



Indiana University  
School of Public Health-Bloomington  
Department of Applied Health Science

**SPH B702:**  
**Advanced Evaluation Research**  
**in Public Health**

Fall 2023 (Section 6499)  
Time: Hybrid or Thursday 3-5:30pm  
Classroom: Online or PV (SPEA) 270

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## **COURSE SYLLABUS**

**Instructor:** Hsien-Chang Lin, PhD, Professor  
E-mail: [linhsi@indiana.edu](mailto:linhsi@indiana.edu)  
Office: 809 E. 9<sup>th</sup> Street, Room 106  
Office Hours: by appointment (via Zoom <https://iu.zoom.us/j/5548706761>)

Contacting the instructor:

- **Email:** preferably using your IU email account.
- **Canvas Message**

**Teaching Assistant:** Meng Yang, PhD candidate in Health Behavior  
Email: [my10@iu.edu](mailto:my10@iu.edu)  
Office Hours: by appointment

**Course Description:** This course provides students with advanced knowledge of and skills in evaluation research in public health programs, policies and interventions. Topics include conceptualization, literature review, research design, conceptual/theoretical framework, measurement, data collection and management, advanced statistical methods, and manuscript writing. This course will also focus on practical perspectives of program evaluation. The instructor will also demonstrate how to use the statistical software Stata® version 16 to carry out statistical analysis for evaluation research. The instructor will work with every student on a final term project throughout the semester to evaluate a real-life public health intervention.

**Prerequisites:**

1. Intermediate statistics.
2. Restricted to doctoral students.
3. Recommended for 2<sup>nd</sup>-year or other senior doctoral students.
4. Permission of instructor is required.

**Course Competencies:** This course facilitates the attainment of the following competencies for students:

1. Develop research questions that address gaps in public health knowledge.
2. Design rigorous health behavior research following acceptable standards and practices.
3. Apply ethical principles in the design of health behavior research.

**Course Objectives:**

1. Students will learn both the concepts and techniques for evaluating public health programs, policies and interventions.
2. Students will learn how to conduct, report, and publish evaluation research.

**Course Materials:**

**1. Required Texts:**

No specific textbook. All required readings will be put on the Canvas course website.

**2. Recommended Texts:**

- (a) Devlin AS. *The Research Experience: Planning, Conducting, and Reporting Research*. Thousand Oaks, CA: Sage Publications, Inc. 2018.
- (b) Thyer BA. *Quasi-Experimental Research Designs*. New York, NY: Oxford University Press. 2012.
- (c) Kohler U, Kreuter F. *Data Analysis Using Stata*. 3<sup>rd</sup> ed. College Station, TX: Stata Press. 2012.

**Course Requirements and Grading:**

The final course grade will be based on performance on term project, six reading reflections, and quizzes:

Term project:	68%	<b>Grading Scheme:</b>			
Reading reflection:	24%	A+ 97-100%	B+ 87-89%	C+ 77-79%	D+ 67-69%
Quizzes:	8%	A 93-96%	B 83-86%	C 73-76%	D 63-66%
<b>Total:</b>	<b>100%</b>	A- 90-92%	B- 80-82%	C- 70-72%	D- 60-62%
					F below 60%

**1. Term Project (68%):**

Each student will conduct a project evaluating a real-life public health program. The instructor will work with each student throughout the semester to carry out the final product.

Each student will submit five intermediate progress reports and a final term paper. The final product will be orally presented at the end of this course. Details of the intermediate and final products will be posted on the Canvas course site.

The term project accounts 68% of the final course grade and is composed of the following items:

Progress report (I)-(V):	7% each
Final presentation:	8%
Final term paper:	25%
<b>Total:</b>	<b>68%</b>

All term project assignments must be submitted via "Assignments" on Canvas. Each assignment is due at **11pm** on **Wednesday**. 20% of points per day will automatically be deducted from assignments hand in late and without prior approval. This term project is to evaluate students' fulfillment of competencies 1-3 at the end of the semester.

## **2. Reading Reflection (24%):**

Students will write reflections on the assigned readings (required or optional ones) during **Sections 1-5** (six times in total). The instructor will provide a list of questions in advance for students to explore and think while doing the assigned readings, and students will answer these questions in the reflections. Each of the reading reflections counts 2% of the final grade. An **electronic copy** of your reading reflection must be submitted on Canvas by **11pm** on **Wednesday**.

## **3. Quizzes (8%):**

Two quizzes will be held throughout the semester. Complete Quiz 1 by the end of the week for Section 4 (**by Sep 27<sup>th</sup> 11pm**); complete Quiz 2 by the end of the week for Section 6.3 (**by Nov 8<sup>th</sup> 11pm**). The quizzes are open-book and open-note, but you are not allowed to discuss the quiz questions and answers with anyone. Each quiz counts 4% of the final course grade. The quizzes are to evaluate students' fulfillment of competencies 1-3.

## **Course Format:**

The following elements comprise the format of this course:

### **1. To-Do Lists:**

The instructor will provide a weekly to-do list at least two days prior to each class, which will be posted on Canvas. The instructor will announce articles to read or skim as well as other class logistics via the to-do list. Students are expected to check the to-do list before and after every class.

### **2. Lectures:**

This course will be primarily carried out by lectures from the instructor. Lecture recordings and PowerPoint slides are posted on Canvas.

### **3. Stata Sections:**

Stata sections will be held in selected weeks after the main lecture.

**Course  
Policies:**

**1. Academic Integrity:**

Academic and personal misconduct by students in this class are defined and will be dealt with according to the procedures in the IU *Code of Student Rights, Responsibilities, and Conduct* (find the code at <https://studentcode.iu.edu/index.html>). Included among dishonest behaviors in an academic setting are cheating (using or attempting to use unauthorized assistance, materials, information, or study aids in an academic exercise), fabrication (falsifying or inventing information in an academic exercise), plagiarism (adopting or reproducing of ideas, words, or statements of another person without appropriate acknowledgement), interference (stealing, changing, destroying, or impeding another student's work), and facilitating (intentionally or knowingly helping or attempting to help another student commit an act of academic misconduct). Such misconduct, regardless of degree, will not be tolerated and will be referred to the IU Division of Student Affairs for possible sanction. Students who conduct academic dishonesty may be given an **F\*** course grade which can never be replaced on the transcript by retaking the course.

**2. Re-evaluation of Assignments and Exams:**

If you have a concern about a grade of your exam or written assignments, you can submit a brief written request for a re-evaluation within **3 days** of receiving a grade. Please clearly state why you believe a re-evaluation is warranted. However, change of grades is not guaranteed.

**3. Students with Special Needs:**

As a public health student, you are supposed to be more aware of your personal needs especially on physical and mental health, and how these needs can be accommodated and fulfilled. Do not hesitate to act if you are in following needs:

Any students with special needs such as vision and hearing impairment, dyslexia, etc., should talk to the instructor privately during the first two weeks of the semester in order to ensure that reasonable accommodations can be made. Please contact the IU Office of Disability Services for Students (<https://graduate.indiana.edu/support/disability.html>) if needed.

During the process of pursuing higher education, students may occasionally have personal or study-related issues which interfere with their academic performance. If you find yourself facing problems which may influence your coursework, you are encouraged to talk with the instructor. Or furthermore, you may seek for assistance at the Counseling and Psychological Services (<http://healthcenter.indiana.edu/counseling>). They provide two free sessions per semester for enrolled students. In addition, Student Academic Center (<http://sac.indiana.edu>) provides all

sorts of seminars and courses which teach you how to learn and help you enhance your learning capabilities.

#### **4. IU Student Recourses:**

- **Office of the Registrar:** Information on course scheduling, drop and add information, final exam schedule, and more:  
<https://registrar.indiana.edu/calendars/index.shtml>.
- **University Information Technology Services (UITS):** For help with e-mail problems, Canvas, computer questions, and more:  
<http://uits.iu.edu/>.
- **IU Health Center:** Health services, free information regarding health topics, massage appointments, <http://healthcenter.indiana.edu>.
- **Writing Tutorial Services:** International students with English as their second language may consult with the instructor if English is a barrier to their coursework. For written assignments, you may seek for assistance at the Writing Tutorial Services (<https://wts.indiana.edu/>). This service is offered for free to ANY IU student at IU Bloomington.

#### **5. Religious Observation:**

Students missing class for a religious observance can find the officially approved accommodation form by going to the Vice Provost for Faculty and Academic Affairs webpage for religious accommodations: (Religious Observances: Teaching Resources: Faculty Resources: Office of the Vice Provost for Faculty & Academic Affairs: Indiana University Bloomington). The form must be submitted at least 2 weeks prior to the anticipated absence.

#### **6. Sexual Misconduct and Title IX:**

One of the instructor's responsibilities is to create a positive learning environment for all students. Title IX and IU's Sexual Misconduct Policy prohibit sexual misconduct in any form, including sexual harassment, sexual assault, stalking, and dating and domestic violence. If you have experienced sexual misconduct, or know someone who has, the University can help.

If you are seeking help and would like to speak to someone confidentially, you can make an appointment with:

- IU Sexual Assault Crisis Services (SACS) at (812) 855-5711
- Confidential Victim Advocates (CVA) at (812) 856-2469 or [cva@indiana.edu](mailto:cva@indiana.edu)

It is also important that you know that Title IX and University policy require the instructor to share any information brought to attention about potential sexual misconduct, with the campus Deputy Title IX Coordinator

or IU's Title IX Coordinator. In that event, those individuals will work to ensure that appropriate measures are taken and resources are made available. Protecting student privacy is of utmost concern, and information will only be shared with those that need to know to ensure the University can respond and assist. You are encouraged to visit the IU Stop Sexual Violence website (<http://stopsexualviolence.iu.edu>) to learn more.

### **7. Bias Incident Reporting:**

Bias-based incident reports can be made by students, faculty and staff. Any act of discrimination or harassment based on race, ethnicity, religious affiliation, gender, gender identity, sexual orientation or disability can be reported through any of the options: 1) fill out an online report at <https://reportincident.iu.edu/>; 2) email [biasincident@indiana.edu](mailto:biasincident@indiana.edu); 3) call the Dean of Students Office at (812) 855-8187. Reports can be made anonymously at <https://reportincident.iu.edu>.

### **8. Course Evaluation:**

It is the policy of the School of Public Health to evaluate all courses taught through the School. Final student course evaluations will be conducted electronically in a manner that maintains the integrity of the process and the anonymity of evaluators.

### **9. Feedback to Instructor:**

To teach is to learn. Unsolicited positive or negative feedback is welcome to be given to the instructor during the entire semester. Your final grade will NOT be influenced by any of the feedback given to the instructor.

### **10. Email Etiquette:**

Caring about email etiquette shows your professionalism as well as respect to your email receivers. While sending emails or Canvas messages to the instructor, please consider your email etiquette, which is very different from sending text messages to your friends. If you are not sure what good email etiquette is, please refer to this webpage about "The Do's and Don'ts of Email Etiquette" at <https://www.entrepreneur.com/article/272780>.

### **11. COVID-Related Attendance Policy:**

If you have a positive COVID-19 test, have COVID-like symptoms, or have been instructed to quarantine you should not attend in-person class. To ensure that you can do this, attendance in this class will:

- 1) only be taken to comply with accreditation requirements, or
- 2) not be taken, or
- 3) be taken but will be prorated and will not lower a student's grade when that student was absent due to compliance with campus isolation expectations.

For those students, alternative assignments or make-ups will be offered on a case-by-case basis. Please work with the instructor to determine a path to continue your progress in the class during these absences, in whatever way the instructor determines fits within course objectives.

### SPH B702 Course Outline and Schedule (Fall 2023)

Section	Date (Thu-Wed)	Topic	Stata	Competency	Note (Due Wed 11pm)
1.1	Aug 24 – Aug 30	<b>[In person: Aug 24<sup>th</sup>]</b> Introduction (I): Course overview		1	Start-up survey due
1.2 2	Aug 31 – Sep 6	Introduction (II): Conceptualization; Literature review for academic research	Stata introduction	1	RR(I) due
3.1	Sep 7 – Sep 13	Research designs (I): Validities and pre-experimental research designs		2	RR(II) due
3.2	Sep 14 – Sep 20	Research designs (II): Quasi-experimental group designs		2	RR(III) due; PR (I) due
4	Sep 21 – Sep 27	Conceptual/theoretical frameworks for evaluation research	Basic commands	2	RR(IV) due; Quiz 1
	Sep 28 – Oct 4	<b>[In person: Sep 28<sup>th</sup>]</b> Q&A session: Designing your study			PR (II) due
5.1	Oct 5 – Oct 11	Data collection (I): Data collection; Institutional Review Board (IRB) and human subject protection		2, 3	RR(V) due;
5.2	Oct 12 – Oct 18	Data collection (II): Data management; measurement	Data management	2, 3	RR(VI) due
6.1	Oct 19 – Oct 25	Evaluating treatment effect (I): basic statistical methods for evaluation research	Basic statistics	2	PR (III) due
6.2	Oct 26 – Nov 1	<b>[In person: Oct 26<sup>th</sup>]</b> Evaluating treatment effect (II): longitudinal data and difference-in-difference method	Difference-in-difference	2	
6.3	Nov 2 – Nov 8	Evaluating treatment effect (III): survey data analysis; an exercise project		2	Quiz 2
6.4	Nov 9 – Nov 15	Evaluating treatment effect (IV): selection bias and its solutions	PS matching, IV, Heckman	2	PR (IV) due
	Nov 16 – Nov 22	<b>[In person: Nov. 16<sup>th</sup>]</b> Lab session: Data analysis Q&A		1, 2, 3	
	Nov 23 – Nov 29	[Thanksgiving break—No class!]			
7	Nov 30 – Dec 6	Reporting and publishing evaluation research		1, 2, 3	PR (V) due <b>Dec 1</b>
8 9	Dec 7 – Dec 13	<b>[In person: Dec. 7<sup>th</sup>]</b> Final presentations; Review of course and concluding remarks		1, 2, 3	Slides due <b>Dec 6;</b> Feedback due Dec 7
<b>NO Final Exam!</b>					Final paper due Dec 13

**Note:** Synchronous in-person and Zoom sessions are on **Thursday** (at PV 270 for in-person ones). Time as indicated.

All other sessions that are not indicated as in-person or via Zoom are asynchronous.

RR: Reading Reflection; PR: Progress Report.

All assignments are due on **Wednesday 11pm** unless otherwise indicated.

#### Course competencies:

1. Develop research questions that address gaps in public health knowledge.
2. Design rigorous health behavior research following acceptable standards and practices.
3. Apply ethical principles in the design of health behavior research.



## ♦ Section Topics, Goals and Required Readings ♦

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### Section 1: Introduction

#### 1.1. Course Overview (Aug. 24 – Aug. 30)

##### Required Readings:

- McDavid JC, Huse I, Hawthorn LRL. Chapter 1: Key Concepts and Issues in Program Evaluation and Performance Measurement. In: McDavid JC, Huse I, Hawthorn LRL. *Program Evaluation & Performance Measurement: An Introduction to Practice*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage Publications, Inc. 2013; 1-43.
- American Evaluation Association. Guiding Principles for Evaluators. *New Directions for Program Evaluation*. 1995; 66: 19-26.

#### 1.2. Conceptualization (Aug. 31 – Sep. 6)

##### Required Readings:

- Lin HC, J Park, DC Seo. Comprehensive US Statewide Smoke-Free Indoor Air Legislation and Secondhand Smoke Exposure, Asthma Prevalence, and Related Doctor Visits: 2007-2011. *American Journal of Public Health*. 2015; 105(8): 1617-1622.
- Rosenbaum JE. Patient Teenagers? A Comparison of the Sexual Behavior of Virginity Pledgers and Matched Nonpledgers. *Pediatrics*. 2009; 123(1): e110-e120.
- Meehan TM, Hansen H, Klein WC. The Impact of Parental Consent on the HIV Testing of Minors. *American Journal of Public Health*. 1997; 87(8): 1338-1341.
- Goldberg DM, Lin HC. Effects of the Mental Health Parity and Addictions Equality Act on Depression Treatment Choice in Primary Care Facilities. *The International Journal of Psychiatry in Medicine*. 2017; 52(1): 34-47.
- Aneshensel CS. Chapter 1: Introduction to Theory-Based Data Analysis. In: Aneshensel CS. *Theory-Based Data Analysis for the Social Sciences*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage Publications, Inc. 2013; 1-30.
- [Website] Rodriguez G. Stata Tutorial: <https://grodri.github.io/stata/tutorial.pdf>
- StataCorp. *Getting Started with Stata for Windows® Release 15*. College Station, TX: Stata Press. 2017.

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### Section 2: Literature Review for Academic Research (Aug. 31 – Sep. 6)

##### Required Readings:

- Frankfort-Nachmias C, Nachmias D. Appendix B: Writing Research Reports. In: Frankfort-Nachmias C, Nachmias D. *Research Methods in the Social Sciences*. 7<sup>th</sup> ed. New York, NY: Worth Publishers. 2008; 487-499.

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### Section 3: Research Designs

#### 3.1. Validities and Pre-Experimental Research Designs (Sep. 7 – Sep. 13)

##### Required Readings:

- Thyer BA. Chapter 1: The Role of Group Research Designs to Evaluate Social Work Practice. In: Thyer BA. *Quasi-Experimental Research Designs*. New York, NY: Oxford University Press. 2012; 3-28.
- Thyer BA. Chapter 2: Pre-Experimental Research Designs. In: Thyer BA. *Quasi-Experimental Research Designs*. New York, NY: Oxford University Press. 2012; 29-75.
- McDavid JC, Huse I, Hawthorn LRL. Chapter 3: Research Designs for Program Evaluations. In: McDavid JC, Huse I, Hawthorn LRL. *Program Evaluation & Performance Measurement: An Introduction to Practice*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage Publications, Inc. 2013; 89-144.
- Campbell DT, Stanley J. Table 1: Sources of Invalidity for Designs 1 through 6. In: Campbell DT, Stanley J. *Experimental and Quasi-Experimental Designs for Research*. Chicago, IL: Rand McNally and Company. 1966; 8.
- Landa RJ, Holman KC, O'Neill AH, et al. Intervention Targeting Development of Socially Synchronous Engagement in Toddlers with Autism Spectrum Disorder: A Randomized Control Trial. *The Journal of Child Psychology and Psychiatry*. 2011; 52(1): 13-21.
- Lee HY, Lin HC, Seo DC, Lohrmann DK. The Effect of E-cigarette Warning Labels on College Students' Perception of E-cigarettes and Intention to Use E-cigarettes. *Addictive Behaviors*. 2018; 76: 106-112.
- Cheng SH, Chiang TL. The Effect of Universal Health Insurance on Health Care Utilization in Taiwan. *JAMA: Journal of American Medical Association*. 1997; 278(2): 89-93.

#### **Optional Reading:**

- Shadish WR, Cook TD, Campbell DT. Chapter 2: Statistical Conclusion Validity and Internal Validity. In: Shadish WR, Cook TD, Campbell DT. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. 2<sup>nd</sup> ed. Boston, MA: Houghton Mifflin Company. 2001; 33-63.
- Shadish WR, Cook TD, Campbell DT. Chapter 3: Construct Validity and External Validity. In: Shadish WR, Cook TD, Campbell DT. *Experimental and Quasi-Experimental Designs for Generalized Causal Inference*. 2<sup>nd</sup> ed. Boston, MA: Houghton Mifflin Company. 2001; 64-101.
- Chen SY, Jordan C, Thompson S. The Effect of Cognitive Behavioral Therapy (CBT) on Depression: The Role of Problem Solving Appraisal. *Research on Social Work Practice*. 2006; 16: 500-510.

### **3.2. Quasi-Experimental Group Designs (Sep. 14 – Sep. 20)**

#### **Required Readings:**

- Thyer BA. Chapter 3: Quasi-Experimental Group Designs. In: Thyer BA. *Quasi-Experimental Research Designs*. New York, NY: Oxford University Press. 2012; 77-106.
- Thyer BA. Chapter 4: Interrupted Time Series Designs. In: Thyer BA. *Quasi-Experimental Research Designs*. New York, NY: Oxford University Press. 2012; 107-125.
- Campbell DT, Stanley J. Table 2: Sources of Invalidity for Quasi-Experimental Designs 7 through 12. In: Campbell DT, Stanley J. *Experimental and Quasi-Experimental Designs for Research*. Chicago, IL: Rand McNally and Company. 1966; 40.
- Campbell DT, Stanley J. Table 3: Sources of Invalidity for Quasi-Experimental Designs 13 through 16. In: Campbell DT, Stanley J. *Experimental and Quasi-Experimental Designs for Research*. Chicago, IL: Rand McNally and Company. 1966; 56.

- Motheral BR, Henderson R. The Effect of a Copay Increase on Pharmaceutical Utilization, Expenditures, and Treatment Continuation. *American Journal of Managed Care*. 1999; 5(11): 1383-1394.
- Rosenbaum JE. Patient Teenagers? A Comparison of the Sexual Behavior of Virginity Pledgers and Matched Nonpledgers. *Pediatrics*. 2009; 123(1): e110-e120.
- Grembowski D, Milgrom PM. Increasing access to Dental Care for Medicaid Preschool Children: The Access to Baby and Child Dentistry (ABCD) Program. *Public Health Reports*. 2000; 115: 448-459.
- Meehan TM, Hansen H, Klein WC. The Impact of Parental Consent on the HIV Testing of Minors. *American Journal of Public Health*. 1997; 87(8): 1338-1341.
- Chu YH, Frongillo EA, Jones SJ, et al. Improving Patron's Meal Selections through the Use of Point-of-Selection Nutrition Labels. *American Journal of Public Health*. 2009; 99(11): 2001-2005.
- Michielutte R, Shelton B, Paskett ED, et al. Use of an Interrupted Time-Series Design to Evaluate a Cancer Screening Program. *Health Education Research*. 2000; 15(5): 615-623.

#### **Optional Readings:**

- Hackman JR, Pearce JL, Wolfe JC. Effects of Change in Job Characteristics on Work Attitudes and Behaviors: A Naturally Occurring Quasi-Experiment. *Organizational Behavior and Human Performance*. 1978; 21: 289-304.
- Gunn WJ, Iverson DC, Katz M. Design of the School Health Education Evaluation. *Journal of School Health*. 1985; 55(8): 301-304.
- Ballart X, Riba C. Impact of Legislation Requiring Moped and Motorbike Riders to Wear Helmets. *Evaluation and Program Planning*. 1995; 18(4): 311-320.
- Mulford HA, Ledolter J, Fitzgerald JL. Alcohol Availability and Consumption: Iowa Sales Data Revisited. *Journal of Studies on Alcohol*. 1992; 53(5): 487-494.
- Chen H, Nwangwu A, Aparasu R, et al. The Impact of Medicare Part D on Psychotropic Utilization and Financial Burden for Community-Based Seniors. *Psychiatric Services*. 2008; 59(10): 1191-1197.
- Hankin JR, Sloan JJ, Firestone IJ, et al. A Time Series Analysis of the Impact of the Alcohol Warning Label on Antenatal Drinking. *Alcoholism: Clinical and Experimental Research*. 1993; 17(2): 284-289.

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## **Section 4: Conceptual/Theoretical Framework for Evaluation Research (Sep. 21 – Sep. 27)**

#### **Required Readings:**

- Lipsey MW. Theory as Method: Small Theories of Treatments. In: Sechrest L, Perrin E, and Bunker J. *Research Methodology: Strengthening Causal Interpretations of Nonexperimental Data*. Rockville, MD: US Department of Health and Human Services, Agency for Health Care Policy and Research. 1990; 33-52.
- Perrin KM. Chapter 4: Theories and Models. In: Perrin KM. *Principles of Evaluation and Research for Health Care Programs*. Burlington, MA: Jones & Bartlett Learning. 2015; 79-108.

- Centers for Disease Control and Prevention. Appendix 3: Theories and Models Used in Physical Activity Promotion. In: Centers for Disease Control and Prevention. *Physical Activity Evaluation Handbook*. Atlanta, GA: Centers for Disease Control and Prevention. 2002; 43-45.
- Hayden JA. Chapter 11: Choosing a Theory. In: Hayden JA. *Introduction to Health Behavior Theory*. Burlington, MA: Jones & Barlett Learning. 2014; 291-314.
- Rodes F, Stein JA, Fishbein M, et al. Using Theory to Understand How Interventions Work: Project RESPECT, Condom Use, and the Integrative Model. *AIDS Behavior*. 2007; 11: 393-407.
- Larson E. A Tool to Assess Barriers to Adherence to Hand Hygiene Guideline. *American Journal of Infection Control*. 2004; 32: 48-51.
- Lin HC, Erickson SR, Balkrishnan R. Physician Prescribing Patterns of Innovative Antidepressants in the United States: The Case of MDD Patients 1993-2007. *The International Journal of Psychiatry in Medicine*. 2011; 42(4): 353-368.
- Lee HY, Lin HC, Seo DC, Lohrmann DK. Determinants Associated with E-cigarette Adoption and Use Intention among College Students. *Addictive Behaviors*. 2017; 65: 102-110.

#### **Optional Readings:**

- Finney JW, Moos RH. Theory and Method in Treatment Evaluation. *Evaluation and Program Planning*. 1989; 12: 307-316.
- Begley CE, Lairson DR, Morgan RO, Rowan PJ, Balkrishnan R. Chapter 2: Effectiveness: Concepts and Methods. In: Lairson DR, Balkrishnan R, Aday LA. *Evaluating the Healthcare System: Effectiveness, Efficiency, and Equity*. 4<sup>th</sup> ed. Chicago, IL: Health Administration Press. 2013; 27-55.

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## **Section 5: Data Collection**

### **5.1. Data Collection; Institutional Review Board and Human Subject Protection (Oct. 5 – Oct. 11)**

#### **Required Readings:**

- Schwartz N. How the Questions Shape the Answers. *American Psychologist*. 1999; 54(2): 93-105.
- Vogt WP, Gardner DC, Haeffele LM. When to Use Archival Designs: Literature Reviews and Secondary Data Analyses. In: Vogt WP, Gardner DC, Haeffele LM. *When to Use What Research Design*. New York, NY: Guilford Publications. 2012; 86-102.
- Van Belle G. Chapter 2: Sample Size. In: van Belle G. *Statistical Rules of Thumb*. Hoboken, NJ: John Wiley & Sons, Inc. 2002; 27-51.
- [Website] Post-hoc Statistical Power for Multiple Regression Related Calculators: <https://www.danielsoper.com/statcalc/related.aspx?id=9>.
- Perrin KM. Chapter 2: Ethics. In: Perrin KM. *Principles of Evaluation and Research for Health Care Programs*. Burlington, MA: Jones & Bartlett Learning. 2015; 29-51.
- [Website] Institutional Review Board (IRB) of Indiana University: <https://research.iu.edu/compliance/human-subjects/index.html>.
- [Website] CITI test at Indiana University: <https://research.iu.edu/training/citi/index.html>.

**Optional Readings:**

- Schwartz N, Oyserman D. Asking Questions about Behavior: Cognition, Communication, and Questionnaire Construction. *American Journal of Evaluation*. 2001; 22(2): 127-160.

**5.2. Data Management; Measurement (Oct. 12 – Oct. 18)****Required Readings:**

- Good Clinical Data Management Practices Committee. Data Entry and Data Processing. In: *Good Clinical Data Management Practices*. Society for Clinical Data Management, Inc. 2008; 1-12.
- Van den Broeck J, Cunningham A, Eeckels R, et al. Data Cleaning: Detecting, Diagnosing, and Editing Data Abnormalities. *PLoS Medicine*. 2005; 2(10): 0966-0970.
- McDavid JC, Huse I, Hawthorn LRL. Chapter 4: Measurement for Program Evaluation and Performance Monitoring. In: McDavid JC, Huse I, Hawthorn LRL. *Program Evaluation & Performance Measurement: An Introduction to Practice*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage Publications, Inc. 2013; 145-185.
- Bryce J, Victora CG, Habicht JP, et al. The Multi-Country Evaluation of the Integrated Management of Childhood Illness Strategy: Lessons for the Evaluation of Public Health Interventions. *American Journal of Public Health*. 2004; 94(3): 406-415.
- Russell ST, Joyner K. Adolescent Sexual Orientation and Suicide Risk: Evidence from a National Study. *American Journal of Public Health*. 2001; 91(8): 1276-1281.
- Lin HC, J Park, DC Seo. Comprehensive US Statewide Smoke-Free Indoor Air Legislation and Secondhand Smoke Exposure, Asthma Prevalence, and Related Doctor Visits: 2007-2011. *American Journal of Public Health*. 2015; 105(8): 1617-1622.

**Optional Readings:**

- Stuart EA, Azur M, Frangakis C, Leaf P. Multiple Imputation with Large Data Sets: A Case Study of the Children's Mental Health Initiative. *American Journal of Epidemiology*. 2009; 169(9): 1133-1139.
- Good Clinical Data Management Practices Committee. Laboratory and Other External Data. In: *Good Clinical Data Management Practices*. Society for Clinical Data Management, Inc. 2008; 1-14.
- Schafer JL, Graham JW. Missing Data: Our View of the State of the Art. *Psychological Methods*. 2002; 7(2): 147-177.
- Del Boca FK, Darkes J. The Validity of Self-Reports of Alcohol Consumption: State of the Science and Challenges for Research. *Addiction*. 2003; 98(Suppl. 2): 1-12.

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**Section 6: Evaluating Treatment Effect****6.1. Basic Statistical Methods for Evaluation Research (Oct. 19 – Oct. 25)****Required Readings:**

- [Your statistics textbooks: *t*-test,  $\chi^2$  test, *F*-test, ANOVA, regression analysis]
- Lin HC. SPH B702 Statistics Handout (1): Review of Linear Regression. 2016.
- Lin HC. SPH B702 Statistics Handout (2): Logistic Regression. 2016.
- Lin HC. SPH B702 Statistics Handout Appendix: MEPS Dataset. 2016.

- Frankfort-Nachmias C, Nachmias D. Chapter 17: Control, Elaboration, and Multivariate Analysis. In: Frankfort-Nachmias C, Nachmias D. *Research Methods in the Social Sciences*. 7<sup>th</sup> ed. New York, NY: Worth Publishers. 2008; 385-411.
- McDavid JC, Huse I, Hawthorn LRL. Appendix A in Chapter 3: Statistical Tools for Program Evaluation. In: McDavid JC, Huse I, Hawthorn LRL. *Program Evaluation & Performance Measurement: An Introduction to Practice*. 2<sup>nd</sup> ed. Thousand Oaks, CA: Sage Publications, Inc.; 2013: 138-139.
- McKenzie JF, Neiger BL, Thackeray R. Table 15.1: Selecting Statistical Techniques. In: McKenzie JF, Neiger BL, Thackeray R. *Planning, Implementing, and Evaluating Health Promotion Programs: A Primer*. 6<sup>th</sup> ed. Glenview, IL: Pearson Education, Inc. 2013; 415.
- Agresti A, Finlay B. Chapter 16: An Introduction to Advanced Methodology. In: Agresti A, Finlay B. *Statistical Methods for the Social Sciences*. 4<sup>th</sup> ed. Upper Saddle River, NJ: Pearson Prentice Hall. 2009; 519-543.

## **6.2. Longitudinal Data and Difference-in-Difference Method (Oct. 26 – Nov. 1)**

### **Required Readings:**

- Wooldridge JM. Chapter 13: Pooling Cross Sections across Time: Simply Panel Data Methods. In: Wooldridge JM. *Introductory Econometrics: A Modern Approach*. 4<sup>th</sup> ed. Mason, OH: South-Western Cengage Learning. 2008; 444-480.
- Powell LM. Fast Food Costs and Adolescent Body Mass Index: Evidence from Panel Data. *Journal of Health Economics*. 2009; 28: 963-970.
- Dubay L, Kenny G. Expanding Public Health Insurance to Parents: Effects on Children's Coverage under Medicaid. *Health Services Research*. 2003; 38(5): 1283-1302.
- Lin HC, J Park, DC Seo. Comprehensive US Statewide Smoke-Free Indoor Air Legislation and Secondhand Smoke Exposure, Asthma Prevalence, and Related Doctor Visits: 2007-2011. *American Journal of Public Health*. 2015; 105(8): 1617-1622.
- Chen CC, Lin HC, Seo DC. Medicare Part D Implementation and Associated Health Impact Among Older Adults in the United States. *International Journal of Health Services*. 2018; 48(1): 42-56.

### **Optional Readings:**

- Abrevaya J. Estimating the Effect of Smoking on Birth Outcomes Using a Matched Panel Data Approach. *Journal of Applied Econometrics*. 2006; 21(4): 489-519.
- Branas CC, Cheney RA, MacDonald JM, et al. A Difference-in-Difference Analysis of Health, Safety, and Greening Vacant Urban Space. *American Journal of Epidemiology*. 2011; 174(11): 1296-1306.

## **6.3. Survey Data Analysis; An Exercise Project (Nov. 2 – Nov. 8)**

### **Required Readings:**

- Lin HC. SPH B702 Statistics Handout (5): Survey Data Analysis. 2016.
- Lin HC. SPH B702 Handout: Stata codes. 2016.

### **Optional Readings:**

- Lin HC. SPH B702 Statistics Handout (3): Categorical Data Analysis. 2016.

## 6.4. Selection Bias and Its Solutions (Nov. 9 – Nov. 15)

### Required Readings:

- Lin HC. SPH B702 Statistics Handout (4): Selection Bias and Its Solutions. 2016.
- Wooldridge JM. Chapter 15: Instrumental Variables Estimation and Two Stage Least Squares. In: Wooldridge JM. *Introductory Econometrics: A Modern Approach*. 4<sup>th</sup> ed. Mason, OH: South-Western Cengage Learning. 2008; 506-545.
- Williamson E, Morley R, Lucas A, et al. Propensity Scores: From Naïve Enthusiasm to Intuitive Understanding. *Statistical Methods in Medical Research*. 2011; 21(3): 273-293.
- Chatterji P, Alegria M, Lu M, et al. Psychiatric Disorders and Labor Market Outcomes: Evidence from the National Latino and Asian American Study. *Health Economics*. 2007; 16: 1069-1090.
- Powell LM, Tauras JA, Ross H. The Importance of Peer Effects, Cigarette Prices and Tobacco Control Policies for Youth Smoking Behavior. *Journal of Health Economics*. 2005; 24: 950-968.
- Park JY, Seo DC, Lin HC. E-cigarette Use and Intention to Initiate or Quit Smoking Among US Youths. *American Journal of Public Health*. 2016; 106(4): 672-678.
- Park JY, Lin HC, Peng CY. Participation of Supplemental Nutrition Assistance Program (SNAP) and Soft Drink Consumption Among U.S. Adults. *Nutrition and Health*. 2017 (Early online).
- Lin HC, Wang Z, Boyd CJ, Simone-Wastila L, Buu A. Statewide Prescription Drug Monitoring Programs and Physicians' Prescribing of Pain Medications. *Addictive Behaviors*. 2018; 76: 348-354.
- Yu CY, Lin HC. Exploring Factors Regarding Transit-Related Walking and Walking Duration. *Journal of Physical Activity & Health*. 2016; 13: 1220-1229.

### Optional Readings:

- Guo S, Fraser MW. Chapter 4: Sample Selection and Related Models. In: Guo S, Fraser MW. *Propensity Score Analysis: Statistical Methods and Applications*. 1<sup>st</sup> ed. Thousand Oaks, CA: Sage Publications. 2010; 85-125.
- Chatterji P, Markowitz S. The Impact of Maternal Alcohol and Illicit Drug Use on Children's Behavior Problem: Evidence from the Children of the National Longitudinal Survey of Youth. *Journal of Health Economics*. 2001; 20: 703-731.
- Chatterji P. Illicit Drug Use and Educational Attainment. *Health Economics*. 2006; 15: 489-511.
- Villanti AC, Cullen J, Vallone DM, et al. Use of Propensity Score Matching to Evaluate a National Smoking Cessation Media Campaign. *Evaluation Review*. 2012; 35(6): 571-591.
- Slade EP, Stuart EA, Salkever DS, Karakus M, Green KM, Ialongo N. Impacts of Age of Onset of Substance Use Disorders on Risk of Adult Incarceration among Disadvantaged Urban Youth: A Propensity Score Matching Approach. *Drug and Alcohol Dependence*. 2008; 95: 1-13.
- Harder VS, Stuart EA, Anthony JC. Adolescents Cannabis Problems and Young Adult Depression: Male-Female Stratified Propensity Score Analyses. *American Journal of Epidemiology*. 2008; 168: 592-601.

## **Section 7: Reporting and Publishing Evaluation Research (Nov. 30 – Dec. 6)**

### **Required Readings:**

- Jacobsen KH. Step 5: Reporting Findings (Chapters 31-39). In: Jacobsen KH. *Introduction to Health Research Methods: A Practical Guide*. 2<sup>nd</sup> ed. Burlington, MA: Jones & Bartlett Learning. 2017; 273-344.
- Chipperfield L, Citrome L, Clark J, et al. Authors' Submission Toolkit: A Practical Guide to Getting Your Research Published. *Current Medical Research and Opinion*. 2010; 26(8): 1967-1982.
- Bedeian AG. Peer Review and the Social Construction of Knowledge in the Management Discipline. *Academy of Management Learning and Education*. 2004; 3(2): 198-216.
- Lin HC, Wang Z, Boyd CJ, Simone-Wastila L, Buu A. Statewide Prescription Drug Monitoring Programs and Physicians' Prescribing of Pain Medications. *Addictive Behaviors*. 2018; 76: 348-354. [Manuscript version]
- Hakami R. Predatory Journals: Write, Submit, and Publish the Next Day. *Skeptical Inquirer*. 2017; 41(5): 32-33.

### **Optional Reading:**

- Krzyzanowska MK, Pintilie M, Tannock IF. Factors Associated with Failure to Publish Large Randomized Trials Presented at an Oncology Meeting. *JAMA: Journal of American Medical Association*. 2003; 290(4): 495-501.
- Gans JS, Shepherd GB. How Are the Mighty Fallen: Rejected Classic Articles by Leading Economists. *Journal of Economics Perspectives*. 1994; 8(1): 165-179.

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## **Section 8: Student Final Presentations (Dec. 7 – Dec. 13)**

- [No reading]

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## **Section 9: Review of Course and Concluding Remarks (Dec. 7 – Dec. 13)**

### **Required Readings:**

- Rossi PH, Lipsey MW, Freeman HE. Chapter 12: The Social Context of Evaluation. In: Rossi PH, Lipsey MW, Freeman HE. *Evaluation: A Systematic Approach*. 7<sup>th</sup> ed. Thousand Oaks, CA: Sage Publications, Inc. 2003; 369-421.
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