

GMS 6853: Applied Topics in Dissemination and Implementation Science

**Department of Health Outcomes and Policy
College of Medicine
University of Florida**

Semester: Spring 2015

Time: Tuesday, 9:35 -11:30

Location: Cancer and Genetics Research Complex, Room 451A

Credits: 2

Instructors:

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Office Hours: By appointment only

COURSE DESCRIPTION

The National Institutes of Health (NIH) and the Centers for Disease Control (CDC) have named dissemination research and implementation science as key components of translation research. Translation research is essential for moving findings from controlled settings into the community with a primary focus on physician practices and other health care settings. This course provides a framework for examining dissemination research and implementation sciences and its applicability to clinical and community-based research. The role of dissemination research and implementation sciences in the translational research spectrum will be a key focus. Translation research involves the study of how best to transfer evidence-based knowledge into routine or representative practice, and by definition requires involvement and input of the end-user. Thus, a key focus will be on examining different study designs in dissemination research and implementation science, and the strengths and limitations of different methodological approaches. Because students obtain specific methods training in other courses throughout the curriculum, the focus of this course is on critical appraisal of the appropriateness of the methods used relative to the study question and the implications of the study design for translating evidence into practice.

AUDIENCE

The course is designed for advanced masters-level and doctoral-level students in medicine, public health, and other health professions, as well as advanced students in public policy,

sociology, psychology or other social sciences with plans for a career in health research. Prerequisites are a graduate course in epidemiology, a graduate course in statistics, and permission of instructor.

COURSE OBJECTIVES

The primary goals of this course are to enhance students' knowledge of dissemination research and implementation science and their ability to critically evaluate studies focused on dissemination research and implementation science. More specifically, students who successfully complete the course will be able to:

1. Discuss the theoretical underpinnings of dissemination research and implementation science,
2. Explain barriers to dissemination and implementation of research findings and methods to address those barriers,
3. Describe the major categories of study designs that are used in conducting dissemination and implementation science and the role of and strategies for engaging key stakeholders, including clinicians and policymakers in the research process,
4. Describe the importance of contextual factors and assessing multiple outcomes when designing dissemination and implementation studies, and
5. Critically evaluate dissemination research and implementation studies by assessing the strengths and limitations of the study design and measures selected for informing health care decision making in real world settings.

Course Evaluation

Students are expected to provide feedback on the quality of instruction in this course by completing online evaluations at <https://evaluations.ufl.edu>. Evaluations are typically open during the last two or three weeks of the semester, but students will be given specific times when they are open. Summary results of these assessments are available to students at <https://evaluations.ufl.edu/results/>.

METHODS OF INSTRUCTION

We will operate as an advanced graduate seminar, with students taking an active role in initiating and leading discussions and debates. Attendance and active participation in all class discussions is required, and will be evaluated as part of the student's grade for the course. Students must read the required readings prior to each class session.

TESTS

No exams will be given in this graduate-level seminar course.

TERM PAPER

There is no term paper in this course.

ASSIGNMENTS

The following will be used to assess students' progress in achieving the course objectives:

- 1. Readings and Class Discussions.** You must read the assigned readings prior to each class session and be prepared to discuss your reactions, thoughts, analysis, comments and questions on

the main issues raised in the readings. Share what strikes you as new, unexpected, or particularly important. Discuss implications of that reading for your scientific work. All students are expected to participate in each class discussion. In some cases, an out-of-class discussion activity will be assigned. In the week following the lecture for which it is assigned, you are to read the article or watch the video provided and post your reactions on the course discussion board on Canvas.

2. Case Study Presentation. Each student will identify a current or past dissemination or implementation science project (or both) and prepare a 20 minute presentation with 10 minutes for questions. Presentation should address:

1. The primary research question(s) and their importance for the field of study;
2. Relevant contextual information, including the study setting and population and descriptions of the organizations involved in the project (e.g., structure, purpose, function);
3. Research study design, key measures, theoretical framework and data collection strategies;
4. Critical appraisal of the relative strengths and limitations of the approach; and
5. A proposal to improve, adapt or expand on the identified project, including primary research questions, importance for the field of study, relevant contextual information, research study design, key measures, and data collection strategies.

To avoid duplication of topics/projects, *students will submit the topic of their presentation to the instructor by the end of the second week of class.*

Each student is expected to ask at least 2 questions throughout the presentations.

Duplication of topics will be addressed with the relevant students, where priority will be given to the student who notified the instructor first.

3. Brief Proposal and Presentation. One brief research proposal will be required for this course, written in an abbreviated format of a NIH proposal, including Specific Aims, Background, and Research Design and Methods sections. Your proposal may be for a dissemination study, implementation study, or both. The proposals should be single-spaced, 11 point Arial font, ½-inch margins, and four pages maximum (excluding references). The proposals should be formatted to follow NIH guidelines. You will present your proposal to the class (30 minute presentation + 10 minutes for questions).

Each student is expected to ask at least 2 questions throughout the presentations.

Proposal Outline:

I. Specific Aims (1/2 page)

II. Research Strategy

a. Significance & Innovation (1/2 page)

- b. Approach (3 pages)
 - i. Research Design (2 pages)
 - ii. Measurement (1 page)

III. Literature Cited

Presentation guidelines:

You should prepare a well-designed set of slides in a PowerPoint file, which you will use during your presentation and will email to the entire class the day before your presentation (so people can print a copy prior to the class, if they wish). Design each visual carefully to illustrate the main points. Remember the rules for clear, easy to understand, and interesting slides: No more than 8 words per line, and no more than 8 lines on a slide; prevalent use of diagrams, charts, etc. to illustrate points; minimize the number of word-only slides; and aim for about one slide per minute.

EVALUATION AND GRADING

Grades will be based on attendance and participation in discussions (20%); case study presentation (40%); and brief research proposal and presentation (40%). All deadlines must be met. Any assignment turned in after the deadline will receive one grade below what it would have earned had it been submitted on time. Grades will be assigned as follows:

Letter Grade	Grade Points	Grade Percentage
A	4.0	95-100
A-	3.67	90-94
B+	3.33	87-89
B	3.0	83-86
B-	2.67	80-82
C+	2.33	77-79
C	2.0	73-76
C-	1.67	70-72
D+	1.33	67-69
D	1.0	63-66
D-	.67	60-62
E	0	59 and below

For additional grading policy information, you may visit the undergraduate catalog web page at <http://www.registrar.ufl.edu/catalog/policies/regulationgrades.html>.

COURSE POLICIES

Students are expected to adhere to the following course policies.

Class Attendance

Class attendance is required. Excused absences follow the criteria of the UFL Graduate Catalogue (e.g., illness, serious family emergency, military obligations, religious holidays), and

should be communicated to the instructor prior to the missed class day when possible. UFL rules require attendance during the first two course sessions, and students also must attend all course sessions of student presentations for this class. Missing more than three scheduled sessions will result in a failure. Regardless of attendance, students are responsible for all material presented in class and meeting the scheduled due dates for class assignments. Finally, students must read the assigned readings *prior to* the class meetings, and be prepared to discuss the material.

Class Decorum

Please: (1) be on time, (2) respect others' points of view, (3) listen quietly when others are speaking, and (4) turn off cell phones, alarms, and other such distractions.

CANVAS

Course information, readings, and grades are available on Canvas at <http://lss.at.ufl.edu/>. You must have a Gatorlink account to log on. *You are expected to check the web site on a regular basis* (i.e., *at least* one day prior to each class meeting).

Returned Assignments

Keep copies of all assignments that you submit and of all grades until you receive official notification of your final course grade.

Policy on Make-Up Work

Students are allowed to make up work only as the result of illness or other unanticipated circumstances. In the event of such emergency, documentation will be required in conformance with university policy. Work missed for any other reason will earn a grade of zero.

Accommodations for Students with Disabilities

Students requiring accommodations must first register with the Dean of Students' Office. The Dean of Students' Office will provide documentation to the student who must then provide this documentation to the faculty member when requesting accommodation. The College is committed to providing reasonable accommodations to assist students in their coursework.

TEXTBOOK

Brownson, R.C., Colditz, G.A. & Proctor, E.K. (Eds). *Dissemination and Implementation Research in Health: Translating Science to Practice*, New York: Oxford University Press, 2012.

SCHEDULE OF TOPICS AND READINGS

Class 1, January 6 - Introduction to Dissemination and Implementation Science (Case and Theis)

Class 2, January 13 - Introduction to Dissemination and Implementation Science, continued (Case)

Readings:

- Chapter 1: Colditz, GA. The promise and challenges of dissemination and implementation research.

- Chapter 2: Rabin, B.A. & Brownson, R.C. Developing the terminology for dissemination and implementation research.
- Chapter 3: Dearing, J.W. & Kee, K.F. Historical roots of dissemination and implementation science.
- Woolf, S.H. (2008). The meaning of translational research and why it matters. *JAMA*, 299(2): 211-213.

Out-of-Class Discussion Activity:

Watch the videocast of the lecture:

Cameron, R. (2009). "Beyond dissemination and implementation research: Integrating evidence into action". Presented at the 2nd Annual NIH Conference on the Science of Dissemination and Implementation: Building Research Capacity to Bridge the Gap from Science to Service, January 29, 2009.

<http://videocast.nih.gov/summary.asp?Live=7408&bhcp=1>

Post your reactions to this lecture on the class discussion board in CANVAS by March 19, 2013.

Class 3, January 20 – Research Design in Dissemination and Implementation Research (Theis)

Readings:

- Chapter 4: Glasgow, R.E. & Steiner, J.F. Comparative effectiveness research to accelerate translation: Recommendations for an emerging field of science.
- Chapter 12: Landsverk, J. et al. Design and analysis of dissemination and implementation research.
- Damschroder et al. (2009). Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. *Implementation Science*, 4:50.

Case Study Presentation topics due by the end of the week.

Class 4, January 27 – Research Design in Dissemination and Implementation Research, Continued (Case)

Readings:

- Collins, L.M., Murphy, S.A. & Strecher, V. (2007). The Multiphase Optimization Strategy (MOST) and the Sequential Multiple Assignment Randomized Trial (SMART): New methods for more potent eHealth Interventions. *American Journal of Preventive Medicine*, 32: S112-S118.
- Hawkins, N.G., Sanson-Fisher, R.W., Shakeshaft, A., D'Este, C. & Green, L.W. (2007). The multiple baseline design for evaluating population-based research. *American Journal of Preventive Medicine*, 33(2): 162-168.

Class 5, February 3 – Measurement & Evaluation Approaches for Dissemination and Implementation Research (Theis)

Readings:

- Chapter 13: Proctor, E.K. & Brownson, R.C. Measurement issues in dissemination and implementation research.
- Chapter 15: Green, L.W. & Nasser, M. Furthering dissemination and implementation research: The need for more attention to external validity.
- Chapter 16: Gaglio, B. & Glasgow, R.E. Evaluation and approaches for dissemination and implementation research.

Class 6, February 10 – Measurement & Evaluation Approaches for Dissemination and Implementation Research, Continued (Case)

- Chapter 14: Allen, J.D. et al. Fidelity and its relationship to implementation effectiveness, adaptation and dissemination.
- We will use these two methods to apply to the WIN Study. Please read both papers and think about how to use these models in research
 - Application of the RE-AIM Model: Krist AH, Aycock RA, Etz RS, Devoe JE, et al (2014). .MyPreventiveCare: implementation and dissemination of an interactive preventive health record in three practice-based research networks serving disadvantaged patients-a randomized cluster trial. *Implement Sci.* 2014 Dec 11;9(1):181. doi: 10.1186/s13012-014-0181-1.
 - PRECIS Model: Kevin E. Thorpea, Merrick Zwarensteinb, Andrew D. Oxmanc, et al (2009). A pragmatic explanatory continuum indicator summary (PRECIS): A tool to help trial designers, *Journal of Clinical Epidemiology* 62
 - Gaglio B1, Phillips SM, Heurtin-Roberts S, Sanchez MA, Glasgow RE. (2014). How pragmatic is it? Lessons learned using PRECIS and RE-AIM for determining pragmatic characteristics of research, *Implement Sci.* 2014 Aug 28;9:96.

Class 7, February 17 - Applied Case Studies (Student Presentations)

Class 8, February 24 - Applied Case Studies (Student Presentations)

Class 9, March 10 – NIH Writing Format and How to use Zotero (Case)

Class 10, March 17 - Guest Lecture on Dissemination and Implementation Science being conducted at the University of Florida

Class 11, March 24 – Contextual Considerations and Future Directions in Dissemination and Implementation Science (Theis)

Readings:

- Chapter 10: Minkler, M. & Salvatore, A.L. Participatory approaches for study design and analysis in dissemination and implementation research.
- Chapter 22: Yancey, A. et al. Dissemination and implementation research in populations with health disparities.
- Chapter 24: Brownson, R.C. The path forward in dissemination and implementation research.
- Glasgow, R.W., et al. (2012). National Institutes of Health approaches to dissemination and implementation science: Current and future directions. *American Journal of Public Health*, 102(7):1274-1281.

Class 12, March 31 – Current Models for Implementation Science (Case)

Readings:

- Acosta JI, Chinman M, Ebener P, Malone PS, Paddock S, Phillips A, Scales P, Slaughter ME. (2013). An intervention to improve program implementation: findings from a two-year cluster randomized trial of Assets-Getting To Outcomes. *Implement Sci.* 2013 Aug 7;8:87

Class 13, April 7 – Student Presentations

Class 14, April 14 – Student Presentations

Class 15, April 21 – Student Presentations

Resources for preparation of 4-page abbreviated proposals:

Specific Aims (1 page is recommended for NIH, *½ page for the class assignment*)

State concisely the goals of the proposed research and summarize the expected outcome(s), including the impact that the results of the proposed research will exert on the research field(s) involved. List succinctly the specific objectives of the research proposed, e.g., to test a stated hypothesis, create a novel design, solve a specific problem, challenge an existing paradigm or clinical practice, address a critical barrier to progress in the field, or develop new technology. Be sure to list the very *specific* few research questions or hypotheses to be tested in the proposed study.

Research Strategy (12 pages are allotted for NIH, *3 ½ pages for the class assignment*)

Significance

Briefly sketch the background leading to the present application, critically evaluate existing knowledge, and specifically identify the gaps that the project is intended to fill. State concisely the importance and health relevance of the research described in this application by relating the specific aims to the broad, long-term objectives. If the aims of the application are achieved, state how scientific knowledge or practice will be advanced. Describe the effect of these studies on the concepts, methods, technologies, treatments, services or preventative interventions that drive the field.

Innovation

Explain how the application challenges and seeks to shift current research or clinical practice paradigms. Describe any novel theoretical concepts, approaches or methodologies, instrumentation or interventions to be developed or used, and any advantage over existing methodologies, instrumentation, or interventions. Explain any refinements, improvements, or new applications of theoretical concepts, approaches or methodologies, instrumentation, or interventions.

Approach

Describe the research design, conceptual or clinical framework, procedures, and analyses to be used to accomplish the specific aims of the project. Include how the data will be collected, analyzed, and interpreted. Describe any new methods and its advantage over existing methods. Describe any novel concepts, approaches, tools, or technologies for the proposed studies. Discuss how threats to validity are addressed by the design. Discuss potential difficulties and limitations of the proposed procedures and alternative approaches to achieve the aims. As part of this section, provide a tentative sequence or timetable for the project. Point out any procedures, situations, or materials that may be hazardous to personnel and the precautions to be exercised.

Proposal Outline (4 pages, single-spaced; note by NIH rules you may use margins as small as ½ inch to maximize space)

- A. Specific Aims (1/2 page or less)
 - a. Broad, long-term objectives of proposed research
 - b. List very specific few research questions or hypotheses to be tested
- B. Research Strategy (3 ½ pages)

- a. Significance
 - i. Critically evaluate existing knowledge
 - ii. Specifically identify gaps that project is intended to fill
 - iii. State concisely the importance and health relevance of the proposed research
 - b. Innovation
 - i. How research will challenge or shift current research or clinical practice paradigms
 - ii. Describe novel developments of, or refinements to, theoretical concepts, approaches/methodologies, instrumentation or interventions
- C. Approach
- a. Introduction: summary of design and methods
 - b. Study design
 - i. Overview of study design (include diagram)
 - ii. General timeline
 - c. Target population, eligible study sample, recruitment, retention strategies
 - d. Intervention description
 - i. Theory/conceptual model
 - ii. Description
 - iii. Implementation
 - e. Evaluation Overview
 - i. Outcome and intermediate measures
 - 1. Description of each measure
 - 2. Data collection protocol (for each measure)
 - ii. Process measures to measure intervention implementation
 - f. Summary of design, discuss any limitations of study, and highlight how design features address threats to validity
- D. Literature cited
- a. Use AMA or APA guidelines, be accurate and consistent

Reference/citation guidelines:

Students will be taught to use Zotero. This free software is a great new tool to organize your references and instantly make reference lists!

NIH R01 Instructions from website:

<http://grants1.nih.gov/grants/funding/424/index.htm>