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# DEPARTMENT EDUCATION POLICIES

## CONTINUATION OF ENROLLMENT

Students must maintain continuous registration from the time of matriculation until he/she is awarded his/her degree  
withdraws from the program  
is dropped from the program.

Students must register for each semester during this time, excluding the summer sessions. The continuation of enrollment fee for 2018 - 2019 academic year is \$1,070 per semester.

## COURSE WAIVERS

All requests must be made at the time of initial registration in a degree program. Please see the program administrator for this request.

## ELECTIVE COURSES

Courses may be chosen from the variety of courses offered within the Department and within the various departments and colleges of the University, but in any event the course topic must be relevant to public and population health. Descriptions of PHS courses can be found on the PHS website.

Courses may be accepted toward degree requirements if the subjects taken form an integral part of the student's proposed program of study

Students need to consult with their advisor and the Program Director as to whether or not a certain course is appropriate

With the permission of the Master's Program Director and approval in advance from the Senior Associate Dean of Graduate Studies, a student may take a course at another college or university to count as an elective. Ordinarily, the course must be taken in a timely fashion, and before beginning the MPH research project

## INCOMPLETE GRADES

# **DEPARTMENT EDUCATION POLICIES**

## LEAVE OF ABSENCE

Upon the recommendation of the Program Director, the Dean may grant a leave of absence to a matriculated graduate student who has not yet completed the course requirements only for medical reasons. No more than two one-semester leaves or one one-year leave will be granted.

In order to declare a leave of absence, a student must complete and sign the appropriate form and pay a \$60 registration fee per semester.

## MAXIMUM TIME

An MPH candidate must complete all the requirements for the degree within five years from the time of his/her initial matriculation into the graduate program. PhD candidates have a maximum of seven years to complete degree requirements.

work at another institution for transfer credit after matriculation in a graduate program must be approved

# INDEPENDENT STUDY POLICY

## Steps to take

- Pick who will be your supervisor/instructor
- Give your course a title,
- Submit a plan of what you plan to do, i.e., the specific about what you will accomplish, that you work out with your supervisor/instructor
  - o Include books, readings, and exercises similar to a regular course syllabus
  - o Include an estimate as to the amount of time that will be required (aim for approximately 120 hours over the course of the semester)
  - o Include a signed statement from your supervisor/teacher that that approve of the plan

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### **Policies and Reporting Procedures**

It is the University's aim to provide a setting which is characterized by respect for all and encouragement for the development of each individual's full potential. The University will not tolerate any behavior, including verbal or physical conduct, which constitutes sexual misconduct, harassment, discrimination or other unprofessional actions. All learners, staff, and faculty are accountable for compliance with our ICARE values and codes of conduct. Violations may lead to disciplinary action which, in sufficiently severe cases, may lead to separation from the University after applicable due process.

Students or trainees in the School of Medicine and Dentistry, School of Nursing, and URMC should advise a supervisor or other designated faculty member, leader or staff about all suspected violations of this guideline as well as all incidents of mistreatment, sexual discrimination, misconduct, harassment and acts of intolerance and discrimination. Reports should be directed to their school or program as indicated in the chart below. All individuals who file a report will be advised about the follow-up and outcome of any reported incident.

**The chart below describes types of discrimination and harassment based on membership in a protected class and identifies applicable policies, resources, and reporting mechanisms.**



## KEY DATES & DELIVERABLES

### May Graduation

March 1 First draft of the thesis must be submitted to your ENTIRE committee. Note this deadline applies to the report of the completed project, not your project proposal.

April 15 – Final completed hard copy of the thesis with completed committee sign-off form to the Graduate Program Administrator.

### August Graduation



**DEPARTMENT OF PUBLIC HEALTH SCIENCES  
ANALYTIC EPIDEMIOLOGY CERTIFICATE**

**Program Description**

The advanced certificate in clinical research methods is designed to give individuals the knowledge and tools needed to conduct clinical research.

**Educational Objectives of the Program**

To provide researchers and other interested individuals with a practical understanding of quantitative and qualitative research methods including case control studies, cohort studies, randomized clinical trials, surveys, and mixed methods research.

<b>REQUIRED COURSES</b>	<b>COURSE TITLE</b>	<b>WHEN OFFERED</b>	<b>CREDITS</b>
PM 410	Intro to Data Management & Analysis	Fall, Summer	3
PM 415	Principles of Epidemiology	Fall	3
<b>ONE OF THE FOLLOWING:</b>			
PM 401	Quantitative Methods	Fall, Summer	3



The Graduate Certificate of Advanced Study in Biomedical Data Science (CAS-BDS) is a program suitable for researchers and analysts with biomedical, computer science, statistical, biomedical, or health services backgrounds. The CAS-BDS addresses the growing needs of data analytics by providing the knowledge and skills necessary to work with large datasets



**DEPARTMENT OF PUBLIC HEALTH SCIENCES  
CLINICAL RESEARCH METHODS CERTIFICATE**

**Program Description**

The advanced certificate in clinical research methods is designed to give individuals the knowledge and tools needed to conduct clinical research.

**Educational Objectives of the Program**

To provide researchers and other interested individuals with a practical understanding of quantitative and qualitative research methods including case control studies, cohort studies, randomized clinical trials, surveys, and mixed methods research.

**DEPARTMENT OF PUBLIC HEALTH SCIENCES  
ADVANCED CERTIFICATE IN EXPERIMENTAL THERAPEUTICS**

**Program Description**

**DEPARTMENT OF PUBLIC HEALTH SCIENCES  
HEALTH SERVICES RESEARCH CERTIFICATE**

**Program Description**

The advanced certificate in health services research is designed to give individuals the knowledge and tools needed to evaluate the effectiveness of health services programs and policies.

**Educational Objectives of the Program**

To provide researchers and other interested individuals with a practical understanding of health services research methods including cost-effectiveness analysis, impact analysis, and implementation research.

<b>REQUIRED COURSES</b>	<b>COURSE TITLE</b>	<b>WHEN OFFERED</b>	<b>CREDITS</b>
PM 445	Intro to Health Services Research & Policy	Fall	3
PM 484	Medical Decision Making and Cost Effectiveness Research	Spring	3
		<b>REQUIRED</b>	<b>6</b>
<b>TWO OF THE FOLLOWING:</b>			
PM 401	Quantitative Methods	Fall, Summer	3
PM 415	Principles of Epidemiology	Fall	3
PM 421	US Health Care System: Financing, Delivery, Performance	Fall	3
PM 422 PM 430	Quality of Care & Risk Adjustment Psychology in Health Services	Spring	3

**DEPARTMENT OF PUBLIC HEALTH SCIENCES  
PUBLIC HEALTH CERTIFICATE**

**Program Description**

To provide individuals with knowledge and understanding of the key elements of public health practice.

**Educational Objectives of the Program**

To convey a working knowledge of the five key areas of public health practice; epidemiology, biostatistics, social and behavioral medicine, the US health care system, and environmental epidemiology. The certificate is also designed to prepare qualified individuals to take the American Board of Public Health certification exam.

<b>REQUIRED COURSES</b>	<b>COURSE TITLE</b>	<b>WHEN OFFERED</b>	<b>CREDITS</b>
PM 401	Quantitative Methods	Fall, Summer	3
PM 415	Principles of Epidemiology	Fall	3
PM 421	US Health Care System: Financing, Delivery, Performance	Fall	3
PM 426	Social and Behavioral Medicine	Spring	3
PM 470	Environmental & Occupational Epidemiology	Fall	3





# Masters' Programs

Master of Public Health (MPH)

Master of Science  
Clinical Investigation (MS-CI)

Master of Science  
Epidemiology (MS-EPI)

Master of Science  
Health Services Research & Policy  
(MS-HSRP)



**DEPARTMENT OF PUBLIC HEALTH SCIENCES  
MASTER OF PUBLIC HEALTH (MPH) PROGRAM OF STUDY SHEET  
TOTAL CREDITS REQUIRED: 43**

**Student Name:** \_\_\_\_\_ **Date Matriculated:** \_\_\_\_\_

**GENERAL INFORMATION**

Electives can be tailored toward individual's research focus and are identified accordingly.

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>CREDITS</b>	<b>WHEN OFFERED</b>	<b>CREDITS</b>
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**MASTER OF PUBLIC HEALTH (MPH)  
MPH ELECTIVES**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>CREDITS</b>	<b>WHEN OFFERED</b>	<b>CREDITS COMPLETED</b>
PM 412 ^	Survey Research	3	Fall	
PM 413 #	Field Epidemiology	3	Spring	
PM 414	History of Epidemiology	3	Spring	
PM 416 ^	Epidemiologic Methods	3	Spring	
PM 417	Molecular Epidemiology	3	Spring	
PM 418 >	Cardiovascular Epidemiology	3	Fall	
PM 419	Recruitment & Retention of Human Subject	3	Fall (Alternate)	
PM 422	Qual. of Care & Risk Adjustment	3	Spring	
PM 424 >	Chronic Disease-Epi	3	Spring(Alternate)	
PM 425	Health Promo. & Preventive Med	3	Spring	
PM 430	Psychology in Health Svcs Res	3	Fall	
PM 438	Grantsmanship	3	<b>ONLINE ONLY</b>	
PM 442 ¥	Nutritional Epidemiology	3	Spring	

## MS-CI Education Program Mission Statement

The core courses required are epidemiology, biostatistics, health informatics, cost-effectiveness analysis, design of

DEPARTMENT OF PUBLIC HEALTH SCIENCES  
 MASTER OF SCIENCE CLINICAL INVESTIGATION (MS-CI) PROGRAM  
 OF STUDY SHEET  
 TOTAL CREDITS REQUIRED: 31

Student Name: \_\_\_\_\_ Date Matriculated: \_\_\_\_\_

GENERAL INFORMATION

Electives can be tailored toward individual s research focus and are identified accordingly

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>CREDITS</b>	<b>PROPOSED SEMESTER</b>	<b>CREDITS COMPLETED</b>
Pm 401	Quantitative Methods	3	Fall or Summer	
PM 410	Intro. to Data Mgmt & Analysis	3	Fall or Summer	
PM 415	Principles of Epidemiology	3	Fall	
PM 460	Masters Research Project/Paper	6		
IND 501	Ethics in Prof. Integrity-Clinical	1	Fall	
BST 465	Design of Clinical Trials	3	Spring	
<b>PLUS ONE OF THE FOLLOWING</b>				
PM 413 <b>or</b> PM 416* <b>or</b>	Field Epidemiology  Advanced Epi Methods  *Advanced Biostatistics Course	3	Spring  Spring  Fall or Spring	
<b>OPTIONAL WORKSHOPS AS NEDED</b>				

## MS-CI ELECTIVES

We have identified certain electives into cluster areas to better assist students in choosing electives which focus around their research project topics

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>CREDITS</b>	<b>WHEN OFFERED</b>	<b>CREDITS COMPLETED</b>
PM 412 ^	Survey Research			

# **Master of Science In Epidemiology (MS-EPI)**

Mission Statement

**DEPARTMENT OF PUBLIC HEALTH SCIENCES  
 MASTER OF SCIENCE EPIDEMIOLOGY (MS-EPI)  
 PROGRAM OF STUDY SHEET  
 TOTAL CREDITS REQUIRED: 34**

Student Name: \_\_\_\_\_ Date Matriculated: \_\_\_\_\_

GENERAL INFORMATION

Electives can be tailored toward individual's research focus and are identified accordingly.

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>CREDITS</b>	<b>CREDITS COMPLETED</b>
PM 401 <b>or</b> BST 463	Quantitative Methods in Public Health Research Introduction to Biostatistics	3 3	
PM 410 PM 413 ¥ <b>or</b> BST 465	Intro To Data Mgmt. & Data Analysis Using SAS Field Epidemiology	3	



# **MS-HSRP Program Mission Statement**



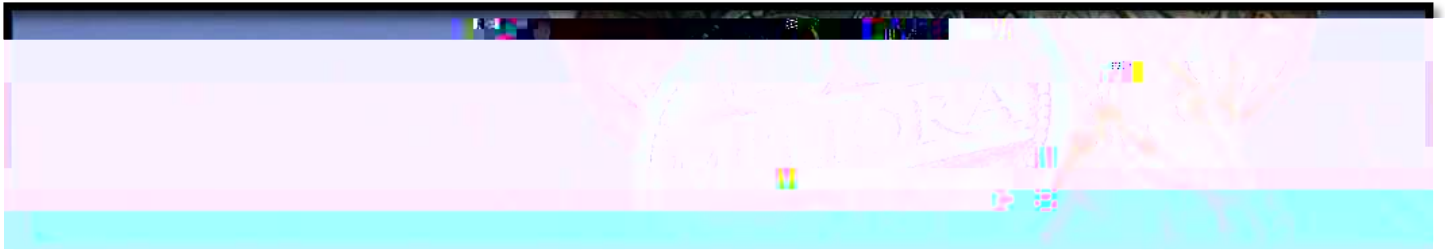
**DEPARTMENT OF PUBLIC HEALTH SCIENCES  
 MASTER OF SCIENCE HEALTH SERVICES RESEARCH & POLICY (MS-HSRP)  
 PROGRAM OF STUDY SHEET  
 TOTAL CREDITS REQUIRED: 34**

**Year One – Fall Term**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>CREDITS</b>	<b>PRE-REQUISITE</b>
Pm 421	Us Health Care System: Financing, Delivery & Performance	3	None
PM 445	Introduction to Health Services Research & Policy	3	None
IND 501	Ethics in Professional Integrity-Clinical	1	None
	<b>Total Credits</b>	<b>7</b>	

**Year One – Spring Term**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>CREDITS</b>	<b>PRE-REQUISITE</b>
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# Masters' Capstone Project

Master of Public Health – (MPH)

Master of Science – Clinical Investigation (MS-CI) & Health Services  
Research & Policy (MS-HSRP)

Master of Science – Epidemiology (MS-EPI)

Guidelines

# MPH THESIS PROJECT GUIDELINES

## IMPORTANT STEPS TOWARDS MPH THESIS PROJECT COMPLETION

Steps	Involvement	Description
1. Feasibility Inquiry	Student & Advisor	Idea discussion
2. General Topic Identification	Student & Advisor	Development of idea into topic
3. Identification of proposed Committee Chair	Student & Advisor	
4. Research Committee Identified	Student, Advisor, proposed Committee Chair and other faculty	Student secures agreement for involvement from suggested committee members, then submits list of committee members & completed committee member sign-off sheet for approval by program director.
5. Complete learning modules 1-3	Student & committee	Student completes leadership course Student reads appropriate chapters in O Leary book and completes checklists Student incorporates dissemination plan into proposal
6. Committee Meeting(s)	Student & committee	Refine topic and research question Plan methods (including dissemination plan) Prepare timeline
7. Schedule Project Proposal Presentation when deemed ready by committee	Student, Committee Chair, Committee Members	Schedule presentation with assistance of Elaine Topeck, Administrative Assistant, <a href="mailto:Elaine_topeck@urmc.rochester.edu">Elaine_topeck@urmc.rochester.edu</a>
9. Announcement of Project Proposal Presentation	Student & Graduate Programs Administrative Assistant	Submission of abstract to approved by the committee to Administrative Assistant one week prior to presentation Notice posted within department and forwarded via email to all PHS faculty and students one week prior to presentation date
10. Project Proposal Presentation	Student, Committee Chair and Members, PHS faculty and students	Student presents
11. Committee Caucus	Student, Committee Chair and Members, other faculty	Review feedback and suggestions based on presentation, adjust project plan if necessary

12. Project	Student, Committee Chair and Members (plus consultants as necessary)	RSRB approval Data collection Data analyses Completion of thesis document (results, discussion, and documentation of the analysis)
13. Committee Meeting(s) (synchronous or asynchronous e.g., via email)	Student, Committee Chair and Members	Review of progress Revisions based as needed
14. First draft of the completed thesis to Committee	Student	March 1 for May graduation June 15 for August graduation November 1 for December graduation
15. Final Project (see guidelines)	Student, Committee Chair and Members, Graduate Programs Administrator	Recording and submission of final project findings presentation Preparation and submission of visual abstract illustrating study findings Submission of final project, project presentation and visual abstract to Committee members for sign off: April 15 for May graduation, August 1 for August graduation, December 15 for December graduation After committee sign-off: Submission of final project to Graduate Programs Administrator & Submission of final abstract with findings to Graduate Programs Administrative Assistant

# MPH Thesis Project Guidelines

## Purpose/Background

A Public Health Sciences (PHS) Capstone Project is a requirement of all Masters programs. It is an opportunity for students to synthesize knowledge and skills gained during their course work. All students are to design, conduct, and write this project under the supervision of a chair and committee.

## Requirements

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Students can start working on their Capstone Project when they are ready in the judgment of their advisor and committee chair. Students will generally be expected to have taken courses covering the methods the student proposes to use in their project. In addition to completing the Capstone project, MPH students are also required to complete four educational modules that are designed to facilitate planning, execution, and reporting of the project. These modules are described below.

## Departmental Specifications for Students

### TOPIC

Consult with your advisor on identification of a topic. Note that MPH research topics have a public health and/or population relevance.

Using completed course assignments to satisfy the capstone requirement, with no additional work, is prohibited.

### Committee Chair

The committee chair has primary responsibility for helping the student plan, propose, complete, and report the results of their capstone project. The committee chair also has primary responsibility for coordinating the efforts of all committee members.

All committee chairs need to complete the chair section of the committee sign off agreement form (see below). MPH committee chairs also have primary responsibility for ensuring MPH students complete the required educational modules and conducting the required assessments. (See below)

To model best practices and avoid future misunderstanding, students and their chair should talk about authorship on any potential publication derived from the capstone project as part of the proposal development process. Plans for deciding manuscript authorship should be made following [the International Committee of Medical Journal Editors \(ICMJE\) guidelines](#):

*All those designated as authors should meet all four of the following criteria for authorship, and all who meet the four criteria should be identified as authors:*

*Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND*

*Drafting the work or revising it critically for important intellectual content; AND*

*Final approval of the version to be published; AND*

*Agreement to be aem,0&; AND*

# MPH Thesis Project Guidelines

## Committee Members

Consult with your advisor and/or your committee chair regarding identification of committee members. Committees shall consist of at least three members: Two members, whose primary faculty appointment is in the Department of Public Health Sciences (PHS) and one whose primary faculty appointment is not in the Department of Public Health Sciences.

Committee members who are not the chair are responsible for helping the student plan, complete, and report the results of their capstone project, particularly in areas of their individual expertise. They are also required to agree to the terms of the committee member agreement form (see below).

All committee members should also be listed as authors on manuscripts reporting the results of the capstone project if they meet the ICMJE criteria for authorship.

Committee members who supply Capstone project data agree to allow the student to use the data to complete their proposed project and to include the student and all committee members on any manuscripts reporting the project that are subsequently published whenever ICMJE authorship criteria are met.

A committee may also include one or more consultants who are asked to help with specific issues identified by the committee.

## Approval

After the committee is chosen, you must submit a description of your proposed committee members, along with the completed committee member agreement form (see below), for review and approval by the Program Director.

## Research Proposal Presentations

Before the actual research project starts, the final research proposal, including the background, study objectives, and methods, is presented publicly. The goal of the presentation is to obtain feedback about the study objectives and proposed methodology from additional faculty and students.

All committee members need to agree that the proposal is ready for presentation before it can be scheduled. At this point, the proposal will consist of the first part of the finished thesis document and include the introduction, background, public health significance (MPH projects only), and a detailed description of the proposed methods. These thesis components typically are 10 to 25 pages long.

Presentations are usually scheduled on Wednesday from 12:00 to 1:00 in 30-minute time slots. The presentation should last no more than 18 minutes to leave ample time for discussion.

To set a date, first verify consent and availability of committee members, then secure a presentation date with Elaine Topeck (see contact information below).



# MPH Thesis Project Guidelines

## Sign off

Committee chair

I have read and agree to serve as committee chair for [student name] Master's thesis subject to the following stipulations:

<input type="checkbox"/>	I will only serve as chair if I am listed as the senior author on all publications resulting from this project.
<input type="checkbox"/>	I will only serve as chair if I am listed as the senior author on at least one publication resulting from this project.
<input type="checkbox"/>	I will serve as chair if I am listed as an author on all publications resulting from this project.
<input type="checkbox"/>	I will serve as chair if I am listed as an author on at least one publication resulting from this project.
<input type="checkbox"/>	Other:

Name:

Date:

### **Other committee member #1**

I have read and agree to serve on the Master's



# MPH Thesis Project Guidelines

**The final thesis document should be a complete record of the capstone project. The following sections should be included:**

1. Title page (see formatting below)
  - a. The cover page is not numbered
  - b. Project title is typed in Title Case following standard rules of English
  - c. Only the Chair is listed on the cover page. Others may be included in the acknowledgements
  - d. Student's Departmental Name
  - e. College/School
  - f. Year of Final Defense (not month or day)
2. Table of contents
3. Abstract
  - a. The final abstract of the project should appear immediately after the table of contents
  - b. The final abstract must include the following header: 1 0 0 1 72.024 574.06

**(Example cover page format)**

Title of Thesis

by

Your Name

Submitted in Partial Fulfillment of the Requirements for the (Master of Science Degree) or (Master of Public Health Degree)

Supervised by

(Chair of Committee **Only**)

Department of Public Health Sciences

School of Medicine and Dentistry

University of Rochester

Rochester, New York

20XX

<b>Module</b>	<b>Requirements</b>
<b>Module 1: Leadership and project management</b>	<p>Chapter quizzes 80% correct, Leadership foundations course at Lynda .com</p> <p>Weber leadership assessment rubric completed</p>
<b>Module 2: Research Project Fundamentals</b>	<p>Checklist for good questions</p> <p>Checklist for elements of a research proposal</p> <p>Checklist for literature review</p> <p>Checklists (Appropriate for proposed study design, chosen and evaluated by committee chair) for:  Assessing practicality  Experimental design  Appropriate data analysis</p>
<b>Module 3 – Knowledge Translation</b>	<p>Incorporation of key questions for knowledge translation listed on pages 15-17 of the Guide to knowledge translation planning at CIHR into the thesis protocol. Primary evaluator: committee chair.</p>
<b>Module 4 – Communication of study results</b>	<p>Creation and presentation of a summary of thesis research findings and implications using an adapted version of the 3 minute thesis format</p> <p>Creation of a visual abstract using the method developed by Ibrahim.</p>

## Overall Learning Objective for Modules

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To provide students with the essential resources and skills they need to plan, conduct, and report a successful MPH thesis capstone project.

Modules 1, 2, and 3 should be completed during the proposal development period.

Module 4 should be completed during the thesis writing and reporting period.

### Module 1: Leadership and Project Management

#### Objective

To provide students with the leadership skills needed to successfully organize and lead an in-depth scholarly research project

#### Activities

[Leadership foundations course at Lynda.com](#)

This course, taught by Britt Andreatta of the Project Management Institute covers the following topics:

- o What is leadership, and when are you leading?
- o Mapping your leadership competencies
- o Dealing with changing scope and stakes
- o Motivating and engaging others
- o Increasing team performance
- o Developing political acumen
- o Creating a culture of trust and integrity
- o Developing resilience

Time required: 1 hour 24 minutes

Students can use free 30 day trial membership if they do not already have a subscription to Lynda.com. (See [appendix](#))

#### Assessments:

1. Completion of all chapter quizzes with at least 80% of questions correct. Students are required to submit screen shots of completed chapter quizzes to the committee chair for evaluation.
2. Assessment by committee members about how well the student functioned as a project leader in preparing, doing, and completing the thesis project using Weber leadership assessment rubric. (see appendix)

# MPH Thesis Project Guidelines

## Module 2: Research Project Fundamentals

### Objective

To help students identify the steps needed to successfully conduct a research project and learn how to accomplish them.

### Activities

#### Required:

[O'Leary, Z: The essential guide to doing your research project. 3rd ed. Sage](#)

Chapters: 1-7, & 16 + additional chapters relevant to study method chosen for the study

This book is available at Amazon, Barnes & Noble, and other online sellers. Cost is about \$10 to rent, \$25 to buy.

#### Optional:

[Review of Tutors quick guide to statistics](#)

Relevant sections for study method chosen for study

### Assessments:

Completion of applicable student resources (available at <https://study.sagepub.com/oleary3e>).

Primary evaluator: committee chair. Secondary evaluators: other committee members.

1. Checklist for good questions
2. Checklist for elements of a research proposal
3. Checklist for literature review
4. Checklists (Appropriate for proposed study design, chosen and evaluated by committee chair) for:
  - a. Assessing practicality
  - b. Experimental design
  - c. Appropriate data analysis

## Module 3 Knowledge Translation

### Objective

To learn how to effectively plan to disseminate results of a research project.

### Activities

- Read pages 15-25 of the [Guide to knowledge translation planning at CIHR](#): Integrated and end-of-grant approaches published by the Canadian Institutes of Health Research

# **MPH Thesis Project Guidelines**

## **Assessment**

Incorporation of key questions for knowledge translation listed on pages 15-17 of the Guide to knowledge translation planning at CIHR into the thesis protocol. Primary evaluator: committee chair. Secondary evaluators: other committee members.

## **Module 4 Communication of study results**

### **Objective**

To learn how to communicate audience-

## **MPH Thesis Project Guidelines**

- Was the thesis topic, key results and research significance and outcomes communicated in language appropriate to a non-specialist audience?
- Did the speaker avoid scientific jargon, explain terminology and provide adequate background information to illustrate points?
- Did the presenter spend adequate time on each element of their presentation - or did they elaborate for too long on one aspect or was the presentation rushed?





# MPH Thesis Project Guidelines

## Visual Abstracts

**COMPONENTS OF AN EFFECTIVE VISUAL ABSTRACT**

- Title:** This usually comes from the title of the article or a key figure. Keep it short and clear.
- Summary of Outcomes:** You will need to spend time thinking about outcomes you want to present. Most articles have many more than 3, so you'll have to prioritize.
- Author, Citation:** Always include the first author's name and year of publication.
- Outcome:** A short phrase that clearly identifies the outcome with the groups being compared. For example, "Decreased Need for Blood Transfusions" is easier to follow than simply "Blood Transfusions." As much as possible, you should use the same prose used in the article for consistency.
- Visual Display of Outcome:** You will want a visual that reflects the outcome you're describing. (More on this below – "Making it Visual.")
- Data of Outcome (Units):** In addition to the visual, you should include the units of the outcome.

# MPH Thesis Project Guidelines

## How to Open a Free 30-day Account at Lynda.com

1. go to [www.lynda.com](http://www.lynda.com)
2. Click on Free trial
3. Enter an email address and password.
4. Select either a basic or premium account in case you decide to keep your account open after the 30 day free trial period.
5. Select either monthly or yearly billing
6. Enter your payment information: paypal or charge card
7. Note the end date of your free trial. If you can cancel any time before this date, you will not be charged. If you leave your account open past this date, your paypal account or credit card will be billed according to the schedule you picked in step 5.
8. Pick at least one skill area of interest
9. Proceed to Leadership course:
  - select leadership from library menu
  - check Britt Andreatta from the author list on the left

## IMPORTANT STEPS TOWARDS CAPSTONE PROJECT COMPLETION

Steps	Involvement	Description
1. Feasibility Inquiry	Student & Advisor	Idea discussion
2. General Topic Identification	Student & Advisor	Development of idea into topic
3. Identification of proposed Committee Chair	Student & Advisor	
4. Research Committee Identified	Student, Advisor, proposed Committee Chair and other faculty	Student secures agreement for involvement from suggested committee members
5. Topic & Committee Member Approval	Student & Program Director	Brief abstract submitted for discussion, review and approval by Program Director
6. Committee Meeting	Student, Committee Chair and Committee Members	Refine topic and research question Layout methods Prepare timeline
7. Project Proposal	Student, Committee Chair and Committee Members	Preparation of proposal with review and feedback from Committee Chair and Members
8. Schedule Project Proposal Presentation	Student, Committee Chair, Committee Members	Schedule presentation with assistance of Elaine Topeck, Administrative Assistant, <a href="mailto:Elaine_topeck@urmc.rochester.edu">Elaine_topeck@urmc.rochester.edu</a>
9. Announcement of Project Proposal Presentation	Student & Graduate Programs Administrative Assistant	Submission of abstract to Administrative Assistant one week prior to presentation Notice posted within department and forwarded via email to all PHS faculty and students one week prior to presentation date
10. Project Proposal Presentation	Student, Committee Chair and Members, PHS faculty and students	Student presents
11. Faculty Caucus	Student, Committee Chair and Members, other faculty	Provided feedback and suggestions based on presentation
12. Project	Student, Committee Chair and Members and Consultants as necessary	RSRB approval Data collection Data analyses Essay write up (draft format)
13. Committee Meeting(s)	Student, Committee Chair and Members	Review of progress and essay draft Reworks based on feedback

14. First draft of thesis to Committee

15. Final Project (see guidelines)

# MS-CI & HSRP Capstone Project Guidelines

## Purpose/Background

A Public Health Sciences (PHS) Capstone Project is a requirement of all Masters programs. It is an opportunity for students to synthesize knowledge and skills gained during their course work. All students are to design, conduct, and write this project under the supervision of a chair and committee.

## Requirements

Students are able to start working on their Capstone Project when they are ready in the judgment of their advisor and committee chair. Students will generally be expected to have taken courses covering the methods the student proposes to use in their project.

## Departmental Specifications for Students

### Topic:

Consult with your advisor on identification of a topic. Note that MPH research topics have a public health and/or population relevance.

Use of course assignments to satisfy the capstone requirement, with no additional work, is prohibited.

### Committee Chair:

Consult with your advisor on identification of a Project Chair.

The Project Chair **must** hold a full-time faculty appointment in PHS.

### Committee Members:

Consult with your advisor and/or your committee chair on identification of committee members.

Committees shall consist of at least three members:

Two members whose primary faculty appointment is in the Department of Public Health Sciences (PHS) and one whose primary faculty appointment is not in the Department of Public Health Sciences.

A committee may also include one or more consultants who are asked to help with specific issues identified by the committee.

# MS-CI & HSRP Capstone Project Guidelines

## Department Specifications for Faculty

### Committee Chair

The committee chair has primary responsibility for helping the student plan, propose, complete, and report the results of their capstone project.

The committee chair also has primary responsibility for coordinating the efforts of all committee members.

The committee chair is also charged with encouraging the student to publish a manuscript based on their capstone project.

To model best practices and avoid future misunderstanding, students and their chair should expect to talk about authorship order on any potential publication derived from the capstone project as part of the proposal development process. Plans for deciding manuscript authorship should be made following [the International Committee of Medical Journal Editors \(ICMJE\) guidelines](#):

*All those designated as authors should meet all four of the following criteria for authorship, and all who meet the four criteria should be identified as authors:*

- *Substantial contributions to the conception or design of the work; or the acquisition, analysis, or interpretation of data for the work; AND*
- *Drafting the work or revising it critically for important intellectual content; AND*
- *Final approval of the version to be published; AND*
- *Agreement to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.*

### Other committee members

Committee members are responsible for helping the student plan, complete, and report the results of their capstone

# MS-CI & HSRP Capstone Project Guidelines

Committee chair

I have read and agree to serve as committee chair for [student name] Master's thesis subject to the following stipulations:

	I will only serve as chair if I am listed as the senior author on all publications resulting from this project.
	I will only serve as chair if I am listed as the senior author on at least one publication resulting from this project.
	I will serve as chair if I am listed as an author on all publications resulting from this project.
	I will serve as chair if I am listed as an author on at least one publication resulting from this project.

# **MS-CI & HSRP Capstone Project Guidelines**

## **Research Proposal Presentations:**

Before the actual research project starts, the final research proposal, including the background, study objectives, and methods, is presented publicly.

The goal of the presentation is to obtain feedback about the study objectives and proposed methodology from additional faculty and students.

Presentations are usually scheduled on Wednesday from 12:00 to 1:00 in 30 minute time slots.

The presentation should last no more than 18 minutes to leave ample time for discussion.

To set a date, first verify availability of committee members, then secure a presentation date with Elaine Topeck (see contact information below).

Send an electronic version of the proposal abstract to Elaine Topeck at least 7 days in advance of scheduled presentation.

The abstract should describe the project and be approximately 250-300 words.

An electronic announcement for the presentation with the abstract will be disseminated to all PHS faculty, staff and students as well as invited guests one week prior to the scheduled presentation. Printed announcements will also be posted.

A reminder announcement will be forwarded the morning of the scheduled presentation.

Students are strongly encouraged to arrange a time with committee members to rehearse the proposal presentation several days in advance of the proposal date.





# MS-CI & HSRP Capstone Project Guidelines

## Thesis Requirements

The final thesis document should be a complete record of the capstone project. The following sections should be included:

1. *Title page (see formatting below)*

# **MS-CI & HSRP Capstone Project Guidelines**

## **Formatting**

All students are required to submit a final copy of their Masters Capstone Project to the Graduate Programs Administrator in an electronic version. In addition they are required to present the final abstract with findings to Elaine Topeck.

## **Text:**

Students should use the following margins: 1 1/2" from the left side and 1 1/4" from the right side, top and bottom, including the page number (you may put the page number on the bottom of the page)

Font size should be 11 - 12; Font type should be Times New Roman; The report should be double-spaced

**(Example cover page format)**

Title of Thesis

by

Your Name

Submitted in Partial Fulfillment of the Requirements for the (Master of Science Degree) or (Master of  
Public Health Degree)

Supervised by

(Chair of Committee **Only**)

Department of Public Health Sciences

School of Medicine and Dentistry

University of Rochester  
Rochester, New York

20XX

# MS-EPI Thesis Project Guidelines

Purpose/Background

## **MS-EPI Thesis Project Guidelines**

Committee members are responsible for helping the student plan, complete, and report the results of their thesis project, particularly in areas of their individual expertise. Committee members who supply thesis project data must agree to allow the student to use the data to complete their proposed project. The student and all committee members must be included on any manuscripts reporting the project that are subsequently published whenever established authorship criteria are met.

### **Approval**

Submit a description of your proposed research topic and proposed committee members for approval by the Program Director. Students may then proceed with the proposed work upon approval of the thesis proposal by the committee. The Program Director should be notified by the committee chair of the proposal approval.

### **Investigations Involving Human Subjects**

Projects involving the use of human subjects (through direct subject contact or through use of subject

# **MS-EPI Thesis Project Guidelines**

## MS-EPI Thesis Project Guidelines

2. Table of contents
3. Abstract
  - a. The final abstract of the project should appear immediately after the table of contents
  - b. The final abstract must include the following headings bolded with a brief description of each: **Background**, **Objective**, **Methods**, **Results** and **Conclusion**.
4. Introduction



# Doctoral Programs

Epidemiology

Health Services Research & Policy



# EPIDEMIOLOGY PhD PROGRAM

Mission Statement

# EPIDEMIOLOGY PhD PROGRAM

## PROGRAM REQUIREMENTS

64 credit hours of formal coursework and 29 credit hours of dissertation research as mandated by the University of Rochester Graduate Studies Program  
 Coursework will focus on methodologic skills while providing adequate training in current epidemiologic content areas  
 Three electives specific to area of research interest

## SUGGESTED SCHEDULE OF CLASSES

YEAR 1 (Fall Semester)		YEAR 1 (Spring Semester)		Total
PM412 Survey Research	(3)	PM413 Field Epidemiology	(3)	
PM415 Principles of Epidemiology	(3)	PM416 Advanced Epi Methods	(3)	
BST463 Intro to Biostatistics	(4)	PM426 Social & Behavioral Medicine	(3)	
PM410 Intro to Data Management	(3)	Elective or Epi Content Course	(3)	
Elective or Epi Content Course	(3)	Elective or Epi Content Course	(3)	
IND503 Ethics	(1)			
Total Semester Credits:	17	Total Semester Credits:	15	32
YEAR 2 (Fall Semester)		YEAR 2 (Spring Semester)		
PM414 History of Epidemiology	(3)	BST465 Clinical Trials	(4)	
BST464 Statistical Methods	(4)	PM472 Measurement & Evaluation	(3)	
BST448 Grant Writing	(3)	Elective or Epi Content Course	(3)	
PM469 Multivariate Stats for Epi	(3)	Elective or Epi Content Course	(3)	
Elective or Epi Content Course	(3)	Elective or Epi Content Course	(3)	
Total Semester Credits:	16	Total Semester Credits:	16	32
			TOTAL RECOMMENDED COURSE CREDITS	64

Epidemiology Content Courses (3 credits each) include:

- PM417 Molecular Epidemiology (spring)
- PM418 Cardiovascular Epidemiology (fall)
- PM424 Chronic Disease Epidemiology (spring)
- PM442 Nutritional Epidemiology (spring)
- PM451 Infectious Disease Epidemiology (spring)
- PM466 Cancer Epidemiology (fall)
- PM470 Environmental and Occupational Epidemiology (fall)

# EPIDEMIOLOGY PhD PROGRAM

## COMPREHENSIVE EXAMINATIONS

A predetermined objective system of grading both the oral and written qualifying examination is established. Student performance in the oral examination is independently scored by each committee member and these scores are averaged to one grade which represents 30% of the overall qualifying examination grade (0-100%). Each written examination is independently scored by two faculty reviewers. If the scores differ by more than 10% or if the two grades result in a differing decision regarding the pass/fail status of the student, that written exam is graded by a third reviewer. The scores are then averaged and this grade represents 70% of the overall grade. The weighted average of the oral and written exams represents the student's final qualifying examination grade. A cut-off score for passing has been established, determining successful completion of the examination. Students will receive formal notification of pass/fail status but will not receive the actual grade. If a student does not pass the exam, he may repeat the examination once following a minimum of six months of remedial preparation.

Written and oral qualifying examinations are required upon completion of a minimum of 55 credit hours of coursework.

Written examination is developed yearly by the Executive Committee of the Program and administered in a two-day classroom setting.

Oral examination is administered by the Executive Committee of the Program.

### Completion (pass) status

Based on scores of written and oral examination

Second qualifying examination opportunity is provided for those who fail

A minimum of six months must elapse since the first examination

No further opportunities will be provided

Any student not successfully completing the examination will be counseled to complete requirements for a Master of Public Health

## TEACHING ASSISTANTSHIPS

E/r those who fail

# EPIDEMIOLOGY PhD PROGRAM

The committee for the final defense will consist of the dissertation committee

- The committee Chairman must be at the Assistant Professor or higher level and must hold a primary appointment in the Division of Epidemiology. Faculty at the Assistant Professor level must have served as a member on the committee of a completed dissertation research project prior to serving as committee Chairman
- Other members will include at least one full-time faculty member of the rank of Assistant Professor or higher who holds a primary appointment in the PHS and one or two outside members who hold a primary appointment in another department
- All other requirements for completion of this process will follow the regulations outlined in the

Award of Degree

- A degree candidate upon meeting all degree requirements will be recommended for the degree at the next meeting of the Board of Trustees
- Degrees are approved by the Board of Trustees at its regular meetings in October, February and May
- Degrees

# HEALTH SERVICES RESEARCH & POLICY PhD PROGRAM

## 1. General Expectations and Requirements

### 1.1 *Timeline and milestones.*

All incoming first-year students are required to participate in Math Camp (see section 1.2) two weeks prior to the start of the Fall Semester. Core courses that comprise the basis of the comprehensive exams are completed in the first two years (see section 1.3); depending on cohort and individual plans, additional courses may be required in the third year. Comprehensive exams are required at the end of the second academic year (see section 2); if the student does not pass this exam, they may retake the exam before the end of the calendar year.

After the comprehensive exams, students typically begin fulfilling their required Research Assistantships (see section 1.6) and Teaching Assistantships (see section 1.7).

After taking the comprehensive exams students are expected to begin formally developing their dissertation proposal (see section 3). As presented in Table 1 below, students are expected (1) to have a proposal topic selected by November of the third year, (2) to have a theory and conceptual framework identified by March of the third year, (3) data identified by June of the third year, and (4) methods identified by September of the fourth year. Progress toward, and completion of, each milestone is to be



# HEALTH SERVICES RESEARCH & POLICY PhD PROGRAM

## 1.4 *Financial Support*

Students are provided with a fellowship from the Office for Graduate Education and Postdoctoral Affairs that covers a stipend and health fee for 20 months. If used continuously, this funding continues through April of the second year. However, if the student obtains a paid internship during their first<sup>st</sup> does not extend into or beyond July of the second year).

completed.

Research Assistantship, or as otherwise approved by the Associate Dean of Graduate Education.

## 1.5 *Seminars and Workshops*

Students are expected to attend workshops, seminars, and presentations listed below and as required by the Director:

RESEARCH WORKSHOPS, a bi-weekly workshop (PM 428) at which students present their work and ideas.

DISSERTATION SEMINARS, students who have not yet proposed their doctoral thesis are required to attend monthly dissertation seminars (during the academic year). These are informal, but required gatherings, designed to educate students with regard to the dissertation process, teach students how to identify research areas, how to focus on the appropriate research questions, how to choose a committee and to discuss other dissertation-related issues.

SPONSORED PRESENTATIONS. Division of Health Policy and Outcomes Research sponsored presentations.

JOB CANDIDATE TALKS. Presentations by faculty job candidates in the Division.

HSRP DOCTORAL STUDENT PROPOSALS AND DEFENSES HSRP doctoral students dissertation proposals and dissertation defenses.

1.6 *Research Assistantships.* , students are required to complete 28 months of Research Assistantships. Research assistantships are based within the University of Rochester; however, the Director can approve community-based research assistantships if the assistantship is judged to provide an educational opportunity for the student. Assistantships can be no more than 20 hours per week appointments.

1.7 *Teaching Assistantships.* Students are required to gain experience as teaching assistants for two courses. Except by permission of the Director, students must have passed their comprehensive exams before becoming a teaching assistant. Students should consult with their advisor to determine appropriate timing for completing the TA requirement: a teaching assistantships should be timed so as not to postpone progress toward the dissertation proposal.

# HEALTH SERVICES RESEARCH & POLICY PhD PROGRAM

## 2. Comprehensive Exams

Except as otherwi





# HEALTH SERVICES RESEARCH & POLICY PhD PROGRAM

Any student who has not proposed by January of 30<sup>th</sup> of their fourth year will be recommended to the Associate Dean of Graduate Education for dismissal from the program unless an extension is granted per section 3.2 below. Students are expected to defend their dissertation within two years of successfully passing the dissertation proposal.

## 3.2 *Extensions.*

3.2.1 Automatic extensions. Students will be granted extensions to the timeline as per University policy for prior medical leave or maternity leave.

3.2.2 Technical extensions. Extensions due to technical difficulties not due to student progress (e.g. difficulty scheduling proposal dates due to committee schedules, unexpected legitimate absences) may be granted at the discretion of the PhD Program Director.

3.2.3 Progress extensions. Students who do not propose by January 30<sup>th</sup> and who do not obtain Automatic or Technical extensions may petition the Director for an extension. The petition must include (1) the request for extension, (2) a summary of previous progress, (3) a description of current status, (4) the justification for extension, (5) a plan for completing the proposal, and (6) the endorsement of the proposed plan by the chair of the dissertati

Director and the Progress Review Committee, the Director will take one of two actions: (1) notify the student that the petition for extension is granted and notify the student of conditions for continuing in the program, or (2) recommend dismissal of the student to the URSMD Associate Dean of Graduate Education.

## 3.3 *The dissertation proposal*

Unless otherwise approved by the dissertation committee, the dissertation proposal should contain seven essential components:

1. *Provide an introduction that motivates the study:* What are the basic questions, why are they important, and how can they be answered? This is a short version of the introduction to the dissertation.
2. *Sufficiently summarize the synthesis and analysis of the current literature bearing upon the thesis topic.* Essentially this is a version of the background section for the thesis. What is means is up to the committee, but this section should leave little doubt regarding the literature is not likely to render the thesis topic moot.
3. *Carefully develop and articulate the theory, model, and hypotheses or questions.* This of course is a preliminary version of the corresponding sections in the thesis. This section must be sufficiently developed to convince the committee that it is correct, or at least that any uncertainty about it will not compromise the dissertation. A failing in theory or modeling and their connection to the hypotheses could well derail the dissertation effort later if it is undetected at an early stage. Essentially, this section provides the explanation of the phenomenon being studied and frames the investigation.

# HEALTH SERVICES RESEARCH & POLICY PhD PROGRAM

4. *Describe the key variables and the data collection (or generation) process.* This section must be sufficient to assure the committee that the data properly correspond to the requirements for testing and estimation, and that the data generation process is sufficient to support the analysis.
5. *Describe the methods of analysis with supporting argument why the methods are appropriate.* This section must be sufficient to assure the committee that there exists an analytical method appropriate to the data generating process and data to facilitate the required tests or estimation.
6. *Discuss limitations.* This section should identify any limitations can compromise achieving the study goals. Each limitation should be accompanied by a discussion of why it is not fatal and why the study remains sufficiently informative to warrant its status as a thesis topic.
7. *Provide a conclusion* that discusses some potential outcomes and briefly summarizes the proposed study and its importance.

The structure of the proposal is determined by the dissertation committee: common structures are a document following the sections above, or a document in the form of an NIH research grant application, with modifications as indicated by the committee.

## 3.4 Qualifying Exam

The dissertation proposal constitutes the University required Qualifying Exam. The exam is a closed door oral exam at which the dissertation committee and student are in attendance. Prior to the exam (typically by 3 to 4 weeks), the student must provide the committee with an acceptable proposal document as outlined in section 3.3 above. The committee must meet and determine that the student is ready to propose prior to formally scheduling the exam through the Office for Graduate Education and Postdoctoral Affairs.

The qualifying exam must be immediately preceded by a public presentation of the proposed dissertation work by the student.

## 4. Dissertation

### 4.1 The dissertation process objectives.

The goal of the dissertation process is to train the student to, and provide evidence to the dissertation committee that the candidate can, operate at the level of a PhD in both thought and performance. In Health Services Research this requires that the student, through the dissertation process and writing of the final document itself, learn and exhibit the following ten capabilities:

1. to synthesize and analyze the current state of knowledge regarding a specific area of interest;
2. to identify an important gap in current knowledge and a research question or phenomenon to be explained;
3. to clearly formulate a theory-based conceptual framework or explanation that implies testable consequences or interpretable parameters for estimation;
4. to develop a model that connects the conceptual framework/explanation to data such that implied hypotheses are testable or implied quantities can be estimated;
5. to identify the required type of data and measurements;



# HEALTH SERVICES RESEARCH & POLICY PhD PROGRAM

## 4.3 *The structure of the dissertation.*

The Health Services Research and Policy PhD dissertation may be structured in the traditional dissertation format or in the three-paper format described below. The student must select the format

A thesis is to be written for non-specialized scientists. Specifically, every member of the thesis examination committee must be able to read and understand the document as a whole, and the details of each section must be understandable to at least one committee member with the expertise to verify its content is sound. Specialist terms need to be explained or avoided. It is written in English with correct spelling and grammar. It is not the job of the committee to proof-read the text. Having the text of the thesis corrected and edited for spelling and grammar by a second person is acceptable and recommended. A committee member can refuse to accept a thesis with excessive grammatical or graphical errors. There is no formal minimum or maximum length.

This section is meant to be a supplement to the general guidelines of the University of Rochester for preparation of a traditional thesis (THE PREPARATION OF DOCTORAL THESES: A MANUAL FOR GRADUATE STUDENTS), which can be found at the website:

<http://www.rochester.edu/Theses/ThesesManual.pdf>, and which governs all theses at this university. This guideline does not supersede the general guidelines.

of the thesis in terms of general formatting and required parts such as Title Page, Abstract, etc. See The Preparation of Doctoral Theses manual for specifications regarding these components. The graduate

traditional or a three-paper structure as described in the following sections

### 4.3.1 Traditional format

Because HSRP theses topics and methods vary greatly, the thesis document may vary from the guidelines presented below as is required to facilitate coherent presentation. However, notwithstanding such exceptions, the structure and content provided below is the standard for a traditional HSRP thesis at the University of Rochester.

**A traditionally formatted Health Services Research and Policy thesis will typically contain five chapters:**

1. Introduction, which introduces the research question, provides the requisite arguments to establish its importance as a health services research topic, and briefly summarizes the research approach to the thesis.
2. Background, which provides the information necessary to understanding what is currently known and what needs to be known regarding the research question. This chapter also describes underlying theories, the development of explanations, and the description of substantive parameters of interest and any substantive hypotheses.
3. Methods, which details the study design, data, and analytical methods that were used in the research. This chapter will also provide the identification of structural parameters of interest with empirical parameters to be estimated and the translation of substantive hypotheses into empirical hypotheses. Results of specification tests used to determine the statistically adequate model used to empirically address hypotheses or identify parameters can be included in this section.
4. Results, which reports the empirical results of applying the methods to address the research question.

# HEALTH SERVICES RESEARCH & POLICY PhD PROGRAM

5. Discussion and conclusion, which briefly outlines the dissertation topic, and then provides an interpretation of the results in light of the research question, integrates the results and interpretation with existing literature, discusses any limitations of the methods in addressing the research question, and provides a concluding section that addresses the student's broad scientific conclusions, broad policy implications, and future research.

## 4.3.2 The three-paper format

**The three-paper format must meet the following requirements:**

1. The dissertation must form a coherent body of work addressing a single research topic.
2. Each paper must be distinct; therefore, each paper must address different questions, perspectives (e.g. phenomenological/theoretical/conceptual frameworks, or methodological approaches), or goals (e.g. identification of predictors, risk factors and moderators, estimation of effects, or testing explanations) regarding the research topic. The purpose and scope of each paper should be presented as part of the proposal and accepted by the committee at that time.
3. The dissertation must have four sections, each may comprise multiple chapters:
  - a. An introductory section that presents the research topic with general background, the general theoretical/conceptual framework (if a general framework does not cover all papers, the conceptual framework section within each paper may be acceptable at the discretion of the committee), and the purpose, scope, and justification for each specific aim and paper.
  - b. A results section that comprises three chapters, one for each paper. Each paper must be deemed by the dissertation committee to be of publishable quality and formatted for specific peer-reviewed journals.
  - c. A concluding section that integrates the findings of the three papers and discusses implications.
  - d. An appendix section that includes any additional elaboration or details related to each paper required to support the level of training for a PhD dissertation project.
  - e. All content and formatting requirements of the Graduate School must be followed.

