Faculty

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By appointment

Course Overview

This course is designed to provide DrPH students with grounding in basic quantitative and qualitative research techniques used in health services research. These techniques will help to build pragmatic skills the students will need for their next steps in planning and executing a dissertation. While some of the topics covered will be a review from previous master’s programs that the students have completed prior to entering the DrPH program, this course will provide a refresher as they prepare for undertaking a dissertation. Specific topics will include types of research designs, measurement scales and coding nomenclatures, analytical techniques for quantitative data, research techniques for primary data collection, research opportunities with secondary data, and qualitative research methods.
# Learning Objectives

*By the end of this course, participants will:*

<table>
<thead>
<tr>
<th>Course Objectives</th>
<th>CEPH Competencies</th>
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<tbody>
<tr>
<td><strong>1</strong> Use appropriate research terminology to describe a study design, and understand the purposes, advantages and disadvantages of each. Understand the steps necessary for research that requires primary data collection and analysis. Understand basic concepts of qualitative research and how it is conducted.</td>
<td>Explain qualitative, quantitative, mixed methods and policy analysis research and evaluation methods to address health issues at multiple (individual, group, organization, community and population) levels</td>
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<tr>
<td><strong>2</strong> Learn how to move from a research topic, to formulate a research question, and translate into a hypothesis.</td>
<td>Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue.</td>
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<tr>
<td><strong>3</strong> Understand how variables are coded in health care research, and how categorical and continuous variables are used.</td>
<td>Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue.</td>
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<tr>
<td><strong>4</strong> Recognize basic statistical techniques appropriate for different types of variables, and how these are used to measure association and causality.</td>
<td>Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue.</td>
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<tr>
<td><strong>5</strong> Recognize available sources of secondary data and learn how to use them.</td>
<td>Design a qualitative, quantitative, mixed methods, policy analysis or evaluation project to address a public health issue.</td>
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HPM 953 has its own website on SAKAI. *(See https://sakai.unc.edu/portal)*

**Required Texts**


**Guest Lecturers**

Sarah Birken, PhD  
Assistant Professor, Health Policy and Management, UNC

Byron Powell, PhD  
Assistant Professor, Health Policy and Management, UNC

Karine Dubè, DrPH  
Assistant Research Professor, Public Health Leadership Program, UNC

Bryan Weiner, PhD, University of Washington  
[Recorded session – link on Sakai]
### Articles and Readings


Patient questionnaire – The Effect of Patient and Physician Education on HIV Screening, administered by the General Internal Medicine Fellows, UNC Faculty Development Program, 2007. (Print copy from SAKAI for class discussion.) Posted on SAKAI.

Requirements and Expectations

Class Participation
Each student is expected to attend all class sessions on adobe connect, with an audio and visual connection. This is essential for class participation. Each session will focus on a topic or research method. Assigned readings concerning the topic will be from the textbook and one or more other sources. Class time will be spent discussing the topic and relating it to the readings. This will include limited lecture, with a predominate focus on group discussion. Students should come to class prepared to discuss the topics as they relate to the readings. Most individual assignments will relate to the student’s dissertation topic and development of the components of a dissertation proposal.

Evaluation Method

Grade Components
Please note assignment due dates. Late assignments will have points deducted.
### Component % of Grade

<table>
<thead>
<tr>
<th>Component</th>
<th>% of Grade</th>
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<tbody>
<tr>
<td>Class attendance and participation</td>
<td>10%</td>
</tr>
<tr>
<td>Research project – part 1</td>
<td>30%</td>
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<tr>
<td>Research project – part 2</td>
<td>30%</td>
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<tr>
<td>Research project – part 3</td>
<td>30%</td>
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<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
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**Grading Scale**

- 90 or above (H)
- 75 to 89 (P)
- 60 to 74 (L)
- Below 60 (F)

**Evaluation Criteria**

You are expected to complete the readings for each session, attend all class sessions and participate in the discussions. If you are unable to attend a session please notify the instructor.

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### Recognizing, Valuing, and Encouraging Diversity

The principles of academic honesty, integrity, and responsible citizenship govern the performance of all academic work and student conduct at the University as they have during the long life of this institution. Your acceptance of enrollment in the University presupposes a commitment to the principles embodied in the Code of Student Conduct and a respect for this most significant Carolina tradition. Your reward is in the practice of these principles.

Your participation in this course comes with the expectation that your work will be completed in full observance of the Honor Code. Academic dishonesty in any form is unacceptable, because any breach in academic integrity, however small, strikes destructively at the University's life and work.

If you have any questions about your responsibility or the responsibility of faculty members under the Honor Code, please consult with someone in either the Office of the Student Attorney General (966-4084) or the Office of the Dean of Students (966-4042).

Read “The Instrument of Student Judicial Governance” ([http://instrument.unc.edu](http://instrument.unc.edu)).

Note: In the past, we have had students who have not properly cited when they used other people’s work (e.g., using direct passages from other studies without using quotations, or paraphrasing other people’s work without giving proper attribution). We strongly encourage students to review the UNC Health Sciences Library information on plagiarism and citing...
Secondary data sources: HCUPnet and MEPSnet

Research questions concerning the utilization and cost of health care services in this country can often be answered without launching an entirely new research endeavor. The Agency for Health Research and Quality (AHRQ) has developed sophisticated web tools for answering specific questions using data from state hospital discharge databases and data from the ongoing Medical Expenditure Panel Surveys. This information is often useful for estimates on the incidence of disease, the numbers of cases of specific procedures, and the cost of surgical procedures. The purpose of the session is to familiarize the students with AHRQ web tools and demonstrate their use.

Session Learning Objectives:

- What is the source of HCUP data and what kinds of information does HCUPnet contain
- What is the source of MEPS data and what is included in the MEPSnet system
- Using a set of research questions students will learn how to navigate the HCUPnet and MEPSnet web tools and understand their capabilities for future research use

Readings/Assignments

Bring your laptop to class!

Session 2: Study design issues

Recognizing basic study designs that are used in research and understanding their inherent strengths and weaknesses is important for several reasons. First, when one is reading reports of research in the literature, understanding characteristics of a study design helps to interpret the study. Second, when one is planning to conduct research, including dissertation research, the choice of a research method is a key consideration to successful research.
| Session Learning Objectives: | In this session students will review the basic study designs used in research, including:  
- observational vs. experimental  
- descriptive vs. analytical  
- prevalence or incidence  
- cross sectional  
- case – control  
- cohort analysis  
- before – after analysis within a cohort  
- randomized control trials (RCTs)  
- prospective vs. retrospective design  
Students will learn the differences in these methods, what designs are preferable for different research questions, and advantages and limitations of each. |
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<td><strong>By email notification to instructor, identify research project partner(s)</strong></td>
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| **FEB. 6 5:35-7:00PM** | **SESSION 3: Research requiring primary data collection**  
Questions that arise in the work place or practice setting concerning health care program effectiveness often call for the collection of new data. In collecting this new information it is important to follow a rigorous research process to ensure that the results are valid and meaningful. This session will provide an overview of what steps are involved in primary data collection. |
| Session Learning Objectives: | Students will be introduced to the following steps in data collection and given resources where further assistance can be found:  
- How to develop an appropriate research question  
- Hypothesis development  
- Questionnaire design or chart review process  
- Pre-testing survey instruments  
- Interviewer training |
- Consideration of various methods of data collection
- Study protocol
- Data management and analysis

### Readings/Assignments
Materials from CCTOP: patient questionnaire, interviewer training manual, operations manual. (These materials will be loaded to SAKAI)

Begin work on research project – part 1, as detailed in research project document on SAKAI.

#### FEB. 13 4:00-5:25PM
**SESSION 4: Research using secondary data**

There is an increasing availability of large, secondary health care databases for conducting research. With the opportunity to use these databases come challenges in using complex data that were collected for another purpose. This session will focus on what databases are available and determining if the database is appropriate for your research question. The purpose of this session is to sensitize students to the potential of this type of research in their own organizations and/or for their dissertation, and key issues to consider when using these databases.

### Session Learning Objectives:
This session will cover the following topics relevant to secondary databases:
- What are secondary/administrative databases, and what is their origin
- What are HIPAA regulations regarding the use of protected health information
- What are data use agreements, and how are they used
- A 6 step process for using secondary databases in a responsible way
- Association and causality

### Readings/Assignment
- Bradford Hill criteria for causation – this will be posted on Sakai

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<tr>
<th>Date</th>
<th>Time</th>
<th>Session</th>
<th>Description</th>
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<tbody>
<tr>
<td>FEB 20</td>
<td>4:00-5:25 PM</td>
<td><strong>SESSION 5: Research Project – part 1</strong></td>
<td>Each student team will have 8 minutes to present the first part of their research project.</td>
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<td>Session Learning Objectives:</td>
<td>To present the beginning steps of a research proposal, and answer questions from other students.</td>
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<td>Readings/Assignments</td>
<td>Complete research project – part 1 – written report. Prepare a power point presentation of 6-8 slides.</td>
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<td>Mar 6</td>
<td>5:35-7:00</td>
<td><strong>Session 6: Guest speaker – Karine Dubè, DrPH (cohort 9)</strong></td>
<td>This session is an opportunity to hear how a former DrPH student conducted dissertation research using primary data collection. She will present key elements of her dissertation proposal, and will allow ample time for questions.</td>
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<td>Session Learning Objectives:</td>
<td>The following topics will be included:</td>
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<td>• How to develop a research question and hypothesis</td>
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<td>• The importance of the literature review</td>
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<td>• How to choose data collection methods</td>
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<td>• How to carry out the data collection</td>
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<td>• Data analysis and results</td>
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<td>• Plan for change</td>
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<td>Assignments</td>
<td>Begin work on research project – part 2</td>
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<td>March 27</td>
<td>4:00-5:25pm</td>
<td><strong>Session 7: Analytical techniques used in quantitative research</strong></td>
<td>The purpose of this session is to continue discussion of key concepts used in research, particularly around data concepts used in quantitative research. While this is not a session in how to do statistics, our focus is understanding characteristics of variables and what statistical tests are appropriate for various types of data.</td>
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<td>Session Learning Objectives</td>
<td>The following topics will be included:</td>
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<td>• Independent and dependent variables</td>
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<td>• Types of variables: nominal, ordinal, categorical, and continuous</td>
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<td>• Precision and accuracy of measurement</td>
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<td>• Validity and reliability, error, bias, and confounding</td>
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<td>• Descriptive statistics including rates, ratios, and proportions</td>
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<td>• Measurement techniques used for prescription drugs</td>
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<td>• Coding nomenclatures</td>
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<td>• Measurement techniques for strength of association or causality</td>
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<td>• How to use the Garrett handout to determine appropriate statistical techniques</td>
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<td>April 3 4:00-5:25pm</td>
<td>Session 8 – Research project – part 2  Each student team will have 8 minutes to present the second part of their research project.</td>
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<td>Session Learning Objective</td>
<td>To present the next steps of a research proposal, and answer questions from other students.</td>
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<td>Assignment</td>
<td>Complete research project - part 2 written report. Prepare power point presentation with 6-8 slides.</td>
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<tr>
<th>April 10 No online session</th>
<th>Session 9 – Analytical techniques used in qualitative research  [Recorded session by Dr. Bryan Weiner]</th>
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| Session Learning Objectives | - What are the general strategies for analyzing qualitative data?  
- What are the specific analytic techniques?  
- How do you draw and verify conclusions? |

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<tr>
<th>April 17 4:00-5:25</th>
<th>Session 10 – Introduction to qualitative research methods  Guest lecturer: Sarah Birken, PhD</th>
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</table>
| Session Learning Objectives | - How qualitative research is defined  
- What are the similarities and differences between qualitative and quantitative research  
- What are common approaches and uses of qualitative research methods in health services research |


### April 24

**5:35-7:00pm**

**Session 11 – Applications of qualitative methods**

An HPM faculty member will share his research that demonstrates the use of web based surveys and the Delphi method.

Guest lecturer: Byron Powell, PhD

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<th>Learning Objectives</th>
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<tr>
<td>Understand the ERIC (Expert Recommendations for Implementing Change)</td>
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<tr>
<td>How qualitative research is being used to further the field of implementation science</td>
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**Readings/Assignments**


### May xx

**London**

**Session 12 – Research projects – part 3 presentations**

To present the third part of the research project using a qualitative method.

**Readings/Assignment**

Complete research project - part 3 - written report and prepare a power point presentation.