

## PHS 707

# Population Health Sciences Research Design and Study Methods I

Fall, 2019

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Dates / course meeting time: Tuesdays and Thursdays from 10:15 to 11:30 am

Course Location: 215 Morris St. (Imperial Building): Suite 210, Classroom A

Academic credit: 3 hours

Course format: Lecture + Discussion

Course Sakai site: <http://sakai.duke.edu>

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\*Note: This syllabus is a working, living document and will be updated throughout the course, including in response to student feedback. Changes will clearly be communicated to students.

### Instructors' information

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#### **Heather A. King, PhD**

Assistant Professor of Population Health Sciences and Division of General Internal Medicine

Duke University School of Medicine

Research Health Scientist

Durham VA Medical Center, Health Services Research and Development (HSR&D), Center of Innovation to Accelerate Discovery and Practice Transformation (ADAPT)

e-mail: [Heather.King@duke.edu](mailto:Heather.King@duke.edu)

Expertise: With a background in human development and family studies, Dr. King's work focuses on measurement, qualitative and mixed methods, quality of life, moral injury, rurality, and implementation and improvement science.

#### **Bryce B. Reeve, PhD**

Professor of Population Health Sciences

Professor of Pediatrics

Director of the Center for Health Measurement

Duke University School of Medicine

e-mail: [Bryce.Reeve@duke.edu](mailto:Bryce.Reeve@duke.edu)

Expertise: With a background in psychometrics, Dr. Reeve's work looks at the impact of disease and treatments on the lives of pediatric and adult patients and their caregivers.

**Office Hours:** By appointment.

### What is this course about?

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Scientific advances come from knowledge generated by high quality research studies built on strong theory, well designed qualitative, quantitative, and mixed approaches, and the capacity of the investigators to translate the findings to inform policy.

This is the first in a two-course sequence that will give you a strong foundation in population health sciences research methodology. Key concepts include how to define the area of interest, create testable hypotheses or research questions, select the appropriate study design, and to measure key concepts in the study. Both qualitative and quantitative methods will be discussed as they relate to their strengths and limitations for addressing these key concepts. The second course in this sequence provides in-depth coverage of the methods included in a variety of study designs.

### **What background knowledge do I need before taking this course?**

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No prerequisite courses are required. You will benefit by having a topic area of focus within population health sciences that can be used in course work.

### **What will I learn in this course?**

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1. Describe the state-of-the-science and knowledge gaps in a topic of interest within population health sciences.
2. Construct a population health sciences research question and justify a solution.
3. Describe the research process to address a knowledge gap.
4. Develop or adapt a theoretical framework and measurement model.

### **How will my grade be calculated?**

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A: 90% and higher

B: 80 to 89%

C: 70 to 79%

F: 69% and below

Grades will be based on:

- Class participation – 10%
- Article critique – 20%
- Pop quizzes on readings – 5%
- Your class research project, which includes:
  - Presentations and 1-page paper on
    - Population health sciences area of interest – 10% Sept 3 & 5 (classes #3 and #4)
    - Literature review to inform research question/hypothesis – 10% Sept 26 (class #10)
    - Study design and measures – 10% Nov 7 and 12 (classes #21 and #22)
  - Final paper – 35%

### **Can you tell me more about the article critique?**

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Each student will identify an article from the peer-reviewed literature related to “research design and study method” topic area, and lead a twenty to twenty-five minute class discussion of the article during the semester. The article could be a methods focused article (e.g., comparing different methods to engage patients into population health sciences research) or an applied research study that used an innovative study design or method to address the study’s research question. The focus for the later type would be on the method used, the strengths and limitations of this method, and how it may be used in other areas of population health sciences.

Version date: November 5, 2019

The article should be relatively recent (e.g., past 5 years), but we would prefer you to select a good quality (i.e., interesting, controversial) article over one that is just recent. Approximately 15 minutes of your total time should be reserved to moderate a discussion of the article with the class, including providing lead questions for discussion.

Presentation date: By Aug 30, students will notify, via email, Heather and Bryce of their top 3 dates to present an article in priority order. We will do our best but can't guarantee a spot. If you need to switch a day, please arrange on your own with another student to switch; however, please notify Heather and Bryce of the change.

Please submit the full citation and pdf of article to Bryce and Heather at least 2 weeks prior to your presentation date. **\*\*Make sure you read the article before sending the information to Heather and Bryce.**

All students are expected to read and be prepared to discuss the student article on day of class presentation.

Presenters should treat this presentation as if they were presenting at a scientific conference.

*Guidance for structuring the article discussion.*

The following is a widely-used format for structuring journal article discussions, and is encouraged for discussion of articles in this class. Please note that all students will have read your paper before class; thus, you don't need to go into deep detail on methods.

1. Overview. (Consider one PP slide per bullet point A - D below) [approximately 5 minutes]
  - a. What is the overall study question/issue?
    - i. There may be multiple questions/issues, though there is typically a primary one.
    - ii. A brief background to the issue is important for understanding the context of this article, its relevance, and implications.
  - b. What methods were used to answer the question/address the issue?
  - c. What are the major results, as the author reported them?
  - d. What are the conclusions and implications of findings?
2. Evaluation and discussion [approximately 15 minutes]

(Note: The evaluation and discussion is both a presentation and an interactive discussion – it is appropriate to solicit the feedback of others in the class; for example, if they agree or disagree, or have particular perspectives on the matter, particularly with regard to the conclusions, implications, and future research points.)

  - a. Address the strengths and limitations of the study, including (as appropriate):
    - i. Research question/issue
      1. “Good” question?
      2. Supported by existing literature? Use of theory, model, framework?
    - ii. Study design
      1. Appropriate for the question? Strengths/weaknesses of study design? (e.g., qualitative and/or quantitative approach; randomized double blind control trial; case-control; etc.)
      2. Groups treated equally/appropriately during study?
    - iii. Results

1. Significant? (In the statistical or clinically-relevant sense)
2. Important? (In the substantial or meaningful sense)
- iv. Conclusions/implications
  1. Justified?
  2. Actionable? (e.g., can inform the "Why?" of an issue [vs. just being descriptive or oriented toward "What?"], or contribute to an intervention to change research or outcomes?)
- b. Take home message (\*\*\*very important to address this)
  - i. This is the focal point of the discussion. What do you think about the article? What is the big take home message? What are next steps or research gaps? Are the authors on-track or off-base? What do we learn from this, in terms of what was right/good, what was wrong/off-target?
- c. Guidance for future research. (\*\*\*very important to address this)
  - i. This may come through discussion, above, but we would like to emphasize it as a meaningful take-away from the article in and of itself. As researchers and practitioners, how is our research (or our colleagues' research, if this isn't exactly our personal research focus area) informed by this work?

### **Pop quizzes? Really?!?!?**

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Pop quizzes will be short and easy to answer if the student has done the required reading for the day. Questions could be on the instructor-required reading or the article that will be critiqued by a student for that day (if applicable). The number of quizzes will vary and will partly depend on the extent the instructors feel the students are prepared for discussions during the course.

### **Can you tell me more about the presentations and corresponding 1-page summaries for my class research project?**

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Each student is expected to give three 5-minute presentations and answer questions from the instructors and students on these topics related to their research project (see next section below on final paper). In addition, students will submit along with their presentations a 1-page (single-spaced, 1" margins, 11-point TNR or Arial font) written summary, which instructors will review and provide feedback. The idea is that the final paper can build on these presentations and 1-page summaries throughout the course. Please send e-copy of presentation and 1-page write-up by email to Heather King and Bryce Reeve by CoB on the day before the presentation date.

1. Presentation on population health sciences area of interest
  - Draft title
  - Topic...the study is about...
  - Central question
  - Justification/rationale
2. Presentation on literature review to inform research question/hypothesis
  - Draft title
  - Topic...the study is about...
  - Central question
  - Keywords/criteria used to search the literature

- Search engines used
- # Articles Identified
- Key findings (what is known and what is not known)
- Research question and/or hypothesis

[note: This is not a systematic literature review nor a thorough literature review. We hope you identify a cluster of articles on a narrow topic that informs your proposed research question that will drive the next assignment thinking about the appropriate research study design that would address the key questions. By “cluster of articles”, we were thinking in the 3-10 article range, not the 20, 30 or 40 article range. This is why we encouraged everyone to sharpen their focus. Our evaluation is not on the extent that you combed through the literature, but more on finding a few meaningful articles to summarize and inform your research focus.]

### 3. Presentation on study design and measures

- Title
- Topic...the study is about... (or add the PICOT statement)
- Refined research question and/or hypotheses
- Ideal study design and approach (pros and cons of chosen method and why others ones are less appropriate at current time)
- Key variables (e.g., covariates, predictors, outcomes) and selected measures (or measurement approach)

## Can you tell me more about the final paper?

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The purpose of the term paper is three-fold:

1. To provide you a forum to focus on an element of “research design and study methodology” that is of greatest interest to you,
2. To help cement what you have learned in the class through (near) real-world application, and
3. To allow you to develop a tangible product that may serve as the basis for the next steps in your education or career, such as
  - a. A manuscript for publication,
  - b. Basis for your master’s thesis or dissertation research.
  - c. A grant proposal for a K-award or other investigator-initiated funding,
  - d. An interview and job talk for an academic or practice-related position in healthcare research, or
  - e. All of the above.

Format:

The final term paper will be in the format of a manuscript (1. Introduction, 2. Methods, 3. Results, 4. Conclusions) or portions of a grant application (A. Overview and specific Aims, B. Background, C. Preliminary studies [if appropriate], and D. Proposed methods.) The term paper is due on (or before) December 9 (Monday). It will be 10-12 pages in length excluding citations (line-spacing exactly 2.0 (double-spaced), 1” margins, 11 point TNR or Arial font). Citations are required, but do not fall within the page constraints.

A goal of the class is for you to complete the class with momentum toward your next set of academic/professional activities, be it publishing a paper or submitting a grant application. Accordingly, you are encouraged to select a topic that you may be interest in developing further, or may be working on in another class, in order to gain synergy and develop products that may be of a higher caliber than if you were to address them independently.

While this synergy is encouraged, it is not acceptable to turn in the exact same product for credit in two separate classes (or one you submitted to a prior class). To minimize uncertainty, it is encouraged to work with the instructor to select a topic and touch base periodically regarding progress, to obtain guidance for an effective end-product. Also, please make sure you are not duplicating what may have been recently published in the field.

### **How can I prepare for the class sessions to be successful?**

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You are expected to do the pre-reading required for each class and to come to class prepared to actively participate in class discussions. Beyond attending class, participating fully in the discussions will count towards achieving the full score for class participation.

### **What required texts, materials, and equipment will I need?**

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Course readings include a textbook and published articles:

#### Textbook:

Creswell, J. W., & Creswell, J. D. (2018). *Research design: Qualitative, quantitative, and mixed methods approaches* (5th ed.). Thousand Oaks, CA: Sage.

- On Amazon: \$53.53 (buy) / \$23.42 (rent) (prices subject to change)

Includes access to supplemental materials via website: <https://edge.sagepub.com/creswellrd5e.com>

#### Articles:

You may access scientific articles online through the Duke University Medical Center Library website for e-journals: <https://mclibrary.duke.edu/tags/e-journals>. If you have trouble finding an article, please contact an instructor.

Course Sakai Site: <http://sakai.duke.edu>

### **What are the course policies?**

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#### **Academic integrity:**

The faculty, staff, students, and affiliates of the Department of Population Health Sciences adhere to the Duke Community Standard:

Duke University is a community dedicated to scholarship, leadership, and service and to the principles of honesty, fairness, respect, and accountability. Citizens of this community commit to reflect upon and uphold these principles in all academic and nonacademic endeavors, and to protect and promote a culture of integrity.

To uphold the Duke Community Standard:

- I will not lie, cheat, or steal in my academic endeavors;
- I will conduct myself honorably in all my endeavors; and
- I will act if the Standard is compromised.

More information on students' responsibilities regarding the Duke Community Standard [can be found here.](https://studentaffairs.duke.edu/conduct/about-us/duke-community-standard) (<https://studentaffairs.duke.edu/conduct/about-us/duke-community-standard> )

## **Duke University Institutional Statement of Commitment to Diversity and Inclusion**

Duke aspires to create a community built on collaboration, innovation, creativity, and belonging. Our collective success depends on the robust exchange of ideas—an exchange that is best when the rich diversity of our perspectives, backgrounds, and experiences flourishes. To achieve this exchange, it is essential that all members of the community feel secure and welcome, that the contributions of all individuals are respected, and that all voices are heard. All members of our community have a responsibility to uphold these values.

### **Class attendance:**

Students are allowed up to three missed class meetings during an academic semester, with prior instructor approval. Absences beyond or outside of this allotment may result in consequences for the student, including, but not limited to, lower participation scores. In addition, it is expected that the student will keep up with the material both assigned in the class and covered during the class. For missed classes, students are recommended to contact their peers or reach out to an instructor.

### **Phone and laptop use in class:**

Please silence all smart phones in class and no texting. Laptops may be used in class only for taking notes and for looking up information relevant to the topic being discussed; email programs, facebook, games, twitter, instagram, etc. will not be accessed during class. Violations of this rule will affect your participation grade.

## **What campus resources can help me during this course?**

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<https://gradschool.duke.edu/student-life/student-resources>

<https://populationhealth.duke.edu/master-science/admitted-students>

**What is the expected course schedule? (note: will be updated throughout course)**

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## **Module 1: Overview of Population Health Sciences Research and Preliminary Research Considerations**

### ***Class Meeting 1***

<b>Date</b>	<b>Tuesday, August 27, 2019</b>
<b>Class topic/unit name</b>	Course introductions and overview
<b>Pre-class work for students</b>	Review course syllabus  Read: Young, Jane M., and Michael J. Solomon. 2009. How to critically appraise an article. <i>Nature Clinical Practice Gastroenterology &amp; Hepatology</i> 6, (2): 82-91
<b>Planned in-class activities</b>	Introductions Overarching figure of population health sciences Review of syllabus
<b>Assignments due</b>	

### ***Class Meeting 2***

<b>Date</b>	<b>Thursday, August 29, 2019</b>
<b>Class topic/unit name</b>	Overview of population health sciences: What is it? How is it unique? Examples? Cross-cutting methodological issues?
<b>Pre-class work for students</b>	Read: Kindig, David, and Greg Stoddart. 2003. What is population health? <i>American Journal of Public Health</i> 93, (3): 380-383.  Gourevitch, M. N., Curtis, L. H., Durkin, M. S., Fagerlin, A., Gelijns, A. C., Platt, R., . . . Tierney, W. M. (2019). The Emergence of Population Health in US Academic Medicine: A Qualitative Assessment. <i>JAMA Netw Open</i> , 2(4), e192200. doi:10.1001/jamanetworkopen.2019.2200  Send to Bryce ( <a href="mailto:Bryce.Reeve@duke.edu">Bryce.Reeve@duke.edu</a> ) 1-2 pictures of favorite places to be or people to be with.

<b>Planned in-class activities</b>	Ice breaker: 1-2 pictures of favorite places to be or people to be with. Class discussion of interests and intersection with population health sciences Discuss key terms used in the field
<b>Assignments due</b>	Send to Bryce ( <a href="mailto:Bryce.Reeve@duke.edu">Bryce.Reeve@duke.edu</a> ) 1-2 pictures of favorite places to be or people to be with.

***Class Meeting 3***

<b>Date</b>	<b>Tuesday, September 3, 2019</b>
<b>Class topic/unit name</b>	Scientific methods and importance: Scientific understanding and explanation, process of designing research
<b>Pre-class work for students</b>	Read: Creswell Chapter 1: The Selection of a Research Approach  Feder, J. 2003. Why truth matters: Research versus propaganda in the policy debate. <i>Health Serv Res</i> 38(3): 783-787.  Oerther, S., & Oerther, D. (2019). A population health perspective on America’s opioid addiction. <i>Perspectives in Public Health</i> , 139(4), 184–185. <a href="https://doi.org/10.1177/1757913919851829">https://doi.org/10.1177/1757913919851829</a>
<b>Planned in-class activities</b>	Critique of population health-related issues (public health, policy) in popular press  Individual 5-minute presentations – population health sciences area of interest (for ½ class)
<b>Assignments due</b>	Individual 5-minute presentation and 1-page summary (for ½ class)

***Class Meeting 4***

<b>Date</b>	<b>Thursday, September 5, 2019</b>
<b>Class topic/unit name</b>	Ethical considerations
<b>Pre-class work for students</b>	Complete CITI training if haven’t already  Read: Creswell Chapter 4 pp. 88-98 on Ethical Considerations

	<p>Resnik, D.B. 2011. What is Research Ethics &amp; Why is it Important? National Institute of Environmental Health Sciences. National Institutes of Health (NIH). Retrieved from <a href="https://www.niehs.nih.gov/research/resources/bioethics/whatis/">https://www.niehs.nih.gov/research/resources/bioethics/whatis/</a></p> <p>Optional Reading: Resnik, D.B. 2019. Research Ethics Timeline (1932-Present). National Institute of Environmental Health Sciences. National Institutes of Health (NIH). Retrieved from <a href="http://www.niehs.nih.gov/research/resources/bioethics/timeline/">http://www.niehs.nih.gov/research/resources/bioethics/timeline/</a></p>
<b>Planned in-class activities</b>	Individual 5-minute presentations – population health sciences area of interest (for ½ class)
<b>Assignments due</b>	Individual 5-minute presentation and 1-page summary (for ½ class)

*Class Meeting 5*

<b>Date</b>	<b>Tuesday, September 10, 2019</b>
<b>Class topic/unit name</b>	Conducting literature searches: Overview of library resources, strategies, and tips
<b>Pre-class work for students</b>	Read: Creswell Chapter 2: Review of the Literature
<b>Planned in-class activities</b>	Guest speaker: Biomedical Research Librarian, Karen Barton
<b>Assignments due</b>	

**Module 2: Formulating Research Questions & Developing Goals**

*Class Meeting 6*

<b>Date</b>	<b>Thursday, September 12, 2019</b>
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<b>Class topic/unit name</b>	Theories, Research questions and Hypotheses
<b>Pre-class work for students</b>	<p>Read:</p> <ul style="list-style-type: none"> <li>• Creswell Chapter 3: The Use of Theory,</li> <li>• Creswell Chapter 5: The Introduction</li> <li>• Lipowski, E. E. 2008. Developing great research questions. American Journal of Health-System Pharmacy, 65(17), 1667-1670.</li> </ul> <p>Optional Reading: Creswell Chapter 4: Writing Strategies (pp. 75-88)</p>
<b>Planned in-class activities</b>	Instructor presentation and description of homework assignment for following class.
<b>Assignments due</b>	

***Class Meeting 7***

<b>Date</b>	<b>Tuesday, September 17, 2019</b>
<b>Class topic/unit name</b>	Population Health Science Theories
<b>Pre-class work for students</b>	<p>Read: Creswell Chapter 6: The Purpose Statement Creswell Chapter 7: Research Questions and Hypotheses</p> <p><u>Student article</u>: Wilkins E, Morris M, Radley D, Griffiths C. Methods of measuring associations between the Retail Food Environment and weight status: Importance of classifications and metrics. SSM - Population Health. 2019;8:100404. doi:10.1016/j.ssmph.2019.100404</p>
<b>Planned in-class activities</b>	Student presentations on theory related to their topic (see section below)
<b>Assignments due</b>	<p>Find a theory or conceptual model/framework within your topic (research question) that may be directly applicable or related to your topic. For class, prepare a 3-minute maximum presentation that includes, but not limited to:</p> <ul style="list-style-type: none"> <li>• Reminder of your topic area discussed from prior week.</li> <li>• Brief introduction of the theory (conceptual model/framework) with reference</li> <li>• Discussion of how it informs their topic area or the strengths/limitations of the theory of how it relates to their topic area.</li> </ul>

**Week 8 or Class Meeting 8**

<b>Date</b>	<b>Thursday, September 19, 2019</b>
<b>Class topic/unit name</b>	Photovoice and Concept mapping – participatory input
<b>Pre-class work for students</b>	<p>Read:</p> <p>Burke, J. G., O'Campo, P., Peak, G. L., Gielen, A. C., McDonnell, K. A., &amp; Trochim, W. M. (2005). An introduction to concept mapping as a participatory public health research method. <i>Qual Health Res</i>, 15(10), 1392-1410. doi:10.1177/1049732305278876</p> <p>Wang C, Burris MA. Photovoice: concept, methodology, and use for participatory needs assessment. <i>Health Education &amp; Behavior</i> 1997;24(3):369-387.</p> <p>Arnstein, Sherry R.(1969) 'A Ladder Of Citizen Participation', <i>Journal of the American Planning Association</i> 1969;35(4):216-224. DOI: 10.1080/01944366908977225</p> <p>Optional Reading:</p> <p>Humphrey L, Willgoss T, Trigg A, Meysner S, Kane M, Dickinson S, Kitchen H. A comparison of three methods to generate a conceptual understanding of a disease based on the patients' perspective. <i>Journal of Patient-Reported Outcomes</i> 2017;1:9. DOI 10.1186/s41687-017-0013-6</p> <p>Israel BA, Schulz AJ, Parker EA, Becker AB. Review of community-based research. Assessing partnership approaches to improve public health. <i>Annu. Reve Public Health</i> 1998;19:173-202.</p>
<b>Planned in-class activities</b>	<p>Guest Lecturers: Molly McFatrigh, MPH; Courtney Mann, MA, CCRP</p> <ul style="list-style-type: none"> <li>• Photovoice</li> <li>• Group Concept Mapping</li> </ul>
<b>Assignments due</b>	

**Class Meeting 9**

<b>Date</b>	<b>Tuesday, September 24, 2019</b>
<b>Class topic/unit name</b>	Stakeholder engagement: Introduction
<b>Pre-class work for students</b>	<p>Read:</p> <p>Concannon, T. W., Meissner, P., Grunbaum, J. A., McElwee, N., Guise, J. M., Santa, J., . . . Leslie, L. K. (2012). A new taxonomy for stakeholder engagement in patient-centered outcomes research. <i>J Gen Intern Med</i>, 27(8), 985-991. doi:10.1007/s11606-012-2037-1</p>

	<p>Goodman, M. S., &amp; Sanders Thompson, V. L. (2017). The science of stakeholder engagement in research: classification, implementation, and evaluation. <i>Transl Behav Med</i>, 7(3), 486-491. doi:10.1007/s13142-017-0495-z</p> <p><u>Student Article</u>: Avdic D, Lundborg P, Vikström J. Estimating returns to hospital volume : Evidence from advanced cancer surgery. <i>J Health Econ</i> 2019; 63: 81–99. <a href="https://doi.org/10.1016/j.jhealeco.2018.10.005">doi.org/10.1016/j.jhealeco.2018.10.005</a></p> <p>Optional Reading: Boyer, A. P., Fair, A. M., Joosten, Y. A., Dolor, R. J., Williams, N. A., Sherden, L., ... Wilkins, C. H. (2018). A Multilevel Approach to Stakeholder Engagement in the Formulation of a Clinical Data Research Network. <i>Medical care</i>, 56 Suppl 10 Suppl 1(10 Suppl 1), S22–S26. doi:10.1097/MLR.0000000000000778</p>
<b>Planned in-class activities</b>	Student article critique
<b>Assignments due</b>	

***Class Meeting 10***

<b>Date</b>	<b>Thursday, September 26, 2019</b>
<b>Class topic/unit name</b>	Class presentations on literature reviews
<b>Pre-class work for students</b>	
<b>Planned in-class activities</b>	Individual 5-minute presentations – literature review to inform research question/hypothesis
<b>Assignments due</b>	Individual 5-minute presentation and 1-page summary

***Class Meeting 11***

<b>Date</b>	<b>Tuesday, October 1, 2019</b>
<b>Class topic/unit name</b>	Stakeholder engagement: Guest presentation

<b>Pre-class work for students</b>	<p>Read:</p> <p>Concannon, T. W., Fuster, M., Saunders, T., Patel, K., Wong, J. B., Leslie, L. K., &amp; Lau, J. (2014). A systematic review of stakeholder engagement in comparative effectiveness and patient-centered outcomes research. <i>J Gen Intern Med</i>, 29(12), 1692-1701. doi:10.1007/s11606-014-2878-x</p> <p>Ray, K. N., &amp; Miller, E. (2017). Strengthening stakeholder-engaged research and research on stakeholder engagement. <i>J Comp Eff Res</i>, 6(4), 375-389. doi:10.2217/ce-2016-0096</p> <p>Hamilton, A. B., Brunner, J., Cain, C., Chuang, E., Luger, T. M., Canelo, I., . . . Yano, E. M. (2017). Engaging multilevel stakeholders in an implementation trial of evidence-based quality improvement in VA women's health primary care. <i>Transl Behav Med</i>, 7(3), 478-485. doi:10.1007/s13142-017-0501-5</p>
<b>Planned in-class activities</b>	Guest speakers: Jennifer Gierisch, PhD and Brandolyn White, MPH
<b>Assignments due</b>	

### Module 3: Study Design: QUAL / QUANT / MIXED-METHODS

#### Class Meeting 12

<b>Date</b>	<b>Thursday, October 3, 2019</b>
<b>Class topic/unit name</b>	Overview of the types of study designs: strengths and limitations PICOT Framework: Population; Intervention; Comparator; Outcome; Time frame (PICOT)
<b>Pre-class work for students</b>	<p><u>Read:</u></p> <p>Riva JJ, Malik KMP, Burnie SJ, Endicott AR, Busse JW. What is your research question? An introduction to the PICOT format for clinicians. <i>The Journal of the Canadian Chiropractic Association</i>, 2012;56(3):167–171.</p> <p>Student article: Shortell, S. M., Poon, B. Y., Ramsay, P. P., Rodriguez, H. P., Ivey, S. L., Huber, T., ... &amp; Summerfelt, T. (2017). A multilevel analysis of patient engagement and patient-reported outcomes in primary care practices of accountable care organizations. <i>Journal of General Internal Medicine</i>, 32(6), 640-647.</p>
<b>Planned in-class activities</b>	Student article critique
<b>Assignments due</b>	

**TUESDAY, OCTOBER 8: FALL BREAK!!!!!!**

***Class Meeting 13***

<b>Date</b>	<b>Thursday, October 10, 2019</b>
<b>Class topic/unit name</b>	Qualitative methods – 1 (Introduction and design)
<b>Pre-class work for students</b>	Read: Creswell Chapter 1: The Selection of a Research Approach (already read/assigned for Sept. 3 class)  Creswell Chapter 9: Qualitative Methods  Student article: Rhee JJ, Sampson L, Cho E, Hughes MD, Hu FB, Willett WC. Comparison of methods to account for implausible reporting of energy intake in epidemiologic studies. <i>American Journal of Epidemiology</i> 2015;181(4):225-233.
<b>Planned in-class activities</b>	Student article critique
<b>Assignments due</b>	

***Class Meeting 14***

<b>Date</b>	<b>Tuesday, October 15, 2019</b>
<b>Class topic/unit name</b>	Qualitative methods – 2 (Design continued and data collection)
<b>Pre-class work for students</b>	Read: Guest, G., Bunce, A., & Johnson, L. (2006). How Many Interviews Are Enough?: An Experiment with Data Saturation and Variability. <i>Field Methods</i> , 18(1), 59–82. doi:10.1177/1525822X05279903  Guest, G., Namey, E., & McKenna, K. (2017). How Many Focus Groups Are Enough? Building an Evidence Base for Nonprobability Sample Sizes. <i>Field Methods</i> , 29(1), 3-22. doi:10.1177/1525822x16639015  Student article: Gold, R., Bunce, A., Cottrell, E., et al (2019). Study protocol: A pragmatic, stepped-wedge trial of tailored support for implementing social determinants of health documentation/action in community health centers, with realist evaluation. <i>Implementation Science</i> , 14(1), 9-9. doi:10.1186/s13012-019-0855-9

<b>Planned in-class activities</b>	Student article critique Review tipsheet – qualitative interviewing
<b>Assignments due</b>	

***Class Meeting 15***

<b>Date</b>	<b>Thursday, October 17, 2019</b>
<b>Class topic/unit name</b>	Qualitative methods – 3 (Data collection)
<b>Pre-class work for students</b>	Read: Tipsheet – qualitative interviewing  Student article: Youn JH, Stevenson MD, Thokala P, Payne K, Goddard M. Modeling the Economic Impact of Interventions for Older Populations with Multimorbidity: A Method of Linking Multiple Single-Disease Models. <i>Med Decis Making</i> . 2019:272989x19868987
<b>Planned in-class activities</b>	Student article critique Interviewing practice
<b>Assignments due</b>	

***Class Meeting 16***

<b>Date</b>	<b>Tuesday, October 22, 2019</b>
<b>Class topic/unit name</b>	Qualitative methods – 4 (Coding and analysis)
<b>Pre-class work for students</b>	Read: Golafshani, N. (2003). Understanding Reliability and Validity in Qualitative Research. <i>The Qualitative Report</i> , 8(4), 597–606.  Hsieh, H. F., & Shannon, S. E. (2005). Three approaches to qualitative content analysis. <i>Qual Health Res</i> , 15(9), 1277-1288. doi:10.1177/1049732305276687
<b>Planned in-class activities</b>	
<b>Assignments due</b>	

***Class Meeting 17***

<b>Date</b>	<b>Thursday, October 24, 2019</b>
<b>Class topic/unit name</b>	Quantitative methods – 1
<b>Pre-class work for students</b>	Read: Creswell Chapter 8 Quantitative Methods
<b>Planned in-class activities</b>	Discuss Assignment #3
<b>Assignments due</b>	

***Class Meeting 18***

<b>Date</b>	<b>Tuesday, October 29, 2019</b>
<b>Class topic/unit name</b>	Quantitative methods – 2
<b>Pre-class work for students</b>	Read: Student article: Kennedy S, Bailey R, Jaffee K, et al. Effectiveness of evidence-based asthma interventions. <i>Pediatrics</i> 2017;139(6): e20164221
<b>Planned in-class activities</b>	Student article critique
<b>Assignments due</b>	

***Class Meeting 19***

<b>Date</b>	<b>Thursday, October 31, 2019</b>
<b>Class topic/unit name</b>	Quantitative methods – 3 and dissemination and implementation designs
<b>Pre-class work for students</b>	Read: Brown, C. H., Curran, G., Palinkas, L. A., Aarons, G. A., Wells, K. B., Jones, L., . . . Cruden, G. (2017). An Overview of Research and Evaluation Designs for Dissemination and Implementation. <i>Annu Rev Public Health, 38</i> , 1-22. doi:10.1146/annurev-publhealth-031816-044215

	<p>Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. (2012). Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. <i>Medical Care</i>, 50(3), 217.</p> <p>Student article: Hughes HK, Korthuis PT, Saha S, Eggly S, Sharp V, Cohn J, Moore R, Beach MC. <a href="#">A mixed methods study of patient-provider communication about opioid analgesics</a>. <i>Patient Educ Couns</i>. 2015 Apr;98(4):453-61. doi: 10.1016/j.pec.2014.12.003. Epub 2015 Jan 3. PubMed PMID: 25601279; PubMed Central PMCID: PMC4417607.</p>
<b>Planned in-class activities</b>	<p>Eat candy!!!!</p> <p>Student article critique</p>
<b>Assignments due</b>	

***Class Meeting 20***

<b>Date</b>	<b>Tuesday, November 5, 2019</b>
<b>Class topic/unit name</b>	Mixed methods
<b>Pre-class work for students</b>	<p>Read: Creswell Chapter 10 Mixed Methods Procedures</p> <p>Student article: Lopez-Montoyo, Alba, et al. "Effectiveness of a Brief Psychological Mindfulness-Based Intervention for the Treatment of Depression in Primary Care: Study Protocol for a Randomized Controlled Clinical Trial." <i>BMC Psychiatry</i>, vol. 19, no. 1, 16 Oct. 2019, doi:10.1186/s12888-019-2298-x.</p>
<b>Planned in-class activities</b>	Student article critique
<b>Assignments due</b>	

**Module 4: Measurement**

***Class Meeting 21***

<b>Date</b>	<b>Thursday, November 7, 2019</b>
<b>Class topic/unit name</b>	Overview of measurement: Bias, levels of measurement, true score theory, reliability, and validity

<b>Pre-class work for students</b>	<p>Read:</p> <p>Patrick DL, Chiang YP. Measurement of health outcomes in treatment effectiveness evaluations: conceptual and methodological challenges. <i>Medical Care</i> 2000;38(9, Supp II):II-14-II-25.</p> <p>Optional Reading:</p> <p>Eton DT, Ridgeway JL, Egginson JS et al Finalizing a measurement framework for the burden of treatment in complex patients with chronic conditions. <i>Patient Related Outcome Measures</i> 2015;6 117-126.</p>
<b>Planned in-class activities</b>	Individual 5-minute presentations – study design and measures
<b>Assignments due</b>	

***Class Meeting 22***

<b>Date</b>	<b>Tuesday, November 12, 2019</b>
<b>Class topic/unit name</b>	Types of measures: self-report, clinician-report, observer report, performance-based Characteristics of a quality measure – 1
<b>Pre-class work for students</b>	<p>Read:</p> <p>Scientific Advisory Committee of the Medical Outcomes Trust. “Assessing Health Status and Quality-of-Life Instruments: Attributes and Review Criteria.” <i>Quality of Life Research</i>, vol. 11, no. 3, 2002, pp. 193–205.</p>
<b>Planned in-class activities</b>	Individual 5-minute presentations – study design and measures
<b>Assignments due</b>	1-page summary of study design and measures

***Class Meeting 23***

<b>Date</b>	<b>Thursday, November 14, 2019</b>
<b>Class topic/unit name</b>	Characteristics of a quality measure – 2

<b>Pre-class work for students</b>	<p>Read: Prinsen CAC, Mokkink LB, Bouter LM, Alonso J, Patrick, DL, de Vet HCW, Terwee CB. COSMIN guideline for systematic reviews of patient-reported outcome measures. <i>Quality of Life Research</i> 2019;27(5):1147-1157.</p> <p>Student article: Bethell, C.D.; Carle, A.; Hudziak, J.; Gombojav, N.; Powers, K.; Wade, R.; Braveman, P. Methods to Assess Adverse Childhood Experiences of Children and Families: Toward Approaches to Promote Child Well-being in Policy and Practice. <i>Acad. Pediatr.</i> 2017, 17, S51–S69.</p> <p>Optional Reading: Smith, G. T. (2005). On construct validity: issues of method and measurement. <i>Psychol Assess</i>, 17(4), 396-408. doi:10.1037/1040-3590.17.4.396</p>
<b>Planned in-class activities</b>	Student article critique
<b>Assignments due</b>	

**Class Meeting 24**

<b>Date</b>	<b>Tuesday, November 19, 2019</b>
<b>Class topic/unit name</b>	Design and evaluation of a measure – 1
<b>Pre-class work for students</b>	<p>Read: Willis, G. B. (1999). Cognitive Interviewing: A “How To” Guide. Reducing Survey Error through Research on the Cognitive and Decision Processes in Surveys: Short course presented at the 1999 Meeting of the American Statistical Association <a href="https://www.chime.ucla.edu/publications/docs/cognitive%20interviewing%20guide.pdf">https://www.chime.ucla.edu/publications/docs/cognitive%20interviewing%20guide.pdf</a></p> <p>Student article: Owen RR., et al. “Using Implementation Facilitation to Implement Primary Care Mental Health Integration via Clinical Video Telehealth in Rural Clinics: Protocol for a Hybrid Type 2 Cluster Randomized Stepped-Wedge Design.” <i>Implementation Science: IS</i>, vol. 14, no. 1, 21 2019, p. 33. <i>PubMed</i>, doi:10.1186/s13012-019-0875-5</p> <p>Optional reading: Patrick, D. L., et al. Content Validity-Establishing and Reporting the Evidence in Newly Developed Patient-Reported Outcomes (PRO) Instruments for Medical Product Evaluation: ISPOR PRO Good Research Practices Task Force Report: Part 1-Eliciting Concepts for a New PRO Instrument. <i>Value Health</i> 2011; 14(8): 967-977.</p> <p>Patrick, D. L., et al. (2011). Content Validity-Establishing and Reporting the Evidence in Newly Developed Patient-Reported Outcomes (PRO) Instruments for Medical Product Evaluation: ISPOR PRO Good Research Practices Task Force Report: Part 2-Assessing Respondent Understanding. <i>Value Health</i> 2011; 14(8): 978-988</p>

<b>Planned in-class activities</b>	Online 18 minute video Student article critique
<b>Assignments due</b>	

***Class Meeting 25***

<b>Date</b>	<b>Thursday, November 21, 2019</b>
<b>Class topic/unit name</b>	Design and evaluation of a measure – 2
<b>Pre-class work for students</b>	Read: Reeve BB, Stover AM, Alfano CM et al. The Piper Fatigue Scale-12 (PFS-12): psychometric findings and item reduction in a cohort of breast cancer survivors. Breast Cancer Research and Treatment 2012;136:9-20.  Student article: _____
<b>Planned in-class activities</b>	Practice cognitive testing Student article critique
<b>Assignments due</b>	

***Class Meeting 26***

<b>Date</b>	<b>Tuesday, November 26, 2019</b>
<b>Class topic/unit name</b>	Patient-Reported Outcomes Measurement Information System (PROMIS) Measures and WRAP UP
<b>Pre-class work for students</b>	review this website: <a href="http://www.healthmeasures.net/explore-measurement-systems/promis">http://www.healthmeasures.net/explore-measurement-systems/promis</a> Answer more surveys: <a href="https://www.assessmentcenter.net/ac1/Assessments/CATDemo">https://www.assessmentcenter.net/ac1/Assessments/CATDemo</a>
<b>Planned in-class activities</b>	
<b>Assignments due</b>	

***The term paper is due on (or before) December 9 (Monday).***

