

**Core Courses:**
- **PHP 2150** – Foundations in Epidemiologic Research Methods
- **PHP 2200** – Intermediate Methods in Epidemiologic Research
- **PHP 2250** – Advanced Quantitative Methods for Epidemiologic Research
- **PHP 2180** – Interpretation and Application of Epidemiology
- **PHP 2510** – Principles of Biostatistics and Data Analysis
- **PHP 2511** – Applied Regression Analysis
- **PHP 2090** – Research Grant Writing for Public Health
- **PHP 2130** – Human Biology for Epidemiology

**In addition, doctoral students are required to take the following non-credit courses during the first semester:**

**Public Health 101**
The School of Public Health has developed an on-line, non-credit, modular course covering the scope of public health (Public Health 101) to meet the requirements of the accrediting organization for the School of Public Health (i.e., The Council on Education for Public Health). Students are required to receive instruction in the breadth of public health, in addition to having the equivalent of a three credit-hour instruction in epidemiology. There is no charge for the on-line course. As of fall 2015, students in the MPH and the undergraduate Public Health concentration will receive the necessary broad scope of content in their courses, and thus are NOT required to complete PHP 101. All other non-MPH graduate students are required to take the online course. The course presents one module at a time; three in the fall and three in the spring semester. Each module is made up of 3-5 sessions, each created by a Brown faculty member. Modules are set up to run for one scheduled week per session, during which the faculty member for that session will be available for questions using an online discussion. However, students can complete the module at their own pace, though faculty will not be available outside of their scheduled week. Students in a degree program that is represented by a module do not complete that specific module (e.g. Epidemiology students will not be required to take the epidemiology module). If a student can document that they have
either or both of these two requirements from previous coursework, a waiver can be granted at the discretion of the degree program.

Online Graduate Student Course on SAS Data Management
Two online courses offered by the SAS Institute will be required. **SAS Programming 1: Essentials** is designed as a basic introduction to SAS and must be completed by the end of the first term by all students unless a waiver is obtained from the GPD. The emphasis is on data management (including how to read in different types of data, formatting, and creating variables) and, programming univariate comparisons - https://support.sas.com/edu/schedules.html?id=2588&ctry=US#s1=3

The topics for the second course include more advanced data management, including do loops and arrays, as well as summarizing, reading, and writing different types of data - https://support.sas.com/edu/schedules.html?ctry=us&crs=PROG2#s1=3. The online learning is self-paced, but students are encouraged to start the training early in the first semester. Epidemiology courses offered during the second term will assume the online SAS courses have been completed and that the students understand the material in the training.

https://support.sas.com/edu/schedules.html?id=2588&ctry=US

Research Ethics Training in the School of Public Health (RCR Training)
All first-year doctoral students in the School of Public Health are required to successfully complete “Responsible Conduct in Research (RCR) Training.” This five-week introduction to the scope and complexity of ethical situations that confront modern public health practitioners is led by the School’s Associate Dean for Academic Affairs (Don Operario). Training covers multiple topics including: the context and history of ethical research practices within public health; research misconduct; the peer review process and its purpose; publication practices and responsible authorship; practical and ethical issues in human-subjects research; data acquisition, storage, and privacy; use of electronic resources; recognizing and navigating conflicts of interest; the mentoring relationship and associated responsibilities of mentors and trainees; and societal impact of public health research. Discussion of the ethics of diversity is incorporated to convey an appreciation for
the fact that differences of race, culture, age, gender, disability, and religion can affect the conduct and interpretation of research. The training includes presentations, short illustrative films specific to public health research issues, and small group discussion of hypothetical and real scenarios drawn from current literature and the news media. Supplemental materials and homework assignments are provided through the Collaborative Institutional Review Board Training Initiative (CITI) program online system. School of Public Health faculty and University staff from the Office of Vice President for Research and Research Administration participate as presenters and discussants along with students.

Successful completion of this course includes attendance at all meetings and passing the written final examination.

This course can be accessed through Brown University’s Canvas site.

https://canvas.brown.edu/
Additionally, all students may continue their training after the first year by attending relevant lectures and discussion sessions sponsored by the Office of the Vice President for Research:

http://www.brown.edu/research/brown-bag/rcr-conversations-graduate-students-and-postdoctoral-researchers

**Students must also take 2 or more of the following methods elective courses (note, not all courses will be offered each year):**

**AND at least two of the following: Approved Methods Electives for PhD and ScM Epidemiology Students**

Students are encouraged to seek diversity in their epidemiologic and biostatistical methods training, in line with their career goals. The following courses have been approved to be counted as methods courses for PhD and ScM Epidemiology students.

- **PHP 1560/2560** – Statistical Programming in R
- **PHP 2030** – Clinical Trials Methodology
- **PHP 2040** – Applied Research Methods
- **PHP 2118** – Genomics Epidemiology
- **PHP 2180** – Interpretation and Application of Epidemiology
- **PHP 2220B** - Nutritional Epidemiology
- **PHP 2250** – Advanced Quantitative Methods in Epidemiologic Research
- **PHP 2260** – Applied Epidemiologic Analysis Using SAS
- **PHP 2430** – Analysis of Population Based Datasets
- **PHP 2440** - Introduction to Pharmacoepidemiology*
- **PHP 2455A** – Health Services Research Methods I
- **PHP 2455B** – Health Services Research Methods II
- **PHP 2465A** – Introduction to Health Decision Analysis
- **PHP 2520** – Statistical Inference I
- **PHP 2530** – Bayesian Statistical Methods
- **PHP 2540** – Advanced Methods for Multivariate Analysis
- **PHP 2550** – Practical Data Analysis
- **PHP 2601** – Linear and Generalized Linear Models
- **PHP 2602** – Analysis of Lifetime Data
- **PHP 2603** – Analysis of Longitudinal Data
- **PHP 2610** – Causal Inference and Missing Data
- **PHP 2620** – Statistical Methods in Bioinformatics I
Additional methods electives will be approved at the discretion of the department Curriculum Committee. Students wishing to have a course approved as a methods elective should consult with their advisor. With support of the advisor, the student should then forward a copy of the course's syllabus and a brief rationale for taking the course as a methods elective to the Curriculum Committee for review and possible approval.

Students must also take 2 or more of the following substantive elective courses (note, not all courses will be offered each year):

PHP 1700 – Introduction to Environmental Health  
PHP 1854 – The Epidemiology and Control of Infectious Diseases PHP 1880 – Meditation, Mindfulness, and Health  
PHP 1900 – Epidemiology of Disorders and Diseases of Childhood and Young Adulthood  
PHP 1920 – Social Determinants of Health  
PHP 1960 – Epidemiology of Chronic Disease  
PHP 1964 – Cancer Epidemiology and Prevention  
PHP 2018 – The Epidemiology of Cardio-metabolic Health  
PHP 2170 – Injury as a Public Health Problem  
PHP 2220C – Perinatal Epidemiology  
PHP 2220E – Topics in Environmental and Occupational Epidemiology  
PHP 2220H – Epidemiology, Treatment and Prevention of HIV  
PHP 2440 - Introduction to Pharmacoepidemiology*

*Can be used as both a substantive or methods elective, but cannot count towards both.

In addition to the above lists of approved substantive elective courses, students may choose appropriate elective courses offered by other graduate departments at Brown University. For example, where relevant to a student’s thesis work or career goals, doctoral students may obtain permission (from their advisor and the Graduate Program Director) to count the following towards the substantive elective course requirements, as appropriate (the courses listed below are examples, other courses can be requested):

BIOL 2860 – Molecular Mechanisms of Disease  
BIOL 1290 – Cancer Biology
BIOL 2320 – Current Topics in Developmental Biology  
NEUR 1670 – Neuropharmacology and Synaptic Transmission  
ECON 1630 – Econometrics I  
ECON 1370 – Race and Inequality in the United States

Based upon individual interests, students may take more than the minimum number of required and elective courses. Students may also register for independent study courses under the guidance of individual faculty members. These may be directly related to their work toward completion of their doctoral dissertation or may be taken early in their graduate student career as they work towards identifying a dissertation area and specific project.

**NOTE – COURSE WAIVERS:** Some courses may be waived at the faculty’s discretion if students have received credit elsewhere. Students should use the Course Waiver Request Form (see the appendix) to request permission to waive a required course. Generally, only required introductory courses can be waived (e.g.: PHP2510, PHP2130), and only when a student can demonstrate that s/he has satisfactorily completed an equivalent course at Brown or at another institution. Students seeking permission should obtain signatures first from their advisor, second from the course instructor, and lastly, from the Graduate Program Director. The course instructor may ask the student to take a past final exam from the course for which a waiver is being requested. Students may propose a suitable alternate activity in place of the waived course, which can include: serving as a TA for the waived course, taking an alternate course, and an independent study. Completed forms to be returned to the Academic Program Coordinator.
Sample Curriculum

The following is a sample curriculum for the program leading to a PhD in Epidemiology:

**Semester I (Fall):**
PHP 2150 – Foundations in Epidemiologic Research Methods  
PHP 2510 – Principles of Biostatistics and Data Analysis  
1. Elective  
Teaching Assistantship or Research Assistantship Public Health 101  
(non-credit)  
2 Online SAS training courses  
Responsible Conduct of Research (RCR) course (non-credit)

**Semester II (Spring):**
PHP 2200 – Intermediate Methods in Epidemiologic Research  
PHP 2511 – Applied Regression Analysis  
Teaching Assistantship or Research Assistantship  
Public Health 101 (non-credit)

**Semester III (Fall):**
PHP 2090 – Research Grant Writing for Public Health  
PHP 2250 – Advanced Quantitative Methods for Epidemiologic Research  
1 Elective  
Teaching Assistantship or Research Assistantship

**Semester IV (Spring):**
PHP 2130 – Human Biology for Epidemiology  
PHP 2180 – Interpretation and Application of Epidemiology  
1 Elective  
Teaching Assistantship or Research Assistantship  
Submit external funding application (e.g., NIH NSRAF31)  
At end of semester take written qualifying exam in Epidemiology

**Semester V:** 1 Elective TE for credit  
Research Assistantship  
Oral Dissertation Proposal Exam by end of semester

**Subsequent semesters:**  
PHP 2980 – Independent Study/Thesis Research
Additional electives (if necessary, to complete required 13 courses)

Written Qualifying Exams

Students are required to pass a written qualifying exam, which tests their knowledge on intermediate and advanced Epidemiology. For full-time students the qualifying exam is taken at the end of the fourth semester (June). Faculty from the appropriate track will write and grade the examination. The Epidemiology comprehensive exam will cover material from all classes required for Epidemiology doctoral students and typically completed by the end of the 4th semester. Following the grading process, the faculty within each track meet to discuss each student’s performance and collectively decide on a recommendation. The recommendations will ordinarily be communicated to students within two weeks. These take four forms: high pass, full pass, conditional pass, and no pass. Students who earn at least a full pass on all portions of the required written examination are eligible to begin the dissertation process (identifying a dissertation advisor, preparing thesis proposal, etc.) Students who earn a conditional pass may also be eligible to begin the dissertation process, but may be required to remedy any stated deficiencies (e.g. through directed self-study or re-taking parts of the exam). Students who do not pass the written examination on the first attempt have one additional opportunity to earn a pass. Those who elect to re-take the exam must do so within one year. A cumulative total of two failures (on any portion of the written examination) results in immediate termination from the doctoral program.

A sample of previous written examinations for each academic track can be obtained from the office of the Academic Program Coordinator in the Department of Epidemiology.
Research Assistantships

Students in Epidemiology participate in RAships in a variety of on and off campus settings, including Research Centers within the School of Public Health, the Rhode Island Department of Health, and clinical departments at Brown-affiliated hospitals. An RAship is an integral part of the student’s training program. The Epidemiology Graduate Program Director will identify one or more RA options for an individual student, through discussions with the student and potential RA advisors. All efforts will be made to identify RAships that are well-aligned with the student’s substantive interests. Students will have the option to accept the proposed RAship, to identify an alternative that is acceptable to the Graduate Program Director, or to forgo financial support. If a student completes their coursework for the program and receives permission to finish the program remotely, they will be responsible for finding a research appointment that is compatible with their location or forgo financial support. Students must be in good academic standing to be a RA.

The RA advisor is responsible for supervising and directing the student’s work during the term of the appointment. The RA advisor is responsible for coordinating, scheduling, and keeping appropriate documentation of the RA’s activity; this is a particularly important function on large projects where the RA may be working with several different faculty and staff members. The advisor also will be solicited for formal feedback as part of the twice-yearly evaluation of students.

Role of the student:
The student is responsible for working on the assigned project for a maximum of 20 hours a week during the academic year. It is understood that schedules fluctuate during different points in the year, such as when project demands are higher or when students are in an exam period. The advisor and student must work together to ensure that both academic and RA responsibilities are being met.

Duration of the appointment:
RAships typically last a minimum of 4.5 months (one academic semester) and are subject to renewal. Summer RAships are typically paired with either fall or spring semesters, and are also 20 hour/week commitments. Students are provided, on average, four weeks of paid
vacation during the calendar year – two weeks during the summer and
two weeks during the winter break. Students are required to discuss
winter and summer vacation plans with their RA advisor prior to
finalizing plans. In addition, students are not expected to work during
any of the official Brown holidays.

**Publications and academic freedoms:**
Although the RA’s role in generating manuscripts for publication may
vary by individual setting, it must be recognized that, consistent with
academic norms, those who contribute intellectual content must be
given appropriate credit. Contributing to a project as an RA as opposed
to as an investigator is not grounds to necessarily preclude authorship.
RAs who contribute meaningfully to a research project should be offered
the opportunity to participate as a coauthor in publications, even if the
RAship has been completed at the time the manuscript is being
prepared. RAs should notify and work with the RA advisor directly
should they wish to initiate preparation of a manuscript for publication
based on a project or data associated with the RAship.

**Special consideration for students engaged in dissertation work:**
Students engaged in PhD thesis research should, when possible, be
matched to an RAship that is closely related to their field of research, to
the point that some of their work as an RA may eventually result in a
first-author published manuscript.

**Awarding of industry-sponsored RAships and internships:**
Industry-sponsored RAships will be awarded to students based on
mutual agreement by the student, the sponsoring organization, and the
Graduate Program Director. The industry sponsor should submit a
description of the RAship to the Graduate Program Director for review
and approval before it is made available as a means of support.

The process of awarding industry RAships follows the same guidelines,
including timeline, publications, and terms of appointment, as the
awarding of other RAships. Sponsors of off campus RAs should factor
travel time into the student’s overall time commitment, and may be
expected to defray appropriate travel expenses.

**Tax Withholding Information**
Doctoral student support is in the form of various types of
appointments, including research assistantships, teaching
assistantships, fellowships, training grant appointments, and others, and these appointments can change from semester to semester. If you have a question about which type of appointment you have, please ask the Academic Program Coordinator.

For U.S. Residents, most of these appointments withhold taxes in the monthly paycheck. However, some that are denoted as fellowships are not subject to tax withholding (while taxes are not deducted monthly, they may be due at the end of the tax year.) For Non-US residents, the same tax rules apply unless you are covered by a Tax Treaty.

For more detailed information, please refer to the Graduate School, Payroll Office and this STUDENT EMPLOYEE FAQ. International students and non-resident aliens always refer to the OISSS.

Note: Tax filing varies by individual and the absence of tax withholding does not relieve the responsibility to file taxes. If you have further questions about tax withholding and your responsibilities, we recommend seeking advice from a tax professional. Brown faculty and staff cannot provide advice on taxes.
Specific guidelines for off campus RAships:
All RAships awarded to Epidemiology graduate students must be directly supervised by a full time Brown faculty member. When the supervisor is not a member of the Department, a faculty liaison, who is a Department faculty member, will be assigned to oversee the RAship broadly. In many cases this liaison can be the student’s academic advisor.

NOTE: Graduate School policy states that students may engage in paid training opportunities outside of research assistantship appointments that play important roles in preparing graduate students for careers both inside and outside of academe up to 12 hours per week. Additionally, the Graduate School recommends that students ideally avoid or minimize time spent on paid activities unrelated to their research assistantship appointments and that any student who wishes to exceed the twelve (12) hours per week limitation must seek the approval of the Graduate School. Importantly, regulations of outside agencies that provide funding to specific students, as well as those governing visas for international students, must be observed at all times.
Teaching Requirements

PhD students are required to develop experience and expertise in teaching. This is accomplished by: (a) serving as a Teaching Assistant in a course taught by departmental faculty for at least one semester, (b) completing the New Teaching Assistants Orientation conducted by The Harriet W. Sheridan Center for Teaching and Learning prior to the start of the Teaching Assistantship, and (c) completing a Teaching Experience (for credit). Students must be in good academic standing to be a TA.

A Teaching Assistantship (TAship) for doctoral students is 20 hours per week. It is typically fulfilled in the third or fourth semester, and replaces the RA-ship for that semester. Although specific responsibilities are at the discretion of the course instructor, typical TA roles include: grading and marking, holding office hours, developing midterms and finals, running tutorials or lab sessions, and facilitating class discussions.

The second Teaching Experience (TE) is done as a registered course, with a service expectation of up to 10 hours per week, and with no payment in addition to the student’s regular support. Although specific responsibilities are at the discretion of the course instructor, typical TE roles include delivering a guest lecture, contributing to lesson plans, participating in syllabus development, mentoring students, holding office hours, and other pedagogical activities.

TAs are identified through the following process:

1. We identify eligible courses for TAs, prioritizing (1) large course enrollment, and (2) core Epidemiology and Environmental Health courses. We typically have 3-4 available TAs per year.

2. Eligible TAs are asked to rank the courses they would prefer to TA.

3. Eligible course instructors are asked to rank the eligible TAs in terms of who would be best equipped to support the course.

4. We then perform a matching process of TAs to courses, emphasizing optimal fit for the TAs to the course topic areas and
instructors.

TEs are identified through an identical process as above, recognizing TEs are able to dedicate fewer hours per week than TAs (10 vs. 20 hours), and have greater responsibilities to developed their teaching experience, such as contributing to course/syllabus development, mentoring by instructor ion teaching techniques, along with opportunities for providing guest lecture(s) and grading.

Students are encouraged to participate in other teaching activities during their study at Brown, for example, by giving guest lectures during the semester in a departmental course. However, these activities cannot be used to fulfill the teaching requirement.

Although the program requires a minimum of one semester as a TA and one semester as a TE, students may serve more than one semester for each experience.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Obligation (max. hours per week)</th>
<th>Minimum Class Size†</th>
<th>Assignment Process</th>
<th>Typical Activities*</th>
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<tbody>
<tr>
<td>Teaching Assistant (TA)§</td>
<td>20</td>
<td>25</td>
<td>GPD appoints TAships with input from faculty, Academic Program Coordinator, and Department Chair</td>
<td>- Grading and marking</td>
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<td></td>
<td>(replaces RAship, usually in 2nd year)</td>
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<td>- Hold office hours</td>
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<td>- Develop midterms and finals</td>
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<td>- Run tutorials or lab sessions</td>
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<td>- Facilitate class discussions</td>
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<tr>
<td>Teaching Experience (TE)</td>
<td>10</td>
<td>10</td>
<td>GPD appoints TEs with input from faculty, Academic Program Coordinator, and Department Chair</td>
<td>- Deliver guest lecture(s)</td>
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<td>(for course credit, usually taken in 3rd or 4th year)</td>
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<td>- Contribute to lesson plans</td>
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<td>- Participate in syllabus development</td>
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<td>- Run tutorials or lab sessions</td>
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<tr>
<td>Supplemental Teaching Assignment (STA)</td>
<td>Varies (5-12); request in course budget $15/hr PhD; $13/hr Master's</td>
<td>N/A</td>
<td>Faculty request STAs during course budget process. Review by BUSPH administration. Assignments approved by GPD</td>
<td>- Grading and marking</td>
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<td>- Facilitate class discussions</td>
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Below are some resources the Sheridan Center offers TAs.

**New TA Orientation to Teaching at Brown**

In conjunction with the Graduate School, the Sheridan Center offers an orientation for first-time Teaching Assistants. Designed to complement departmental TA training, the orientation features:

- an introduction to TA’ing at Brown by the Dean of the Graduate School,
- a panel discussion with experienced TAs
- hands-on, interactive workshops on inclusive teaching for the first days of class
- breakout sessions on writing, problem-solving, and grading

2. In conjunction with these orientations, the Center offers a certificate and workshop series addressing instructional strategies and preparing for the academic job market. See the Sheridan Center calendar for this year’s dates and topics.

3. They also have learning and teaching resources on their website.

[https://www.brown.edu/about/administration/sheridan-center/teaching-learning](https://www.brown.edu/about/administration/sheridan-center/teaching-learning)
English Proficiency Requirement
Students whose native language is not English must be evaluated and certified for English proficiency before serving as a Teaching Assistant. English language assessments are done by appointment only at the Center for Language Studies. Students should contact the Center Manager, at the Center for Language Studies early to make an appointment. This office handles the confirmation of English proficiency which is required within the first year of graduate studies. If a student's command of spoken English does not meet this proficiency, the student must enroll in the appropriate ESL course(s) recommended.

Sheridan Center New Teaching Assistants Orientation
In conjunction with the Graduate School, the Sheridan Center offers an orientation for first-time Teaching Assistants. Designed to complement departmental TA training, the orientation introduces new TAs to the Brown curriculum and to teaching resources available on campus, and provides participants with the opportunity to discuss their roles and responsibilities as TAs with experienced TAs and with faculty. Students may choose from 1 of 3 workshops (pending availability):

- *Teaching for the First Time at Brown*: This workshop provides new instructors with strategies for effective teaching. During the workshop, participants learn about planning classes, engaging students in the classroom, approaches for gauging what their students are learning, and using student feedback to become more effective instructors.
- *Interactive Classrooms*: This workshop introduces activities that increase student learning and engagement. New instructors will discuss and get firsthand experience with several effective strategies that promote active learning in classrooms of any size and discuss the challenges of engaging students in the classroom.
- *Grading Strategies*: This workshop introduces strategies to help new instructors grade effectively and efficiently. Participants will brainstorm approaches for establishing grading criteria within their disciplines and discuss the role of grading in student learning.

Students should register as soon as their TA assignment is made by the Graduate Program Director, as workshops fill up quickly.
Sheridan Center Certificate Programs

The Sheridan Center also offers five year-long certificate programs in which participants develop and reflect on their teaching and mentoring practice and prepare for professional careers. These programs are not required but are an option available to interested students.

For more information, including dates, times, and how to register for Teaching Assistant Orientation or Certificate Programs, please visit:

http://www.brown.edu/Administration/Sheridan_Center/

Grant Writing Requirement

Over their first summer, students are expected to devote 20 hours per week to their RAship, and 15-20 hours per week to developing their dissertation project and developing specific aims for an external fellowship or grant. Using skills they learn in PHP 2090, which they take during the 3rd semester, students are expected to continue grant writing, with the goal of submitting a grant application at the end of the third semester, or during the fourth semester (depending on deadlines for differing submission opportunities).

Dissertation Defense Requirements, Guidelines, and Timeline

Students are expected to defend their thesis after 8-10 semesters in the doctoral program. Here is what you need to know to plan your dissertation defense and navigate your degree completion with the department, the Graduate School, and the Registrar’s Office:

- If you plan to defend during the Fall Semester, you must complete all required paperwork with the Graduate School before the first day of the Spring Semester in order to avoid being charged for Semester II. The Graduate School may grant a 30-day courtesy extension for you to complete all paperwork. If you think you might require this extra time, please contact the Academic Program Coordinator.
- To graduate in May, you must defend and complete all required paperwork with the Graduate School by May 1. The Graduate School may grant a 2-week courtesy extension until May 15 for you to complete all paperwork. Please contact the Academic
Program Coordinator to request this extension by April 15, if you anticipate that an extension may be necessary.

- Students must meet with Academic Program Coordinator in the beginning of the semester of defending to schedule a room and time.

**Before your defense (at least 3-4 weeks prior):**

- Visit the Graduate School’s [Dissertation Guidelines](#) page for all of the information you will need to complete the process. You will find links to the EDT system as well as guidelines and samples of relevant documents there.

- Coordinate with your committee to arrange possible dates/times for your defense.

- Complete the Dissertation Defense Information Form (located in the appendix of your handbook) and submit to the Academic Program Coordinator. Submitting this form two weeks prior to your scheduled defense will allow enough time for processing your paperwork before your defense.

**The day of your defense:**

- Bring at least four copies of the required [Thesis Signature Pages](#) to your defense in order to get the requisite signatures while your committee is gathered together. This will ultimately make your completion easier by eliminating the need to gather individual signatures later. Candidates who want an original signature page signed by the Dean of the Graduate School must include a fourth signature page.

- The Academic Program Coordinator will bring the Graduate School generated paperwork to the defense. There is a second necessary form for your committee to sign called the “Votes for Recommending Form” or “Aye/Nay”. Have your committee sign this form and the Thesis Signature Pages and return to the Academic Program Coordinator at the completion of your defense. These forms need to be signed and added to your file, before being sent to the Graduate School.

**Following your defense** — three very important things to do (before start of Semester II for Fall completion OR May 1 for Spring completion):

- Complete all checklist items referenced on the [Graduate School’s website](#) (#1-5 under Submission of the Final Copy). Contact Barbara Bennett at the Graduate School to determine if all steps have been completed so that she can clear you for completion.

- Return your department laptop and submit a completed
Epidemiology Exit Survey to the Academic Program Coordinator.

- Your Brown electronic services will continue until August. Check out the email forwarding and other services available to you through the Brown Alumni Association.

**Commencement:**
Anyone planning to receive a degree in May must, by May 1:

- Complete the Application to Graduate (available in mid-January) found in Banner Web.
- Register with the Graduate School for Commencement (even if not planning to attend).
- Order regalia through the Brown Bookstore (if planning to attend).

To find links to the above tasks as well as all of the information you need about Commencement, please visit both the Graduate School’s Commencement page and the University's Commencement page, paying particular attention to the For Graduate Students section.

**Other Resources:**
The Thesis Binding Service offered through the Brown University Library.
Seminars, Clubs, and Forums

One of the Program’s priorities is that graduate students become proficient in the written and oral communication of scientific thinking. One strategy for the support and development of communication skills is the participation in the Epidemiology Seminar Series, and the Department of Epidemiology’s Journal Club and Faculty Forum.

Journal Club Objectives
The objective of the Journal Club is to provide students with a regular, peer-led, semi-structured discussion forum in which they:

- Critically appraise empirical, methodological, or theoretical papers in their field
- Improve oral presentation skills through giving presentations and scholarly debate about topics in a more casual and comfortable setting
- Network with peers, Brown faculty members, and outside speakers

Meeting Schedule:
- Journal Club meetings for the Doctoral and Master’s Programs in Epidemiology occur once per month on Tuesdays from 12:00-1:00 pm, with the exception of during months when there is a Faculty Forum. During the months when there is a Faculty Forum, Journal Club will meet twice in the same month.
- Journal Club meetings take place at 121 South Main St. in room 375

Instructor of Record:
- Every departmental journal club will have an Instructor of Record and is required to notify the Associate Dean and Academic Program Manager of the Instructor’s name prior to pre-registration.
- Primary responsibilities include: attending a meeting prior to the start of the semester with the Graduate Program Director and Student Journal Club Director(s) to review guidelines; attending the first journal club of each semester to review guidelines with doctoral and master’s students; reviewing journal club attendance; assisting in selection of articles upon
request; attending additional Journal Club meetings upon request.

- The instructor of record will be assigned a section under PHP2950 and will be responsible for assigning a grade of Pass or Fail for the Student Journal Club Director(s) registered in their section of PHP2950.
- In the beginning of each semester, the Instructor of Record or the Academic Program Coordinator will contact the Seminar Series Director to obtain the names and dates of the seminar series speakers for that semester to facilitate seminar series speakers participating in journal club during that semester.

**Attendance Policy:**
- Every doctoral student in the School of Public Health is required to attend Journal Club each semester while enrolled in the program unless exempted by the Graduate Program Director.
- Every doctoral student is required to be a discussion facilitator at least once during the academic year.
- Department of Epidemiology Master’s students are required to attend Journal Club each semester while enrolled in the program unless exempted by the Master’s Program Director.
- Every Master’s student is required to be a discussion facilitator at least once during their time in the ScM program, preferably in their second year of the program to allow for their mastery of Epidemiology content to be more advanced.
- The Graduate Program Director and the Master’s Program Director should notify the Instructor of Record, in writing, of any exemptions being granted each semester.
- Copies of exemptions are to be filed in the student’s e-record (Please ask for a waiver form).
- The Academic Program Coordinator will email the Instructor of Record and the Graduate Program Director if a student has missed two consecutive Journal Club sessions in a given semester. The Graduate Program Director will email the student regarding the missed Journal Club sessions.

**Responsibilities**

**Journal Club Student Director(s):**

All doctoral students must serve as Journal Club Director for one full semester, typically during their 2nd or 3rd year. Students may serve as
co-directors depending on cohort size. Doctoral students should register for Journal Club course credit (PHP2950) during the semester when they will act as the Journal Club Student Director(s). Student directors are responsible for:

- Coordinating/assigning student discussion facilitators for each journal club session (including sending reminders; circulating papers in advance).
- Maintaining the semester Journal Club schedule (see below table).
- Organizing one faculty forum per semester, which includes a Brown faculty member discussing their career path and research.
- Recording attendance for the Instructor of Record.
- Ordering food, as needed, with the assistance of the Academic Program Coordinator.
- Administering and summarizing a student evaluation via a survey of the overall course.
- Assist the Student Discussion Facilitators during the breakout groups (see below) by joining a breakout group that the Student Discussion Facilitators are not participating in, when possible, and facilitating discussion as needed and helping to ensure balance of discussion by PhD and ScM students in the breakout group.
- Sending the article (published or draft, as appropriate), discussion questions, and presentation slides to the students one week before the relevant Journal Club date.
- Ensure that the guest speaker, if there is one, as well as the faculty representative(s) are introduced.

Student Discussion Facilitators must:

- Identify an article or project in-progress for their session with a broad topic area or a historical article during the journal club sessions where a guest speaker doesn’t select an article. Historical articles should be seminal papers that considerably impacted the field. The selected article/project should not be a systematic review or a meta-analysis.
- Come up with 2-3 questions as a starting place for discussing the article/project.
- Send the selected article/project to the Instructor of Record for their approval at least two weeks before their Journal Club date.
• Send the article/project that was approved by the Instructor of Record and the questions to the Student Journal Club Director(s) at least 10 days before their Journal Club date.

• Lead the journal club discussion in breakout groups, preferably no greater than 10 students per group. The student discussion facilitators should join separate breakout groups and be prepared to lead the discussion in the breakout group that they join which includes helping to ensure balance of discussion by PhD and ScM students.

Additional Department Specific Guidelines:

• During a week when a seminar speaker is visiting, the goal is that an article selected by that speaker will be discussed. The Student Discussion Facilitators are responsible for contacting the Academic Program Coordinator for help with contacting the seminar speaker to obtain a suggestion for what article(s) should be discussed.

• Student Discussion Facilitators should introduce the paper and the guest seminar speaker if relevant. The Student Discussion Facilitators should introduce the paper by giving a presentation of no more than 5-mins at the start of journal club that highlights the paper objective(s), methods, results, and conclusions using no more than 3-4 slides. During a given journal club, the Student Discussion Facilitators should be one doctoral student and one second year ScM student. The Student Discussion Facilitators should send the slides to the Student Journal Club Director(s) at least 10 days before their Journal Club date.

• Faculty representatives are responsible for ensuring that discussion remains thoughtful, friendly, and supportive throughout the duration of the journal club session. Faculty members should plan to drift between the breakout groups of students as needed. The Student Discussion Facilitators should make sure that the Faculty representatives introduce themselves prior to discussing the selected article/project.

• Students attending the journal who are not the Student Director(s) or Student Facilitator(s) should come to journal club with 2-3 questions and be prepared to share those questions during the breakout group discussion.

• We strongly encourage a diversity of topics over the school year.
All students tend to share commonalities in being interested in Epidemiology methods training. Considering interesting methodological approaches across a diversity of applied areas (e.g. cardiovascular epidemiology, perinatal epidemiology, infectious disease epidemiology, social epidemiology, etc.) can allow for fostering training in areas of common interest, while enabling diversity of applications to the field of Epidemiology.

**Faculty Forum**
- A faculty forum is an opportunity for students to ask open-ended questions for the faculty member in an informal, single group setting. The faculty member must be Brown affiliated.
- There will be no paper discussed during the faculty forum.
- There will be no Student Discussion Facilitators during the faculty forums. The Student Director(s) will help facilitate the discussion and introduce the faculty member.

**Guest Seminar Speaker Guidelines:**
- When a guest seminar speaker attends Journal Club, the format will be to invite the speaker to start out with about 10 minutes of informally discussing their career path, such as how they got to where they are now, including questions from students about their career steps. This 10 minute discussion will occur as a single group. The subsequent 35 minutes will be focused on the paper presentation and breakout group discussion of the paper. During the breakout group discussion, the Student Discussion Facilitators should inform the guest speaker that they can either join a single breakout group or drift between the various breakout groups depending on which approach that they prefer. If a guest speaker prefers, it is fine to focus on the science of the paper only, and not on their career path.
- Before any speaker is added to the journal club schedule, the addition must be approved by the Instructor of Record.
- No more than half of the non-faculty forum journal club sessions should have a guest speaker and journal club sessions with guest speakers should not be back to back on the schedule.
4. General Graduate School Guidelines

The Brown University Graduate School has several University-wide requirements of all students enrolled in graduate programs at Brown. These guidelines and regulations apply to all students in the Public Health Graduate Programs, and both students and advisors are expected to become familiar with them. They can be accessed on-line at:

http://www.brown.edu/academics/gradschool/graduate-school-handbook

Academic Advising Structure

At the time of admission into the program, each student is assigned an academic faculty advisor. During the first two years of study, the academic advisor assists the student in planning for meeting degree requirements and objectives, and to assist in the process of course selection. The advisor is expected to be familiar with the student’s academic background, particularly with respect to previous graduate coursework. The assignment of an academic advisor is made by the Graduate Program Director.

The process of selecting a dissertation advisor takes place after the first two years, once a student has passed the written qualifying exams. The academic advisor and research mentor serve during the first two years, while the dissertation advisor oversees the student’s thesis research. Either the academic advisor or the initial research mentor may eventually serve in the role of dissertation advisor, but this is not always the case. The process of selecting a dissertation advisor is initiated by the student, and is described further below.

Students should plan to meet with their academic advisor at least two to three times per semester. In the initial meetings with the academic advisor, students should try to plan a curricular program for up to two years. It is not necessary that this initial plan be adhered to throughout the two year period, but it gives a rough outline of courses to be taken and milestones to be met.

The advising relationship is an important one, and students should be comfortable with their advisor. It is understood that in some cases an individual student may wish to change academic advisors. This can be
done any time by request to the Graduate Program Director. It is expected that if any problems or conflicts arise, students will discuss these first with their academic advisor, but may also contact the Graduate Program Director.

**Selecting a Dissertation Chair/Advisor**

Students enrolled in the PhD program must pass their written examination prior to selecting a dissertation chair and committee and progressing to the oral examination. However, we encourage students to learn about the research interests of various faculty members to gather information about prospective advisors well in advance of completion of the written exams.

Any member of the graduate faculty with an appointment in the Department of Epidemiology may serve as a doctoral dissertation advisor. A listing of graduate faculty may be found at the following link:

http://brown.edu/academics/public-health/epidemiology/faculty

We recommend the following guidelines when selecting a dissertation advisor:

1. Ask someone who has experience in the area you are interested in studying
2. Ask someone who is able to make a commitment to be your mentor. Clarify expectations from the beginning with this person in terms of time and substance. Students who have established ongoing relationships with their advisors as Research and/or Teaching Assistants may have more opportunity for mentoring. Your initial academic advisor may assist you in the process of doctoral advisor selection.

Your advisor provides ongoing supervision and consultation for the conceptualization, design, conduct, analysis and interpretation of the research project. Most advisors will engage you in scientific activities beyond your thesis, for example, presenting talks at university seminars and scientific meetings, assisting with manuscript reviews, and collaborating on other research projects.

Students in the doctoral program are required to successfully complete the written qualifying examination and the oral qualifying examination that is conducted in conjunction with the presentation and approval of
their thesis proposal. Eligibility for writing a doctoral thesis (or, entering “candidacy”) is based on successfully completing a written examination and oral examination.

Composition, Selection and Function of the Dissertation Committee
Students should begin the process of selecting members for the dissertation committee as soon as the written qualifying exams have been successfully completed, or sooner. The minimum size of a doctoral committee is three faculty members. More members may be preferable to have a balance of expertise representing substantive and methodological aspects of the thesis plan. On the other hand, more than four members may become administratively complicated and challenging for the student who may feel compelled to respond to differing advice.

The committee must include two graduate faculty members from the student’s degree program. The third member can be affiliated with another department but must be a Brown faculty member. Depending on the needs of the thesis research, it is often necessary or advisable to include a faculty member from the Department of Biostatistics. Additional committee members from other institutions may also be included. Final composition of the committee must be communicated to the Graduate Program Directors and approved before the oral examination of your thesis proposal (see Dissertation Committee Confirmation Form in Appendix). Students should discuss selection of committee members with their advisor.

Although interactions with committee members will vary considerably by individual, the minimal expectation of the committee is to evaluate and provide feedback at regular intervals during the preparation of the dissertation. Thesis committee meetings should be scheduled on a regular basis (at least once per semester).

Once you have come up with a list of potential committee members, contact each one to inquire into their willingness to be on your committee. In some cases, your advisor may be in the best position to make the request of some faculty members. If the potential committee member is interested, set up a time to discuss expectations and their role as a committee member. Inform each faculty member of the desired composition of your committee, and ask for referrals to other potential members if you feel that you do not have enough expertise represented.
The dissertation committee must be approved by the Graduate Program Director(s) before membership is finalized. **Students should submit the Dissertation Committee Confirmation Form to the Graduate Program Director listing the names and department affiliation of each member.**

**Outside Reader(s)**
Our graduate programs strongly encourage each student to identify an outside reader for the dissertation. The outside reader is typically selected at the same time as the dissertation committee, and the selection should be done in consultation with your advisor. An outside reader is someone external to Brown who has recognized expertise in the topic of your research. Frequently the reader will be a colleague of the dissertation advisor and/or one or more committee members.

Officially, the outside reader will function as a consultant to the dissertation committee, providing periodic feedback on the student’s progress and offering suggestions for revision of manuscripts and/or proposals. The outside reader will also be asked to offer an opinion about the quality of scholarship evident in the thesis as it develops. In some instances, there may be separate outside readers for different aspects of the dissertation, who review a subset of the thesis papers. Importantly, the outside reader does not vote on the final acceptance of the thesis and will not provide direct official feedback regarding student progress. The committee will serve as an arbiter of the reader’s suggestions and use the reader’s feedback at its own discretion.

**Oral Qualifying Exam (Thesis Proposal)**
The oral examination should be completed six to nine months from the time of a successful written examination. **Complete the Oral Exam Date Request Form (see appendix) and submit to the Graduate Program Director.** The chair of the oral examination will typically NOT be the Dissertation Chair. The goal of this part of the qualifying examination is to determine how well the student can define important scientific questions and devise creative and innovative approaches to answer them. The oral exam consists of two parts:

1. **Written proposal.** The proposal should be delivered to members of the dissertation committee two to three weeks prior to the date of the oral exam. The body of the proposal (excluding references, figures,
etc.) should be about 30 double spaced pages. The proposal should roughly follow the style of an NIH grant proposal, according to the following outline:

a. Summary of the proposal that includes the specific aims of the work to be done (1-2 pages).

b. Background and literature review. Describe the previous work done in the field that leads up to the scientific problem you are addressing. Raise questions about or indicate gaps in existing work that your dissertation will address. This step is crucial to establishing that your work will be original and innovative (5-7 pages).

c. Preliminary studies. Describe what work you have done, if any, that supports the proposed project (4-5 pages).

d. Proposed work (~15 pages). This section is the most important of your proposal and probably should be longer than each of the other three. It should describe the proposed work and give an outline for the three thesis papers. It is expected that the outline and preliminary work for the first and possibly second paper will be more developed than for the third. Essentially this section needs to answer the questions: What do you plan to do? Why is it important? How do you plan to do it? What are the expected pitfalls and how might you approach them? If successful, where will your work lead in the future?

2. Oral Examination. For the oral exam the student must prepare an oral presentation of the proposed work, using slides as necessary. The oral examination will be attended by the thesis committee. The exam will be chaired by a committee member other than the dissertation advisor. The defense begins with an oral presentation of about 30 minutes. Committee members will then direct questions to the candidate. The questioning process can take up to 90 minutes. Students should be sure to practice the presentation beforehand so that it does not exceed the 30 minute allotment. Most importantly, students should realize that the committee has read the proposal, and try to focus on the research plan and its importance, rather than reiterating the background material. Feedback from the oral exam can be very helpful for developing the thesis project.

Evaluation. The chair of the oral exam will summarize the discussion and the outcome of the exam in the Oral Exam
Results Form (see appendix) which should be provided to the chair by the student prior to the exam date. A formal letter to student is encouraged to be written by a member of the thesis committee (usually the oral exam chair or the thesis advisor) and reviewed and agreed upon by all committee members. This letter should highlight strengths of the knowledge displayed by the student during the oral exam, along with opportunities for deepening knowledge in the coming years. This will support the student in developing in as strong a way as possible for a successful thesis, and next career steps upon completion of the thesis and PhD program. The evaluation results are the same as for the written exam: high pass, full pass, conditional pass and no pass. Those earning pass with high pass or full pass are admitted to PhD candidacy. Those earning conditional pass may either be asked to re-take the oral exam or to address significant deficiencies in the proposal. In this case, the committee must agree that any shortcomings have been adequately addressed before the student is admitted to candidacy. A ‘no pass’ means the student may be directed to re-take the oral exam altogether, or may be declined candidacy to the PhD degree.

Upon becoming a PhD candidate, the student must plan twice-yearly meetings with the committee to review progress with members.
Dissertation Defense
Upon completing the proposed research, students schedule a public presentation and defense of their dissertation through the department Academic Program Coordinator and following procedures stipulated by the Graduate School. The following website also provides instructions for preparing and presenting the PhD dissertation:

http://www.brown.edu/academics/gradschool/dissertation-guidelines

Students should contact the Graduate School for clarification of any instructions and to let them know of the preparation to defend.

Agreement by all committee members and the Graduate Program Director to schedule the thesis defense is obviously a strong predictor of approval of the doctoral thesis. However, the final approval of the thesis is made after the student’s presentation.

At least three to four weeks in advance of the defense, the student must fill out the Dissertation Defense Information Form (see appendix) and provide the department’s Academic Program Coordinator the title of the dissertation talk and arrange a date and location for the defense. The student must also contact the Graduate School to make an appointment for submission of the complete dissertation. In addition, the Graduate School needs to have the following:

1. A copy of the title page, bearing the notation "approval of semi-final version" (typed or handwritten somewhere on the title page) and the signature of the advisor
2. Names of readers and their addresses if they are not at Brown
3. Date, time and place of the defense
4. Student mailing address and telephone number
5. Previous degrees and dates of receipt
6. Date of preliminary examination (written and oral)
Committee members should receive the penultimate draft of the thesis sufficiently far in advance of the scheduled defense to allow for reading and preparation of questions; two to three weeks is recommended.

At the conclusion of the presentation, the thesis committee will meet in private to make a final determination of the acceptability of the thesis and discuss any changes for the final version.

**Submission of completed dissertation to the Graduate School:**
The University Graduate School requires all PhD dissertations to be completed toward the end of April for a May graduation. *Students who do not hand in their final thesis on time cannot participate in the University’s graduation exercises.* The Graduate School has compiled instructions to help graduate students with the preparation and presentation of the dissertation. These instructions are located at the following website:

http://www.brown.edu/academics/gradschool/dissertation-guidelines

When the thesis is presented to the Graduate School, it must be in final form. It may not be revised in any way after it is submitted.

**NOTE:** In addition to providing the Graduate School with the required number of copies of the PhD dissertation, the student must also provide the Department of Epidemiology and each committee member both a printed and electronic copy of the dissertation. These copies should be submitted to the Academic Program Coordinator.
PhD Milestones Guide

The following summarizes the formal “milestones” required of all PhD students and the timeline by when these are to be completed in order to maintain a status of “good standing” within the program (see page 47 for academic standing information).

By the end of semester 2:
Complete 1st year coursework Serve as a RA

By the end of 1st summer:
Complete Summer RAship
Work on grant proposal for PHP2090 (Research Grant Writing for Public Health)

Semesters 3 and 4:
Continue to serve as a RA Serve as TA
Begin process of selecting research topic and dissertation advisor
Submit external fellowship application for dissertation research

By the end of semester 4:
Complete 2nd year coursework
Complete Epidemiology Written Qualifying Exam
Continue to serve RA

Semester 5:
Finalize research topic and appoint dissertation committee members
Complete PhD prospectus and oral qualifying exam
Finish any remaining course requirements
Serve as TE
Continue to serve as RA

Semester 6:
Continue to serve as RA

Beginning of semester 8:
Schedule thesis defense
Continue to serve as RA
End of semester 8:
Complete thesis defense & graduate
Continue to serve as RA
5. Other Useful Departmental Information

Grading Policy

The Department of Epidemiology expects all students in the Master and Doctoral degree programs to maintain a “B” average or better for the academic year. If a student’s performance is poor enough (i.e., drops below a “B” average for the year), s/he may be asked to engage in remedial activities (e.g., additional coursework). Students who do not maintain good academic standing may be asked to leave the program.

Student Academic Standing Evaluations

Students’ academic standing (good, satisfactory, or warning) is evaluated two times per year, at the end of the fall semester, and at the end of the summer. Student evaluations are completed with input from all graduate program faculty (teaching faculty, RA or TA supervisors, academic advisors). The purpose is to provide consolidated feedback to students about their performance and progress in the program. If the determination is made that a student is not making satisfactory progress, prospects for future financial support could be adversely affected and/or student enrollment in the program may be terminated.

Students’ advisors will discuss the evaluation in greater detail and will be able to provide additional information. Topics relevant for the evaluation can include (though are not limited to) status in academic courses, performance on the qualifying exams, progress towards the thesis, performance as a teaching assistant and research assistant, priorities for the coming year to facilitate progress towards completing the degree, and becoming an independent investigator and current and possible financial support.

The program expects that students and advisors meet once per month or at the very least twice per semester to discuss the student’s progress. This should occur in the context of course selection and subsequently to review the results of the annual evaluation. Semi-annual meetings are
not intended to substitute for regular contact and students are encouraged to take the initiative to schedule appointments with advisors on a recurring basis.
**Individual Development Plan (IDP)**

The IDP is a valuable tool that gives students the opportunity to address their short term and long term career goals. The NIH has mandated that IDPs be a regular part of training and that institutions encourage trainees to comply with this mandate. In addition, the School of Public Health is requiring all students, regardless of funding, to fill out an IDP.

The Department of Epidemiology requires that students complete an IDP each calendar year. The deadline for submission of the Individual Development Plan Google Form is December 1st. Before submitting your IDP, please review responses with your academic advisor. In addition to NIH reporting requirements, the Department views the IDP as an important opportunity to review progress with your advisor, set academic and research goals for the coming year, and update your academic CV.

**Service Expectation**

Students are expected to participate in department and school wide activities which include representation on committees, attending student orientation and recruitment events, research forums and faculty recruitment. Meeting these expectations require students to be on campus, at least for a portion of their program.

**Student Space and Resources**

**Office Space and Workspaces**
The Epidemiology Department makes every effort to ensure that all graduate students are provided with adequate office space. The Department provides incoming students with office space that has an individual desk. Students who have placements off campus, but who request additional space at 121 S. Main St., will be able to use a common office or will be accommodated as space allows. Students will be contacted with their room locations at the beginning of the academic year.

There are several workspace areas with computer clusters for graduate student use: Room 243 for master’s students, and Room 242 for 1st year PhD students. Student mailboxes, as well as printer and internet access are available in the computer labs and the third floor student areas.
Wireless internet is accessible throughout the building.

**Locker Policy**
Lockers are available to all Master’s students in the School of Public Health. However, lockers are limited to 50 students and are available during the academic year, starting the first day of classes in September and expiring on May 31. Please see the Academic Program Coordinator for a locker application form. This form is due on the first day of classes. All students who submit this form will be entered into a locker lottery and notified the second week of classes regarding their locker assignment. Users must provide their own locks, but should be aware that we reserve the right to remove the lock in extenuating circumstances. Any locks remaining on June 1 will be removed and the contents of the locker disposed of.

The lockers are Brown University property, and should be treated as such. You are expected to follow all applicable university acceptable use guidelines. It is important for you to behave in a responsible, ethical, and legal manner. Lockers should not be defaced in any way. They should be kept reasonably clean, sticker free, odor free, and contents should not affect others.

**Laptop Computers**
The Program in Public Health will provide each incoming doctoral student his/her own new laptop computer for use while enrolled in the doctoral program. The laptop will be set up and maintained by the Public Health Systems Administrator. While the program will fund the initial laptop purchase, each student will be responsible for any needed repairs, replacement parts, upgrades, etc. which are not covered by the warranty. As different components of the laptop are subject to different warranty periods, students should always check with the Public Health IT Systems Administrator for any possible component warranty before making a purchase or requesting repair. Graduate programs and/or RA supervisors may elect to assist students with needed repair costs, but that is determined individually by each program/RA supervisor. The Program will provide a temporary “loaner” machine for a student’s use in the event that his/her laptop must be sent out for repair (regardless of the funding source for the repair). There is now insurance coverage on the first and second year laptops. Please see Mike Gallino for more information.
Laptops are the property of Brown University; therefore, when a student graduates or leaves the program for any reason, the laptop must be returned to the Public Health Program. Per University Policy, “Departments are strictly prohibited from gifting or selling surplus materials directly to Brown faculty, staff, students, and other individuals. This provision is mandated in order to minimize the University’s risk exposure to product liability, sales tax exemption regulations, potential loss of commercial discounts, and potential violations of special pricing structures if deemed a reseller.”

**Travel Fund Opportunities**

Below please find listed conference funding opportunities. Application forms can be found in the Appendix.

**Graduate Conference Travel Fund**
After travel is completed, graduate students must submit appropriate documentation [as explained on the Graduate School’s Conference Travel Reimbursement webpage] to their home program’s administrative coordinator for approval and electronic processing of the reimbursement request. If the documents submitted do not correspond to those guidelines, reimbursement requests will be returned for completion. Completed travel reimbursement requests should be submitted to the home program no later than 30 days after completion of travel; those submitted after 45 days will not be reimbursed.

**School of Public Health Conference Travel Fund**
Doctoral students, who present original work at academic conferences, can request support from both the Graduate School (see above instructions) and the School of Public Health. The School of Public Health will provide up to $400 to cover related travel expenses not covered by the Graduate School. Students are eligible to receive these funds one time, at any time during their doctoral training period. Given funding limitations, application does not guarantee support. When requesting both Graduate School and School of Public Health support, doctoral students must: • Complete the Graduate School’s Conference travel funding application. Where instructed, “Please indicate any other funding you expect to receive for this trip,” the student should write “School of Public Health” and the $ amount (up to $400) being requested of the School. • Attach necessary forms as explained on the
application form. • Sign the application and obtain approvals from the Director of Graduate Program. • Save completed application form in PDF format. • Submit the application via e-mail to graduate-travel@brown.edu and Carla Colbert (Carla_Colbert@brown.edu) for approval.

**Joukowsky Summer Research Award**
The Joukowsky Summer Research Award Program was developed by the Graduate School in 2012 to provide additional funding for scholarly activities outside of Brown during the summer months. Students conducting research or traveling for other academic purposes during the summer months may be eligible for this award. Academic purposes could include attending language programs, summer workshops, or other activities. Doctoral students applying for summer research after the first through fifth years of study are eligible for the awards. Detailed information on the Joukowsky Summer Research Award Program is in the Graduate School Handbook. Note: You do not need to seek a Graduate School signature for the form; if your request is approved, that signature will be added and a copy will be returned to you.

**International Travel Fund**
The International Travel Fund provides funding for graduate student conference presentations and research studies abroad. Awards range from $200 to $1,000. Funding decisions are based on the distance of the international conference from the continental United States, the budget requested, and the availability of funding at the time the request is received by the Graduate School. Only one award will be made per student within an award cycle (September-August). These awards may be used in combination with other Graduate School travel awards, but are treated as funding internal to the Graduate School and therefore do not satisfy external award matching requirements that other travel awards may require. Master’s students and doctoral students in years 1 through 5 of their studies are automatically eligible to apply for the international travel fund award.

Doctoral students in the sixth year are also eligible but are required to have a letter of support from the Director of Graduate Studies of the home program, in addition to the international travel fund application.

**Note:** Volunteering at some conferences may waive the registration fee.
**Student Leave Policy**
During the course of graduate study a student may need to request a leave of absence. Applications for leaves of absence (with the exception of medical or psychological leaves) should be sent to the Graduate School at least four weeks before the start of the semester in which the leave is to be taken.

The Graduate School now offers a Parental Leave Policy which is designed to partially ameliorate the academic and professional demands on graduate student parents who are primary caregivers of newly born or adopted children.

The Graduate School provides support at the rate of the standard base stipend for the duration of the relief period. Health insurance, health service fee coverage, and dental insurance for the student are maintained.

**Faculty List**
For a complete list of current faculty, including their areas of research, please visit our website.
6. Appendix

Course Descriptions

PhD Program Progression Checklist ScM Program

Progression Checklist ScM Thesis Timeline

ScM Thesis Proposal Form Course Waiver Request Form

Journal Club Waiver Request Form

Graduate Conference Travel Fund Application

School of Public Health Conference Travel Fund Application

Joukowsky Summer Research Award Application

International Travel Fund Application

Oral Exam Date Request Form Oral Exam Results Form

Dissertation Committee Confirmation Form Dissertation

Defense Information Form
Course Descriptions*

PHP 1700 – Current Topics in Environmental Health
This course is designed to introduce students to the field of environmental health, and demonstrate how environmental health is integrated into various aspects of our lives, both directly and indirectly. Topics to be covered include: toxic metals, vector-borne disease, food safety, water quality, radiation, pesticides, air quality, hazardous waste, risk assessment, and the role of the community in environmental health. Several topics will be presented by guest speakers so that students can learn from the expertise of professionals in the field.

PHP 1854 - The Epidemiology and Control of Infectious Diseases
Course objectives are to introduce students to key methods and concepts in the epidemiological study and control of infectious diseases. By the end of this course, students will have a solid foundation in the distribution, transmission, and pathogenesis of major infectious diseases that affect human populations. We will investigate methods to design and evaluate public health strategies to prevent or eliminate infectious diseases, including: outbreak investigation, disease surveillance, infection control, screening, and vaccination. The course is open to undergraduate students who have completed PHP0320 and to graduate students who have completed or are concurrently enrolled in either PHP2120 or PHP2150.

PHP1880 - Meditation, Mindfulness, and Health
This course provides an overview on the relation of meditation and mindfulness (the ability to attend in a nonjudgmental way to one’s own physical and mental processes during ordinary, everyday tasks) with various health outcomes and disease risk factors such as depression, anxiety, diet, substance use, and cardiovascular disease. Mechanisms by which mindfulness may influence health will be addressed. The course will assess studies in the field for methodological rigor, and students will be taught strengths and weaknesses of current research. Students will be taught various mindfulness practices including direct experience with mindfulness meditation.

PHP 1900 – Epidemiology of Disorders and Diseases of Childhood and Young Adulthood
The study of people making music. Ethnographic research and writing on musical practices; history of ethnomusicology;
musical case studies from around the world highlighting such issues as authenticity, tradition, commercialism, amateurism, postcolonial politics, and the ethics of fieldwork.

**PHP 1920 – Social Determinants of Health**
The course provides an overview of social determinants of health. Examples of topics include health effects of educational attainment, social integration, neighborhood socioeconomic characteristics, racial discrimination, gender, income inequality, childhood socioeconomic circumstances, parental neglect, and job strain. Mixed teaching methods are used, including small group discussions, problem-based learning and guest lectures.
PHP 1960 – Epidemiology of Chronic Disease
This course is aimed at providing students with an introduction to the epidemiology of chronic disease. The topics in this course will review major chronic diseases; review descriptive data on population differences and time trends in incidence, prevalence and mortality; summarize mechanisms of pathogenesis; discuss major risk factors and address methodological issues in establishing causality; address potential opportunities for disease prevention and control. Students will be expected to present a selected topic on a current topic, providing opportunities to discuss cutting-edge research areas in the field.

PHP 1964 – Cancer Epidemiology and Prevention
This course is aimed at providing students with an introduction to cancer epidemiology. The topics in this course will review cancer risk factors; discuss descriptive data on cancer rates; address methodological issues and limitations in assessing causality; discuss potential opportunities for primary and secondary cancer prevention. Students will be expected to present a selected topic on a current topic in cancer, providing opportunities to discuss cutting-edge research areas in the field. The first class of the week will include a review of the topic for that week and the second class will be presentations by students on selected current topics.

PHP 2018 – The Epidemiology of Cardio-Metabolic Health
This course surveys the entire landscape of the nutritional, biochemical, and genetic aspects of cardiometabolic health addressing issues of obesity, diabetes, metabolic syndrome, and their micro- and macrovascular complications. Students will learn about both the descriptive and analytical epidemiology of these seemingly distinct but clearly clustered disorders including the so-called metabolic syndrome comprehensively and in-depth. International comparison of prevalent data in different social contexts will also be reviewed, so that the strategies for prevention by either changing our cultures or natures can be appreciated and debated with a better understanding of the related issues confronted by public health and medical professionals.

PHP 2030 – Clinical Trials Methodology
We will examine the modern clinical trial as a methodology for evaluating interventions related to treatment, rehabilitation, prevention and diagnosis. Topics include the history and rationale for clinical trials, ethical issues, study design, protocol development, sample size
considerations, quality assurance, statistical analysis, systematic reviews and meta-analysis, and reporting of results. Extensively illustrated with examples from various fields of health care research. Recommended prerequisites: introductory epidemiology and statistics.
Pre-requisites: PHP 2150, and either PHP 2508, 2510, or 2520.

**PHP 2040 – Applied Research Methods**
Emphasizes the theory of sampling and survey methods and their application to public health research. Topics include: survey design and planning; principles of sampling and survey terminology; questionnaire construction; protection of human subjects; data collection (including interviewing and data coding procedures); and application, presentation, and evaluation of results. Suggested prerequisites: PHP 2150, and PHP 2508 or 2510.

**PHP 2090 – Research Grant Writing for Public Health**
Addresses methodological and operational issues associated with developing research studies in epidemiology (including clinical trials). Students prepare protocols for research studies in human populations with attention to ethical guidelines and regulations. Students critique completed proposals, are exposed to existing systems for submission and review of funding applications, as well as controversial issues such as conflict of interest.

**PHP 2130 – Human Biology for Epidemiology**
This course provides basic principles of human biology and its applications to public health. Examples of biology topics include the cardiovascular system, endocrine system, immune system, nervous system, genetics, cancer, cardiovascular disease, HIV/AIDS, and depression. Examples of applied topics include strengths and weaknesses of using biomarkers, accuracy and precision of biological measures, quality assurance and quality control methods for using biomarkers for public health research. Mixed teaching methods are used, including small group discussions, problem-based learning and guest lectures.
Prerequisite: PHP 2150 (may be taken concurrently) or instructor permission.

**PHP 2150 – Foundations in Epidemiologic Research Methods**
The overall objective of this course is to provide students with a strong foundation in epidemiologic research methods. This is the first of a two-
or four-course sequence in epidemiologic methods aimed at students who expect to go on to conduct their own epidemiologic research. There will be a strong quantitative focus in this course. By the end of the foundations course, students should be sufficiently familiar with epidemiologic research methods to begin to apply these methods to their own work. Prerequisite: PHP 2507 or 2510 (either may be taken concurrently); the typical student will also have some introductory knowledge of epidemiology.

**PHP 2170 – Injury as a Public Health Problem**  
Fundamental concepts in pharmacology and physiology from the cellular/molecular level to organ systems. Required of first-year graduate students in Molecular Pharmacology and Physiology.

**PHP 2180 – Interpretation and Application of Epidemiology**  
This advanced graduate seminar extends methodologic training in epidemiology and integrates it with subject matter knowledge to enhance inferences about epidemiologic research and its application to policy. Students will build on a foundation of methods training through Intermediate Epidemiology (PHP 2200) with selected advanced methods topics such as meta-analysis, imputation, and the tools of clinical epidemiology. Each week, a new methodologic topic will be introduced and we will develop a specific application of epidemiology to causal inference and policy. Prerequisite: PHP 2200.

**PHP 2200 – Intermediate Methods in Epidemiologic Research**  
This second course in epidemiologic methods reinforces the concepts and methods taught in PHP 2150, with in-depth instruction in issues of study design, assessing threats to study validity including confounding and selection bias, and analyzing data with standard regression models. The course emphasizes hands-on learning and includes a combination of didactic lectures, discussions of methodologic papers, and a required laboratory component where students will learn to apply the concepts learned in class to real-world problems. Prerequisites: PHP 2150 and either 2510 or 2507, or permission of the instructor. Co-requisite: PHP 2511 or 2508.

**PHP 2220C – Perinatal Epidemiology**  
Provides an overview of topics related to reproduction, maternal and fetal outcomes of pregnancy, and longer term consequences of adverse
pregnancy outcomes. Methodological issues unique to reproductive and perinatal epidemiology are discussed, as well as general epidemiologic methods as applied to topics in reproductive and perinatal epidemiology.

Students are expected to actively participate in class discussions, lead discussions related to selected topics by providing an overview of the biology, descriptive epidemiology, and known risk factors of the topic, along with a detailed critique of recently published articles on the topic.

**PHP 2220E – Topics in Environmental and Occupational Epidemiology**

This course introduces students to the epidemiological study of historical and contemporary environmental/occupational agents, focusing on study design, biases, and methodological tools used to evaluate and extend the evidence linking exposures to human disease. The course will discuss applications, strengths, and limitations of different study designs and their use in studying specific environmental agents. Didactic lectures and student-led discussions will be used to provide students with a basic understanding of and the tools to apply/extend their knowledge of specific environmental agents (cell phones and endocrine disruptors) and special topics (children’s neurodevelopment and epigenetics). Prerequisite: PHP 2250 or equivalent.

**PHP 2220H – Methodological Issues in the Epidemiology, Treatment and Prevention of HIV**

The purpose of this graduate-level seminar is to use HIV as an example to introduce students to a variety of methodological issues in the epidemiologic study of infectious diseases. While we will study the treatment and prevention of HIV in great detail, emphasizing the current state of knowledge and critiquing the most recent literature, this course aims to use HIV as an example to better understand the variety and complexity of methodological issues in global and domestic infectious disease epidemiology today. Enrollment limited to 25 graduate students. Prerequisite: PHP 2250 or 2150; and PHP 2508 or 2511; or instructor permission.

**PHP 2230 – Infectious Disease Epidemiology**

From Black Death to Typhoid Mary to the more recent H1N1 pandemic, infectious disease epidemics have been recorded throughout written history. The top 5 infectious diseases cause more than 14 million deaths per year globally, accounting for roughly 25% of all deaths. This course will introduce students to the field of infectious disease epidemiology.
Topics will include a history of infectious diseases, epidemiology and control of infectious diseases, analytic methods, study design, outbreak investigations, and statistical modeling. Prerequisite: PHP2250. Instructor permission required.

**PHP 2240 – Methods in Environmental Epidemiology**
In this course, students will understand, implement, and interpret the design and analysis tools commonly used in environmental epidemiology. Topics to be discussed include cohort, time-series, case-crossover, and panel study designs, modeling of flexible dose-effect relationships, consequences of measurement error and missing data, and analyses of effects of exposures with unknown latencies. Although these methods will be presented in the context of estimating the health effects of environmental exposures, many of these methods are readily applied to other fields. Prerequisite: PHP 2200 or instructor permission.

**PHP 2250 – Advanced Quantitative Methods for Epidemiologic Research**
This course provides students with conceptual and quantitative tools based on counterfactual theory to make causal inference using data obtained from observational studies. Causal diagrams will be used to provide alternative definitions of and inform correcting for common biases. Non-, semi-, and fully parametric methods for addressing these biases will be discussed. These methods include standard regression, instrumental variables, propensity scores, inverse probability weighting, and marginal structural models. Settings when such methods may not be appropriate will be emphasized. Prerequisite: PHP 2200 and 2511; or PHP 2200 and 2508; or instructor permission.

**PHP 2430 – Analysis of Population Based Datasets**
Epidemiologic, health services, and social research often conducts "secondary analysis" of existing population-based datasets. Benefits include their representative sampling frames allowing generalizability to larger populations, timeliness, and lower cost. In addition, computer technology makes it possible to link some databases providing richer sources of information. There are several technical and methodological concerns when conducting "secondary analysis." Students will download, link, and analyze several data sets to understand the
advantages of these data for health policy analysis as well as understand and apply different analytic methods. Familiarity with statistical analysis software is required. Prerequisites: PHP2250, PHP 2150, and either PHP 2508 (may be taken concurrently) or 2510.

**PHP 2440 – Introduction to Pharmacoepidemiology**
The course will focus on substantive topics in pharmacoepidemiology, including relevant principles of pharmacology, inference from spontaneous case reports, study design considerations, premarketing pharmacoepidemiology, common data sources for pharmacoepidemiologic studies, drug utilization review, adherence, and the development, implementation, and assessment of therapeutic risk management policies. The course will also focus on issues in pharmacovigilance, including the legal and historical basis of pharmacovigilance, evaluation of individual adverse drug events, signal detection, active safety surveillance, and medication errors. A clinical background is not required.

**PHP 2455A- Health Services Research Methods**
Health services researchers use theories, models, and data to understand the health care system, assess the effectiveness of interventions (at multiple levels of the healthcare system), and inform health policy decisions. This course reviews the application of statistical and epidemiological principles to the design and analysis of health services research studies. The goal is to familiarize students with common study designs and methods in health services research, so that they can critically review the published literature and use these approaches in their own research.

**PHP 2510 – Principles of Biostatistics and Data Analysis**
Intensive first course in biostatistical methodology, focusing on problems arising in public health, life sciences, and biomedical disciplines. Summarizing and representing data; basic probability; fundamentals of inference; hypothesis testing; likelihood methods. Inference for means and proportions; linear regression and analysis of variance; basics of experimental design; nonparametrics; logistic regression.

**PHP 2511 – Applied Regression Analysis**
Applied multivariate statistics, presenting a unified treatment of
modern regression models for discrete and continuous data. Topics include multiple linear and nonlinear regression for continuous response data, analysis of variance and covariance, logistic regression, Poisson regression, and Cox regression. Prerequisite: APMA 1650 or PHP 2510.

PHP 2520 – Statistical Inference I
First of two courses that provide a comprehensive introduction to the theory of modern statistical inference. PHP 2520 presents a survey of fundamental ideas and methods, including sufficiency, likelihood based inference, hypothesis testing, asymptotic theory, and Bayesian inference. Measure theory not required.

PHP 2530 – Bayesian Statistical Methods
Surveys the state of the art in Bayesian methods and their applications. Discussion of the fundamentals followed by more advanced topics including hierarchical models, Markov Chain Monte Carlo, and other methods for sampling from the posterior distribution, robustness, and sensitivity analysis, and approaches to model selection and diagnostics. Features nontrivial applications of Bayesian methods from diverse scientific fields, with emphasis on biomedical research. Prerequisites: APMA 1650, PHP 2510, PHP 2511, or equivalent.

PHP 2540 – Advanced Methods for Multivariate Analysis
Survey of modern statistical methods for analysis of multivariate and high-dimensional data. Topics include inference for multivariate normally distributed data, methods for data reduction, classification and clustering, multiple comparisons for high-dimensional data, analysis of multidimensional contingency tables, and functional data analysis. Applications to diverse areas of scientific research, such as genomics, biomarker evaluation, and neuroscience will be featured. Prerequisites: APMA 1650 and 1660; or PHP 2520.
**PHP 2550- Practical Data Analysis**

Covers practical skills required for successful analysis of scientific data including statistical programming, data management, exploratory data analysis, simulation and model building and checking. Tools will be developed through a series of case studies based on different types of data requiring a variety of statistical methods. Modern regression techniques such as cross-validation, bootstrapping, splines and bias-variance tradeoff will be emphasized. Students should be familiar with statistical inference as well as regression analysis. The course will use the R programming language.

**PHP 2560- Introduction to Statistical Computing**

Statistical computing is an essential part of analysis. Statisticians need not only be able to run existing computer software but understand how that software functions. Students will learn fundamental concepts – Data Management, Data types, Data cleaning and manipulation, databases, graphics, functions, loops, simulation and Markov Chain Monte Carlo through working with various statistical analysis. Students will learn to write code in an organized fashion with comments. This course will be taught using both R and Julia languages in a flipped format.

**PHP 2601 – Linear and Generalized Linear Models**

This course will focus on the theory and applications of linear models for continuous responses. Linear models deal with continuously distributed outcomes and assume that the outcomes are linear combinations of observed predictor variables and unknown parameters, to which independently distributed errors are added. Topics include matrix algebra, multivariate normal theory, estimation and inference for linear models, and model diagnostics. Prerequisites: APMA 1650 or 1660, or taking PHP 2520 concurrently.

Note: The course will cover fundamental and advanced topics in linear models, and concepts related to the generalized linear models will not be covered during the course.

**PHP 2602 – Analysis of Lifetime Data**

Comprehensive overview of methods for inference from censored event time data, with emphasis on nonparametric and semiparametric approaches. Topics include nonparametric hazard estimation,
semiparametric proportional hazards models, frailty models, multiple event processes, with application to biomedical and public health data. Computational approaches using statistical software are emphasized. Prerequisites: PHP 2510 and 2511 or equivalent.

**PHP 2603 – Analysis of Longitudinal Data**
Comprehensive coverage of methods for drawing inference from longitudinal observations. Theoretical and practical aspects of modeling, with emphasis on regression methods. Topics include: multilevel and marginal models; estimation methods; study design; handling dropout and nonresponse; methods for observational data (e.g. time-dependent confounding, endogeneity, selection bias). SAS and S-Plus software are used. Prerequisite: Statistical inference (APMA 1650-1660 at minimum), regression (PHP 2511), working knowledge of matrix algebra (e.g. MATH 0520).

**PHP 2610 – Causal Inference and Missing Data**
Systematic overview of modern statistical methods for handling incomplete data and for drawing causal inferences from "broken experiments" and observational studies. Topics include modeling approaches, propensity score adjustment, instrumental variables, inverse weighting methods and sensitivity analysis. Case studies used throughout to illustrate ideas and concepts. Prerequisite: MATH 1610 or PHP 2511.

**PHP 2620 – Statistical Methods in Bioinformatics I**
Systematic overview of modern statistical methods for handling incomplete data and for drawing causal inferences from "broken experiments" and observational studies. Topics include modeling approaches, propensity score adjustment, instrumental variables, inverse weighting methods and sensitivity analysis. Case studies used throughout to illustrate ideas and concepts. Prerequisite: MATH 1610 or PHP 2511.

**SOC 2960G – Spatial Data Analysis Techniques in the Social Sciences**
Survey course of statistical methods that can be used to analyze spatial and/or clustered data at the individual and aggregate levels. Topics include multilevel analysis; fixed effects approaches; spatial choice; spatial autocorrelation, heterogeneity and dependence. Application with real data. Not a course about Geographic Information Systems (GIS) or mapping techniques.
BIO 1290 – Cancer Biology
Provides a conceptual understanding of molecular events underlying development of human cancer. Focused on genetic changes leading to malignant transformation of cells. Covers cell cycle control, DNA damage, mutagenesis, cancer predisposition syndromes, oncogenic viruses, tumor immunology, metastasis, cancer chemotherapy and drug resistance. Lecture plus discussion of primary literature. Prerequisites: BIOL 0280 OR BIOL 0470 OR BIOL 0500.

NEUR 1670 – Neuropharmacology and Synaptic Transmission
Synaptic transmission will be studied from a biochemical and pharmacological point of view. We will explore the factors regulating neurotransmitter synthesis, storage, release, receptor interaction, and termination of action. Proposed mechanisms of psychoactive drugs and biochemical theories of psychiatric disorders will be examined.

ECON 1630 – Econometrics I
Advanced introduction to econometrics with applications in finance and economics. How to formulate and test economic questions of interest. The multivariate linear regression model is treated in detail, including tests of the model's underlying assumptions. Other topics include: asymptotic analysis, instrumental variable estimation, and likelihood analysis.
Convergence concepts and matrix algebra are used extensively.

ECON 1370 - Race and Inequality in the United States
We examine racial inequality in the United States, focusing on economic, political, social and historical aspects. Topics include urban poverty, employment discrimination, crime and the criminal justice system, affirmative action, immigration, and low wage labor markets. Black/white relations in the US are the principle but not exclusive concern.

Approved Methods Electives for PhD and ScM Epidemiology Students

PHP 1560/2560 – Statistical Programming in R
Students will learn fundamental concepts - Data Management, Data types, Data cleaning and manipulation, databases, graphics, functions, loops, simulation and Markov Chain Monte Carlo through working with various statistical analysis. Prerequisites: APMA 1650 and PHP 1510 or minimum score of WAIVE in 'Graduate Student PreReq'

**PHP 2030 – Clinical Trials Methodology**
We will examine the modern clinical trial as a methodology for evaluating interventions related to treatment, rehabilitation, prevention and diagnosis. Topics include the history and rationale for clinical trials, ethical issues, study design, protocol development, sample size considerations, quality assurance, statistical analysis, systematic reviews and meta-analysis, and reporting of results. Prerequisites: (PHP 2120 or 2150) and (PHP 2508, 2510 or 2520)

**PHP 2040 – Applied Research Methods**
Emphasizes the theory of sampling and survey methods and their application to public health research. Topics include: survey design and planning; principles of sampling and survey terminology; questionnaire construction; protection of human subjects; data collection (including interviewing and data coding procedures); and application, presentation, and evaluation of results. Suggested prerequisites: PHP 2120, and PHP 2508 or 2510. Open to graduate students only.

**PHP 2118 – Genomics Epidemiology**
This course will describe how epidemiologists can integrate molecular, Mendelian, and population genetics to answer substantive topics of public health significance, and also inform the students of genetics and environmental health (in particular nutrition) that all genetic and environmental interaction could be assessed and understood in an integrated manner following epidemiologic principles and methods.

**PHP 2180 – Interpretation and Application of Epidemiology**
This course builds upon the foundation of introductory epidemiology and a basic understanding of quantitative and conceptual methods, with a focus on the interpretation of the strength and meaning of epidemiologic findings. Prerequisite: PHP 2200

**PHP 2250 – Advanced Quantitative Methods in Epidemiologic Research**

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This course provides students with conceptual and quantitative tools based on counterfactual theory to make causal inference using data obtained from observational studies. Prerequisites: (PHP 2200 and 2511) or (PHP 2200 and 2508)

PHP 2260 – Applied Epidemiologic Analysis Using SAS
This computer lab-based course will introduce students to applied epidemiologic analysis using the SAS® system. In addition, students will be directed through the process of writing a journal style article in which their SAS analyses will be incorporated.

PHP 2430 – Analysis of Population Based Datasets
Epidemiologic and health services research often conducts analysis using existing population-based datasets. Benefits include representative sampling frames, timeliness, and lower costs. Information technology makes it possible to link some databases providing richer sources of information. Prerequisites: PHP 2120; PHP 2508 (may be taken concurrently) or PHP 2510 or similar.

PHP 2455A – Health Services Research Methods I
This course reviews the application of statistical and epidemiological principles to the design and analysis of health services research studies. Prerequisites: (PHP 2200 and 2511) or (PHP 2200 and 2508)

PHP 2455B – Health Services Research Methods II
This course covers commonly used statistical (regression) models for health services research, including survival analysis; examines the problem of missing data and strategies for addressing it; and provides a basic introduction to causal inference methods for time-varying exposures (including non-adherence). Prerequisites: PHP 2455A or 2455

PHP 2465A – Introduction to Health Decision Analysis
The course introduces decision analysis, a structured mathematical approach to studying difficult problems. We will cover basic principles and mechanics of decision modeling to inform health and clinical decision as well as cost-effectiveness analysis.

PHP 2520 – Statistical Inference I
PHP 2520 presents a survey of fundamental ideas and methods, including sufficiency, likelihood based inference, hypothesis testing, asymptotic theory, and Bayesian inference.

**PHP 2530 – Bayesian Statistical Methods**
Surveys the state of the art in Bayesian methods and their applications. Discussion of the fundamentals followed by more advanced topics including hierarchical models, Markov Chain Monte Carlo, and other methods for sampling from the posterior distribution, robustness, and sensitivity analysis, and approaches to model selection and diagnostics. Prerequisites: APMA 1650, PHP 2510 or 2511

**PHP 2540 – Advanced Methods for Multivariate Analysis**
Survey of modern statistical methods for analysis of multivariate and high-dimensional data. Topics include inference for multivariate normally distributed data, methods for data reduction, classification and clustering, multiple comparisons for high-dimensional data, analysis of multidimensional contingency tables, and functional data analysis. Prerequisites: APMA 1650 and 1660; or PHP 2520.

**PHP 2550 – Practical Data Analysis**
Covers practical skills required for successful analysis of scientific data including statistical programming, data management, exploratory data analysis, simulation and model building and checking. Prerequisites: PHP 2511 and 2514

**PHP 2601 – Linear and Generalized Linear Models**
This course will focus on the theory and applications of linear models for continuous responses. Linear models deal with continuously distributed outcomes and assume that the outcomes are linear combinations of observed predictor variables and unknown parameters, to which independently distributed errors are added. Prerequisites: APMA 1650, 1660 or PHP 2520

* May be taken concurrently

**PHP 2602 – Analysis of Lifetime Data**
Comprehensive overview of methods for inference from censored event time data, with emphasis on nonparametric and semiparametric approaches. Topics include nonparametric hazard estimation, semiparametric proportional hazards models, frailty models, multiple
event processes, with application to biomedical and public health data. Prerequisites: PHP 2510 and 2511

**PHP 2603 – Analysis of Longitudinal Data**
Comprehensive coverage of methods for drawing inference from longitudinal observations. Theoretical and practical aspects of modeling, with emphasis on regression methods. Prerequisite: Statistical inference (APMA 1650-1660 at minimum), regression (PHP 2511), working knowledge of matrix algebra (e.g. MATH 0520).

**PHP 2610 – Causal Inference and Missing Data**
Systematic overview of modern statistical methods for handling incomplete data and for drawing causal inferences from "broken experiments" and observational studies. Topics include modeling approaches, propensity score adjustment, instrumental variables, inverse weighting methods and sensitivity analysis. Prerequisites: MATH 1610*, PHP 2511* or 2514*. May be taken concurrently.

**PHP 2620 – Statistical Methods in Bioinformatics I**
Introduction to statistical concepts and methods used in selected areas of bioinformatics. Organized in three modules, covering statistical methodology for: (a) analysis of microarray data, with emphasis on application in gene expression experiments, (b) proteomics studies, (c) analysis of biological sequences.

1PhD students must enroll in PHP2560. ScM students may enroll in either PHP1560 or PHP2560.
2ScM students may only count one of these courses as a methods elective.
3Required for PhD students and will not count as methods elective.
4PhD students may only count one of these courses as a methods elective.
5Students are encouraged to take PHP2250 prior to or concurrently with either PHP2455A or PHP2455B. Students are discouraged from taking both PHP2455B and PHP2610.
<table>
<thead>
<tr>
<th>Activity</th>
<th>Obligation (max. hours per week)</th>
<th>Minimum Class Size†</th>
<th>Assignment Process</th>
<th>Typical Activities*</th>
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</table>
| Teaching Assistant (TA)§         | 20                               | 25                  | GPD appoints TAships with input from faculty, Academic Program Coordinator, and Department Chair | - Grading and marking  
- Hold office hours  
- Develop midterms and finals  
- Run tutorials or lab sessions  
- Facilitate class discussions |
| (replaces RAship, usually in 2nd year) |                                  |                     |                                                                                   |                     |
| Teaching Experience (TE)         | 10                               | 10                  | GPD appoints TEs with input from faculty, Academic Program Coordinator, and Department Chair | - Deliver guest lecture(s)  
- Contribute to lesson plans  
- Participate in syllabus development  
- Hold office hours  
- Facilitate class discussions  
- Run tutorials or lab sessions |
| (for course credit, usually taken in 3rd or 4th year) |                                  |                     |                                                                                   |                     |
| Supplemental Teaching Assignment (STA) | Varies (5-12); request in course budget | N/A                 | Faculty request STAs during course budget process. Review by BUSPH administration. Assignments approved by GPD | - Grading and marking  
- Hold office hours  
- Develop midterms and finals  
- Facilitate class discussions |
| $15/hr PhD; $13/hr Master’s      |                                  |                     |                                                                                   |                     |

† Class sizes above the minimum do not guarantee a TA or TE. Assignments are based on course content, instructional method (e.g., labs or tutorials), and student availability. For AY 2015-2016, the functional minimums (based on past enrollment) for TAs and TEs were 50 and 20, respectively.

* Specific responsibilities are at the discretion of the instructor.

§ Students on externally-funded awards (e.g., NIH NSRA F31s) are waived from the TA requirement during the tenure of the award.
**Additional resources from the Sheridan Center:**

- For Faculty, *How Faculty Can Work Effectively with TAs:*
  http://www.brown.edu/about/administration/sheridan-center/sites/brown.edu.about.administration.sheridan-center/files/uploads/FacultyWorkWithTAs.pdf

- For Students, *TA Handbook and Tips:*
  http://www.brown.edu/about/administration/sheridan-center/teaching-learning/teaching-assistants/ta-handbooks-tips
### PhD Program Progression Checklist - Epidemiology

<table>
<thead>
<tr>
<th>Student Name:</th>
<th>Advisor:</th>
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<tbody>
<tr>
<td>Semester Enrolled:</td>
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<tr>
<td>Degree Plan:</td>
<td>Mentor:</td>
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<td>Date Submitted:</td>
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#### Core Courses – credit & 2-3 non credit

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<thead>
<tr>
<th>Course Code</th>
<th>Course Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHP 2150</td>
<td>Foundations in Epi</td>
</tr>
<tr>
<td>PHP 2510</td>
<td>Principles of Biostats &amp; Data Analysis</td>
</tr>
<tr>
<td>PHP 2511</td>
<td>Applied Regression Analysis</td>
</tr>
<tr>
<td>PHP 2200</td>
<td>Intermediate Epi</td>
</tr>
<tr>
<td>PHP 2250</td>
<td>Advanced Quantitative Methods</td>
</tr>
<tr>
<td>PHP 2180</td>
<td>Interpretation &amp; Application of Epi</td>
</tr>
<tr>
<td>PHP 2130</td>
<td>Human Biology</td>
</tr>
<tr>
<td>PHP 2090</td>
<td>Scientific Writing in Public Health</td>
</tr>
<tr>
<td>PHP 2980</td>
<td>Journal Club Student Director (credit optional)</td>
</tr>
<tr>
<td>Online Graduate Course</td>
<td>SAS Data Management</td>
</tr>
<tr>
<td>RCR</td>
<td>(non-credit)</td>
</tr>
<tr>
<td>PHP 101</td>
<td>(non-credit)</td>
</tr>
</tbody>
</table>

#### Methods Electives* (2-3)

<table>
<thead>
<tr>
<th>Elective 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective 2</td>
</tr>
<tr>
<td>Elective 3</td>
</tr>
</tbody>
</table>

#### Substantive Electives* (2-3)

<table>
<thead>
<tr>
<th>Elective 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elective 2</td>
</tr>
<tr>
<td>Elective 3</td>
</tr>
</tbody>
</table>

#### Individual Development Plan

#### TA Requirement

#### TE Requirement

- **Written Qualifying Exam**
  - 1st Portion (end of Sem. 2)
  - 2nd Portion (after Sem. 4 - June)

- **External Funding Application** (end of Sem. 4)

- **Thesis Topic** (end of Sem. 4)

- **Dissertation Proposal Copy**
  - (2-3 wks prior to Oral Exam)

- **Oral Dissertation Proposal Exam** (end of Sem. 5)

#### Committee Members (3 min)

<table>
<thead>
<tr>
<th>Member 1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member 2</td>
</tr>
<tr>
<td>Member 3</td>
</tr>
</tbody>
</table>
4.

Outside Reader

Defense Date (end of Sem. 8)
Defense Flyer (3-4 wks prior)
Dissertation to Grad School
### ScM Program – Epidemiology

#### Student Name:  
Semester Enrolled:  
Degree Plan:  
Advisor:  
Mentor:  
Date Submitted: _______________________

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Date</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>12 courses</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Health 101</td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAS 1&amp;2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RCR Training (non-credit)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHP 2150 Intro to Epi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHP 2200 Intermediate Epi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHP 2130 Human Biology</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methods 1 elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Methods 2 elective</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHP 2510 Principles of Biostats</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PHP 2511 Applied Regression</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall-Year 1 IDP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fall-Year 2 IDP</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Journal Club Facilitator (Year 2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunch with Program Director Fall – Year 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunch with Program Director Spring – Year 1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunch with Program Director Fall – Year 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lunch with Program Director Spring – Year 2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thesis Proposal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date/Event</td>
<td>Details</td>
<td></td>
</tr>
<tr>
<td>--------------------------------</td>
<td>--------------------------------</td>
<td></td>
</tr>
<tr>
<td>(June 1 of 1st year)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Progress Report</td>
<td>(January 15th of 2nd year)</td>
<td></td>
</tr>
<tr>
<td>Thesis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral Presentation</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Course Waiver Request Form

Students should use this form to request permission to waive a required course. Generally, only required introductory courses can be waived (e.g.: PHP2510, PHP2040), and then only when a student can demonstrate that s/he has satisfactorily completed an equivalent course at Brown or at another institution in the past. Students seeking permission should obtain signatures first from their advisor, second from the course instructor, and lastly, from the program director. The course instructor may ask the student to take a past final exam from the course for which a waiver is being requested. Students should propose a suitable alternate activity in place of the waived course. Suitable activities may include: serving as a TA for the waived course, taking an alternate course, and an independent study. Completed forms should be returned to the Academic Program Coordinator.

Student Name: ________________________________

Degree Program and Year: ________________________________

Course for which waiver is requested (provide course number and title): ________________________________

Have you previously taken an equivalent course at Brown or at another institution? __________

If so, list the institution, course name, course number, year taken and your grade in the course. Attach a course syllabus.

______________________________________________________________________________

______________________________________________________________________________

What course/activity do you propose to do in lieu of this course (e.g: alternate course, TA this course)?

______________________________________________________________________________

______________________________________________________________________________

______________________________________________________________________________

Required Signatures:

Advisor: ________________________________ ________________________________ ________________________________

Course Instructor: ________________________________ ________________________________ ________________________________

Program Director: ________________________________ ________________________________ ________________________________

(name) (signature) (date)
Journal Club Waiver Form

Every doctoral student in the School of Public Health is required to attend Journal Club each semester while enrolled in the program unless exempted by the student’s Graduate Program Director. However, the Graduate Program Director should notify the Instructor of Record, in writing, of any exemptions being granted each semester. Please fill out the fields below in order for you to receive exception from this departmental requirement. Journal Club waiver forms are to be filed in the department student’s file or e-record.

Student Name:

(First) ___________________________  (Last) ___________________________

Please provide a few words, explaining the reason you would like to obtain a waiver from this requirement:

________________________________________________________________________

Student Signature

________________________________________________________________________

The student above is exempt from participating in Journal Club for (provide year) ____________ (fall or spring semester) ____________.

Graduate Program Director

(First) ___________________________  (Last) ___________________________

Graduate Program Director Signature

________________________________________________________________________
Timeline for the Master of Science in Epidemiology Thesis

<table>
<thead>
<tr>
<th>First Year</th>
<th>*for students planning to graduate in two years</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>Meet with Faculty</strong>&lt;br&gt;Students should confer with their core advisor and review the faculty directory to find faculty with public health research interests similar to their own. Students should meet with faculty to discuss their research projects and current issues in the student’s area of interest. (<a href="http://www.brown.edu/academics/public-health/faculty">http://www.brown.edu/academics/public-health/faculty</a>)&lt;br&gt;<strong>Preliminary Research</strong>&lt;br&gt;Students should begin to narrow their thesis topic by reading the literature and meeting with potential thesis advisors. Discussions with the epidemiology faculty should provide the opportunity to explore various topics of interest and thesis topic ideas. Students might also want to learn about the thesis projects previous ScM students have completed, which will be kept on file in the Epidemiology library.</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td><strong>June 1 – Thesis Proposal Due</strong>&lt;br&gt;Students should identify a thesis advisor to guide the development of their thesis proposal. The thesis proposal should include a timeline for completion, including data analysis, first draft of literature review (if choosing this thesis option), first draft of paper/s, and final thesis. The proposal should clearly define and justify the thesis project.</td>
</tr>
<tr>
<td><strong>Second Year</strong></td>
<td><strong>Summer</strong>&lt;br&gt;It is recommended that students begin their thesis work over the summer. <strong>Data Analysis</strong>&lt;br&gt;Students who are going to undertake a primary data analysis for their thesis are strongly advised to complete most of their data analyses over the summer.&lt;br&gt;<strong>First Draft of Literature Review (including Meta-Analysis)</strong>&lt;br&gt;Students preparing a literature review should have a first draft completed by September 1.</td>
</tr>
<tr>
<td><strong>First Semester</strong></td>
<td><strong>Data Analyses</strong>&lt;br&gt;All data analyses should be completed by the end of the first two months of the first semester, or before the beginning of the 2nd semester at the latest, to allow time for writing and interpretation.&lt;br&gt;<strong>First Draft of Paper/s Sections</strong>&lt;br&gt;Students should submit a first draft of their paper/s to include the Introduction and Methodology sections by October 1st; the Results section by November 15th; a draft of the entire paper/s by January 10th; and the final completed thesis, signed by the advisor and reader, by March 1st.&lt;br&gt;<strong>January 15th – Progress Report</strong>&lt;br&gt;Students must submit a progress report completed by their thesis advisor by January 15th. The advisor should indicate if the student has met the recommended timelines; has made good progress toward completion of the thesis; and will, or will not, be able to complete the thesis by March 1st (Appendix B).</td>
</tr>
<tr>
<td><strong>Second Semester</strong></td>
<td><strong>April 1st- Submit Thesis</strong>&lt;br&gt;Students must complete the thesis by March 1st to allow sufficient time to respond to formatting changes to comply with the requirements of the Graduate School (Appendix D). Students need to allow enough time for the thesis advisor and reader to review the thesis, return comments (to be addressed by student in final draft), and sign the thesis prior to the March 1st deadline.&lt;br&gt;<strong>May 1st</strong>&lt;br&gt;The Master’s Thesis must be submitted to the Graduate School for graduation in May.&lt;br&gt;(NOTE: Students must make an appointment to submit the thesis; contact Barbara Bennett in the Graduate School at 401-863-2843)</td>
</tr>
</tbody>
</table>
PROPOSAL FOR THE MASTER OF SCIENCE IN EPIDEMIOLOGY THESIS

Students must submit this proposal form, signed by the thesis advisor and reader, accompanied by a one page description of the thesis work, by June 1st of their first year. The thesis project description should include a brief description of the literature review topic, if applicable, or a clear description of the analytical paper, and a timeline for completing various components (see page 8 of the Thesis Guidelines for recommended dates). Be sure to clearly define and justify the thesis project, including a statement of the proposed final product and its contribution to your educational and career goals. Students should complete this proposal form, including appropriate signatures, and submit it to Master’s Program Director, Eric Loucks, PhD for approval. Students will receive an email confirmation when the thesis proposal has been approved.

The ScM Thesis Proposal must be approved by the thesis advisor, as well as Master’s Program Director

Student Name

Thesis Title

Signature Date

Please indicate the final thesis product (either should be of publishable quality):

☐ A 10-20 page literature review
☐ An analytical paper

Thesis Advisor

Name

Mailing Address

City State Zip

Email address
☐ I have read and approve this thesis proposal and I agree to serve as the thesis advisor for this project.

Signature Date

Academic Advisor

Name

Mailing Address

City State Zip

Email address
☐ I have read and approve this thesis proposal.

Signature Date

This Master of Science Thesis Proposal has been approved.

Master’s Program Director, Joseph Braun Date
Conference Travel Funding
Procedures

Graduate School Funding (all graduate students):
Graduate students who present at academic conferences can apply to the Graduate School for up to $650 to cover related travel expenses. Given funding limitations, application does not guarantee support. Eligible graduate students will be reimbursed for a maximum of one conference per fiscal year (July 1 through June 30), as determined by the end date of travel. Reimbursement will not be granted for merely attending a conference.

CLICK HERE for Graduate School Conference Travel information and the link to the Graduate School’s “Conference travel funding application.” Completed application forms should be saved in PDF format for submission to the Graduate School. Conference travel application forms and related questions should be submitted to graduate-travel@brown.edu.

School of Public Health Funding (doctoral students):
Doctoral students, who present original work at academic conferences, can request support from both the Graduate School (see above instructions) and the School of Public Health. The School of Public Health will provide up to $400 to cover related travel expenses not covered by the Graduate School. Students are eligible to receive these funds one time, at any time during their doctoral training period. Given funding limitations, application does not guarantee support. When requesting both Graduate School and School of Public Health support, doctoral students must:

- Complete the Graduate School’s Conference travel funding application. Where instructed, “Please indicate any other funding you expect to receive for this trip,” the student should write “School of Public Health” and the $ amount (up to $400) being requested of the School.
- Attach necessary forms as explained on the application form.
- Sign the application and obtain approvals from the Director of Graduate Program.
- Save completed application form in PDF format.
- Submit the application via e-mail to graduate-travel@brown.edu and the School of Public Health’s Academic Program Manager for approval.

Conference Travel Reimbursement Instructions (all graduate students):
After travel is completed, graduate students must submit appropriate documentation [as explained on the Graduate School’s Conference Travel Reimbursement webpage] to their home program’s administrative coordinator for approval and electronic processing of the reimbursement request. If the documents submitted do not correspond to those guidelines, reimbursement requests will be returned for completion.

Completed travel reimbursement requests should be submitted to the home program no later than 30 days after completion of travel; those submitted after 45 days will not be reimbursed.
Contact: Dean’s Office, Campus Box G-S121-4, Phone: 863-3681
E-mail:

**DOCTORAL STUDENT CONFERENCE TRAVEL AWARD APPLICATION FOR FUNDING**

*Conference Travel Award funding is available for doctoral students who have been invited/accepted to present their research. The confirmation of acceptance MUST accompany your request.*

Student Name: ___________________________ Today’s Date: ________________
Graduate Program: ___________________________ Student Entry Year: ________________
Name of Conference: ___________________________
Conference Location: ___________________________ Conference Dates: ________________
Title of Your Paper/Presentation: ___________________________

*(Attach confirmation, of your invitation to present, to this application form)*

**Estimated Costs of Trip** *(Include breakdown below)*

<table>
<thead>
<tr>
<th>Cost Item</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference Registration</td>
<td></td>
</tr>
<tr>
<td>Travel</td>
<td></td>
</tr>
<tr>
<td>Hotel</td>
<td></td>
</tr>
<tr>
<td>Meals</td>
<td></td>
</tr>
</tbody>
</table>

Total Estimated Costs: __________

Please indicate any other funding you expect to receive for this trip:

Your Graduate Program’s Contribution: __________ Your Mentor’s Contribution: __________ Other

Contribution *(Funds from other sources such as professional societies, etc.): __________

Requested amount *(up to $400):__________

This application must be filed with the School of Public Health at least one month prior to travel. Return by e-mail or campus mail to the contact listed above. You should contact the office to be sure that your application has been received. Applications that do not include all necessary information will be returned. Please be sure that you obtain the signature of your program director. Students will be notified via e-mail of approved application.

Student Signature ___________________________ Date ___________________________

Director of Graduate Program ___________________________ Date ___________________________

Associate Dean for Public Health ___________________________ Date ___________________________
Conference Travel Application Form

Applications must be submitted to the Graduate School 30 days prior to travel date.

Student Name: ___________________________ Student Entry Year: _______

Email: ______________________________________

Graduate Program: ______________________________________

Name of Conference: ______________________________________

Dates of Travel: __________________________ Location: _________________

Please attach your confirmation of invitation to present your research at a conference or conference program with your name and presentation title. Sixth year students should also attach a letter of support from the Director of Graduate Studies for their program.

Estimated Costs: __________________________

Requested amount from the Graduate School (up to $650): __________

Please indicate any other funding you expect to receive for this trip: __________________________

This application must be filed with the Graduate School at least one month prior to travel. Please email to graduate-travel@brown.edu. Students will be notified of decisions via email.

Student Certification and Approvals Section

With my signature I certify that I am seeking conference travel funds as a member of the community of scholars at Brown University. As such I understand it is incumbent upon me to share the knowledge gained as a result of this travel in ways that further the academic mission of Brown University.

Student __________________________ Date __________________________

Director of Graduate Study __________________________ Date __________________________
(If applicable; see policy for details)

Graduate School __________________________ Date __________________________

If funding request is approved, this form must accompany reimbursement requests (expense reports) submitted to the graduate program after travel period has ended. Reimbursement requests should be submitted within 30 days of travel. The Graduate School will not reimburse requests submitted after 45 days of travel end date.
Joukowsky Summer Research Award Application
Application Deadline: February 28

The Joukowsky Summer Research Award is for travel during the summer months of June through August. For further information on the award, please refer to the Graduate School Handbook.

Student Name: ____________________________________________ Student Entry Year: _______

Email: ____________________________________________ Banner ID Number: _________________________

Department: _________________________ Campus Box: _________________________

This application must be accompanied by the following:

1. A description of your proposed academic activities (one page or less) and the impact a Research Award would have in advancing your graduate studies or completing thesis work.
2. A full budget for the proposed activities.
3. A letter of support by the Research Advisor or DGS.
4. Documentation of external summer research awards that have been won for the proposed work (if applicable).

Only PhD students in years 1-5 are eligible for this award.

Departure Date: ________________ Return Date: ________________

Amount of Request $ __________________________

Name of External Award(s) __________________________

Amount of External Award(s) $________________________

Please email to graduate-travel@brown.edu. Students will be notified of decisions via email.

Student Certification and Approvals Section

With my signature I certify that I am seeking conference travel funds as a member of the community of scholars at Brown University. As such I understand it is incumbent upon me to share the knowledge gained as a result of this travel in ways that further the academic mission of Brown University.

Student __________________________ Date __________

Director of Graduate Study __________________________ Date __________

Graduate School __________________________ Date __________

If approved for a summer research award, students are required to submit a travel expense report with original receipts to the Graduate School within 14 days of the return date of travel, along with a brief one-page summary of research or learning outcomes and a description of how the travel fund was beneficial to the achievement of their summer academic endeavors.
International Travel Fund Application Form

Purpose of Travel (select one): ☐ Conference ☐ Research

Student Name: ___________________________________________ Student Entry Year: _________

Email: __________________________________________________

Graduate Program: __________________________ Postdoctoral Fellow? ☐ Yes ☐ No

Name of Conference/Title of Research Project: ___________________________________________

________________________________________________________

Dates of Travel: __________________________ Location: __________________________

Please attach your confirmation of invitation to present your research at a conference or conference program with your name and presentation title. Sixth year students should also attach a letter of support from the Director of Graduate Studies for their program.

Total Estimated Costs (please attach budget): __________________________

Requested amount from the Graduate School (up to $1,000): __________

Please indicate any other funding you expect to receive for this trip: __________________________

This application must be filed with the Graduate School at least one month prior to travel. Please email to graduate-travel@brown.edu. Students will be notified of decisions via email.

Student Certification and Approvals Section

With my signature I certify that I am seeking conference travel funds as a member of the community of scholars at Brown University. As such I understand it is incumbent upon me to share the knowledge gained as a result of this travel in ways that further the academic mission of Brown University.

_________________________ Date
Student

_________________________ Date
Director of Graduate Study
(if applicable; see policy for details)

_________________________ Date
Graduate School

If funding request is approved, this form must accompany reimbursement requests (expense reports) submitted to the graduate program after travel period has ended. Reimbursement requests should be submitted within 30 days of travel. The Graduate School will not reimburse requests submitted after 45 days of travel end date.
Oral Exam Date Request Form
(Consult Student Handbook for Details/Requirements)

Student Name: ___________________________ Date: ______________________
Department: __________________________________________________________
Dissertation Title: _____________________________________________________

Committee Members (Type or Print Names):

Oral Exam Chair: ______________________________________________________
Dissertation Advisor: _________________________________________________
Committee Member: _________________________________________________
Committee Member: _________________________________________________
Committee Member: _________________________________________________
Committee Member: _________________________________________________
☐ (Check if External Reader) __________________________________________

Schedule Oral Exam and Submit Dissertation Proposal
(Exam should be scheduled 2-3 weeks in advance, and should be completed six to nine months from the time of a successful written examination)

Proposed Oral Exam Date: _____________ Oral Exam Location: ______________
Proposal has been provided to committee members? ☐

Obtain Graduate Program Director’s Signature:

_________________________________________  ______________________________
Graduate Program Director Signature        Date

Distribution: Provide copies to the Program Director and Administrative Coordinator
Oral Exam Results Form

Student Portion

Student Name: __________________________ Date of Oral Exam: ______________
Department: __________________________________________________________________
Dissertation Title: __________________________________________________________________

Committee Members (Type or Print Names):

________________________________________________________________________
Dissertation Advisor

________________________________________________________________________
Committee Member

________________________________________________________________________
Committee Member

________________________________________________________________________
Committee Member

Oral Exam Chair Portion
(Please give copies to the Graduate Program Director, Administrative Coordinator, and student)

Outcome:
■ Student Passed (Date Passed: ____________________ )
■ Student Conditionally Passed  □ Student Did Not Pass
■ Request to Change Academic Advisor (New Advisor’s Name: ____________________ )

Overview of What Happened During the Oral Exam:
(If student conditionally passed, what must the student do in order to pass?)

Oral Exam Chair’s Signature:

________________________________________  ______________________________________
Print Name  Signature  Date
Dissertation Committee Confirmation Form
(Consult Student Handbook for Details/Requirements)

Student Name: __________________________ Date: __________________________
Department: __________________________

Proposed Topic and Committee Members (three required; additional space provided):

Dissertation Title: __________________________________________________________

Dissertation Advisor: _____ Type or Print Name __________________________ Signature ______________

Committee Member: _____ Type or Print Name __________________________ Signature ______________

Committee Member: _____ Type or Print Name __________________________ Signature ______________

Committee Member: _____ Type or Print Name __________________________ Signature ______________

Committee Member: _____ Type or Print Name __________________________ Signature ______________

Committee Member: _____ Type or Print Name __________________________ Signature ______________

(0) (Check if member is External Reader) _____ Type or Print Name __________________________ Signature ______________

Obtain Graduate Program Director’s Signature:

_____________________________ Graduate Program Director Signature __________________________ Date _______

Distribution: Provide copies to the Program Director and Administrative Coordinator
DISSERTATION DEFENSE INFORMATION

STUDENT NAME: ___________________________ SIS ID NUMBER: SISW__________

DEPARTMENT: ______________________________

PREVIOUS DEGREES

DEGREE_________ INSTITUTION________________________DATE AWARDED _________
DEGREE_________ INSTITUTION________________________DATE AWARDED _________
DEGREE_________ INSTITUTION________________________DATE AWARDED _________

DEFENSE DETAILS

DATE_________________________ TIME ______________
BUILDING______________________ ROOM ______________

EXACT TITLE OF DISSERTATION


COMMITTEE

DIRECTOR________________________ DEPARTMENT __________________________
READER_________________________ DEPARTMENT __________________________
READER_________________________ DEPARTMENT __________________________
READER_________________________ DEPARTMENT __________________________

PRELIMINARY EXAMINATION

DATE PASSED_________ LANGUAGE REQUIREMENTS DATE PASSED_________

DEPARTMENTAL TEACHING REQUIREMENT

☐ SATISFIED ☐ NOT REQUIRED

SUPERVISED RESEARCH REQUIREMENT

☐ SATISFIED ☐ NOT REQUIRED

Director of Graduate Study ___________________________ Date ___________________________