SCHOOL OF MEDICINE
VANDERBILT UNIVERSITY

Advanced Program and Policy Evaluation

Fall 2022

Course Code: PUBH 8539
Days: Wednesdays
Times: 8:45-10:45 am
Location: 2525 West End, 1250 Conference Room
Credit hours: 2.0

Primary Instructor(s): John Graves, Ph.D., Associate Professor, Department of Health Policy

Office Hours: By Appointment
Office Location: 2525 West End Ave. 12th Floor

Introduction

This course provides an overview of advanced quantitative evaluation methods for program and policy evaluation. The course objective is to provide students with an opportunity to become familiar with key concepts, tools and ideas that can support them in assessing the quality of existing studies, develop their own research proposals, and ultimately conduct more rigorous research. The course is structured for PhD students and faculty with a background in basic training in econometrics, program evaluation, and the social sciences. Areas of emphasis include: "proof by simulation," panel data methods, and recent advances in control-group designs (e.g., differences-in-differences). Students will learn to develop and enhance designs for research and research proposals, and will critically examine published research.

Course Learning Objectives

Upon successfully completing this class, students will be able to:

1. Gain familiarity with common evaluation research designs and approaches.
2. Clearly articulate and understand the difference between sampling, design, and analysis.
3. Demonstrate an ability to thoughtfully apply study designs through applied case studies, and by critiquing published research and research proposals.

Teaching Methods

Course content will rely on brief lectures, small group discussions and "live" analytic case studies designed to familiarize students with how to prepare, design and execute the research designs covered in lectures and readings.

Student Assessment

40% of student assessment is based on direct observation and engagement. This includes questions and responses to instructor questions during Q&A, as well as focused engagement with small groups and with the instructor when working through the case studies.

The remaining 60% of student assessment is based on two assignments:

1. 20%: A written critique of a working paper that applies course methods to a current research topic. Choice of the working paper is up to each student, through a useful source of early stage working papers that use many of the methods covered is the NBER working paper series, or working papers submitted through medRxiv.org. Students should structure their critique as if they were asked to serve as a peer reviewer for the study they choose.

2. 40%: A written methods section for a proposed research study the student aims to undertake during their dissertation. There are two choices for the structure of this assignment: (1) as an "Approach" section for an NIH/AHRQ grant application; or (2) as a methods section for a PhD dissertation proposal document. Alternative structures may be pursued after consultation with Dr. Graves, and with his permission.

Evaluation and Grading

Course grades will be determined based on the following School of Medicine Grading Scale (see VUSM Course Catalog, pg. 56):

A+ = 4.0	B+ = 3.3	C+ = 2.3
A = 4.0	B = 3.0	C = 2.0
A - = 3.7	B - = 2.7	C - = 1.7 (no earned hours/quality hours and quality points only)

F= No Credit

Course evaluations: The MPH program is dedicated to providing a high-quality curricular experience. Students are required to complete course evaluations for quality enhancement purposes. No grades will be released until all evaluations have been completed.

Students are expected to complete all required reading and to view and complete assignments prior to each individual course session. Class and User Progress tools within Brightspace are available for both students and instructors to track progress of assignments and may be used in formative assessments.

Academic Integrity

All students are required to adhere to the Vanderbilt University Honor Code in preparation and submission of assignments and exams. Students can acquaint themselves with the Honor System through the Vanderbilt University Student Handbook and the School of Medicine Student Handbook. Graduate and professional students may also obtain information from the office of the dean of their respective school or college.

Any incident involving plagiarism will result in failure of the course.

Absences

This class adopts the following policy on student absences:

- **2 credit hour courses: 1-2 absences may be permitted with prior instructor notification and approval. Course instructor may determine if additional absences will be allowed.**

Students with Disabilities

Accommodations for students with disabilities will be arranged with appropriate documentation from the Center for Opportunity Development. Students with learning disabilities may be approved for alternative test arrangements through the Psychological and Testing Center.

Laptops and Cell Phones

Laptops may be used for course purposes only such as taking notes, identifying supplemental information pertinent to a discussion or for accessing class readings. Cellphones should be turned off during the entire class session, unless the course director indicates otherwise. As adult learners, it is expected that students will refrain from using electronic devices for non-course-related activities.

Course Sessions and Readings

The following is a **TENTATIVE** list of the topic modules and readings. An updated list of required and optional readings for each session will be provided and posted on Brightspace.

Session 1: August 24

Description: *Introduction; Simulation as a Guide for Study Design, Estimation, and Inference.* Students will be introduced to the concepts of simulation and its role in the design and execution of a policy evaluation.

Optional Reading for After Today:

Chapter 15 (Simulation) in Huntington-Klein

R for Graduate Students by Y. Wendy Huynh

Session 2: September 7.

Description: *Panel Data Methods 1.* Students will learn about panel data methods for policy and program evaluation. Content will focus on fixed, random and correlated random effects estimation.

Readings for Today:

Chapter 8 (Panel Data) in Cunningham.

Chapter 16 (Fixed Effects) in Huntington-Klein

Session 3: September 14

Description: *Panel Data IIIa: Difference-in-Differences and Event Studies Revisited.*

Readings for Today:

Chapter 9 (Difference-in-Differences) in Cunningham

Chapter 18 (Difference-in-Differences) in Huntington-Klein

Session 4: September 21

Description: *Panel Data IIIb: Difference-in-Differences and Event Studies Revisited.*

Roth, Jonathan, et al. "What's Trending in Difference-in-Differences? A Synthesis of the Recent Econometrics Literature." *arXiv preprint arXiv:2201.01194* (2022).

Callaway and Sant'anna DD estimator by Scott Cunningham

Session 5: September 28

Description: *Nonlinear Differences-in-Differences and Functional Form Considerations*.

Readings for Today:

Graves, J. A., Fry, C., McWilliams, J. M., & Hatfield, L. A. (2022). Difference-in-differences for categorical outcomes. *Health Services Research*.

Session 6: October 5

Description: *Interrupted Time Series vs. Differences-in-Differences* (Guest Lecture by Dr. Carrie Fry)

Readings for Today:

Fry, Carrie E., and Laura A. Hatfield. "Birds of a feather flock together: Comparing controlled pre–post designs." *Health Services Research* 56.5 (2021): 942-952.

October 12: NO CLASS

October 19: NO CLASS

Session 7: October 26

Description: *Statistical Inference for Policy Evaluation*. Students will be exposed to the theory, design and execution of statistical inference for policy evaluation.

Readings for Today:

Rokicki, Slawa, et al. "Inference with difference-in-differences with a small number of groups." *Medical Care* 56.1 (2018): 97-105.

Abadie, Alberto, et al. *When should you adjust standard errors for clustering?*. No. w24003. National Bureau of Economic Research, 2017. July 2022 version.

Session 8: November 2

Description: *Synthetic Control Methods*.

Readings for Today:

Chapter 10 (Synthetic Control) in Cunningham

Abadie, Alberto. "Using synthetic controls: Feasibility, data requirements, and methodological aspects." *Journal of Economic Literature* 59.2 (2021): 391-425.

Session 9: November 9

Description: *Partial Identification Methods: Treatment Effect Bounds*.

Readings for Today: TBD

Session 10: November 16

Description: *Quantile Treatment Effects and Changes-in-Changes*.

Readings for Today:

Brantly Calloway, Quantile Treatment Effects in R: The qte Package

Session 11: December 1

Description: *Research Project Organization, Execution and Workflows: Best Practices*

Readings for Today: TBD

Session 12: December 8

Description: Student Methods Presentations