Graduate School of Biomedical Sciences
CTS 736
Conducting Implementation Research: Designing and Executing Studies for Moving Research into Practice in Healthcare and Community Settings

Syllabus
Spring 2018

MEETING TIME: Tuesdays 1-3pm
LOCATION: AS8-2069
COURSE CREDIT: 2 credit hours
BEGIN DATE: January 23, 2017
END DATE: May 8, 2017 (15 weeks)

FACULTY:

Professors: Timothy P. Hogan, PhD
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Timothy P. Hogan, PhD, earned both his PhD and MS in Library and Information Science from the University of Illinois at Urbana-Champaign and his BS in Information Science from the University of Pittsburgh. He also completed a two-year VA Postdoctoral Fellowship in Health Services Research at VA's Center of Innovation for Complex Chronic Healthcare. He is currently Director of VA's eHealth Partnered Evaluation Initiative, Research Health Scientist at VA's Center for Healthcare Organization

and Implementation Research, and faculty within the Division of Health Informatics and Implementation Science at the University of Massachusetts. Dr. Hogan's expertise lies in the areas of consumer health informatics, Implementation Science, and research methods, specifically primary data collection and analysis techniques and the application of mixed method designs. His research focuses on individuals living with complex, chronic conditions and the implementation of consumer health informatics systems to support access to care, service delivery, and self-management.

Thomas K. Houston, MD, MPH, is founder of the Division of Health Informatics and Implementation Science at the University of Massachusetts, and a senior scientist at VA's Center for Healthcare Organization and Implementation Research. Dr. Houston's research focuses on the intersection of applied health informatics and behavior change. Over the past decade, he has maintained a funded program in both patient-centered eHealth research and provider-facing clinical informatics studies supported by VA, AHRQ, NIH (NHLBI and NCI), the Bayer Institute for Healthcare Communication, and Robert Wood Johnson Foundation. He has studied the implementation and effectiveness of computer tailored patient education, provider decision support, and quality improvement using Internet interventions, and doctor-patient electronic messaging.

Stephenie Lemon, PhD, earned her PhD in Epidemiology from Brown University, her MS in Epidemiology and BS in Psychology from the University of Massachusetts. She is the Director of the Worcester County Prevention Research Center, which establishes local capacity to conduct community-based participatory research addressing obesity and associated chronic conditions. Dr. Lemon is also an active member of the Massachusetts Comprehensive Cancer Coalition Advisory Committee and its Survivorship Working Group and the Common Pathways Coalition. Her research addresses the translation of evidence-based programs and policies in real world settings; community-based participatory research; health promotion in under-served populations; worksite health promotion; physical activity policy research; and the influence of social norms and social networks on health behaviors.

SUPPORT:

Assistant: Daniel Amante, MPH, PhD
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PRE-REQUISITE(S): CTS 735 or permission from instructor

COURSE DESCRIPTION: This class builds on the foundation offered in CTS 735 regarding salient concepts and theories in the field of Implementation Science to examine key issues in the design and conduct of implementation research. Students will learn about prominent study designs that characterize many implementation trials, the important role that formative assessment plays in informing implementation efforts and the issues inherent in identifying and measuring appropriate implementation processes and outcomes. Course content and readings are organized to reflect these areas.

The assignments for this course are intended to be both conceptual and pragmatic. Students will critique published implementation trials, examine approaches to formative assessments and measurement that may inform their own research program, and share what they are learning with their classmates in a kind of "workshop" forum. For the final assignment, students will build upon the ideas they developed in their work for the prerequisite course (CTS 735 – Introduction to

Implementation Science) to write a more refined and complete proposal for an implementation research project they are interested in pursuing. In particular, the inclusion of appropriate study designs, measures, and data collection and analysis methods will be emphasized. This will be an opportunity for students to further develop and refine their proposal writing skills. They will also be asked to present their final proposals at the end of the semester.

COURSE FORMAT: Course objectives will be met through class presentations, class discussion, a series of written assignments, and a final project. Requirements for assignments will be reviewed prior to their due dates. Student feedback on assignments is welcome and will be sought in an effort to continuously refine and improve course structure and content.

COURSE OBJECTIVES: Over the duration of this course, students will:

- Explore foundational perspectives and contemporary research in implementation science, including efforts to implement interventions and evidence-based practices in healthcare and community settings
- Recognize the central role that context, including the characteristics of specific settings and populations, plays in designing and conducting implementation research
- Appreciate the contributions of different data collection and analysis techniques to implementation research, including quantitative, qualitative, and mixed methods
- Understand prominent and commonly used study designs in implementation research, including their respective pros and cons, and be able to select among them for a study
- Examine the role of formative assessments in informing and guiding implementation studies and explore different approaches and tools for conducting such assessments
- Appreciate the importance of evaluating processes in implementation studies and gain knowledge of process evaluation techniques and measures
- Understand the importance of measurement in implementation research, and the considerations involved in identifying and selecting measures for a particular study
- Understand how outcomes are conceptualized in implementation research and what is encompassed in summative evaluations
- Develop skills that support the reading and critical evaluation of published implementation research studies
- Demonstrate proficiency in conceptualizing and describing an implementation trial on a topic of your choosing, particularly relevant study design and methodological aspects

In summary, this course is intended to provide basic methodological foundation that is essential to designing and conducting high quality implementation research.

COURSE REQUIREMENTS: Students are required to complete the readings and assignments, and to attend and actively participate in each class session. It is strongly recommended that you complete all readings prior to each class. Some readings will be explicitly discussed in class. Others may not be specifically referenced during class; however the concepts covered in these readings will reinforce, illustrate or expand on critical concepts. Our goal is to foster a strong and open learning environment by helping each other grasp the assigned readings, engaging in discussion, articulating thoughts and perspectives related to the course themes, sharing other relevant resources encountered, and providing updates on our respective assignments. Student must notify the instructors of absences as far in advance as possible.

Assignments must be typed and submitted via email by 12:00pm (noon) on their respective due dates. In some cases, we will discuss them together at an upcoming class session. They will be evaluated based on the extent of thought and analysis they represent, indication that important concepts have

been grasped, evidence that appropriate resources (i.e., scholarly literature, other relevant materials) have been used, and the meaningful organization and presentation of content. Late assignments will not be accepted unless prior approval is secured from the instructors.

Students are required to adhere to an accepted style when citing other works and preparing reference lists as part of their assignments (e.g., American Psychological Association style; Uniform Requirements for Manuscripts (URM) Submitted to Biomedical Journals; etc.). What is most important is that you consistently apply the rules of your chosen style throughout your assignments.

COURSE MATERIALS: There are no required textbooks for this course. Scholarly articles and other publications representing different perspectives on implementation science will comprise the bulk of the assigned readings for this class. Most readings will be available via electronic journals accessible via the Web or from the UMass library system.

ASSIGNMENTS and GRADING: See the end of the syllabus for more details regarding each class assignment.

- Class Participation (20 points); ongoing
- Critique and Presentation of an Implementation Trial (10 points); students given a due date
- Formative Assessment Workshop Contribution – expert for the week (20 points); due Week 5
- Process Evaluation Workshop Contribution – expert for the week (20 points); due Week 8
- Final Project Proposal and Class Presentation (30 points); class presentations and proposals due Weeks 14, 15

Assignments will be graded using the following criteria:
20% Overall organization
40% Clarity of presentation/ writing style
40% Content/ critical thinking

GRADING SCALE: The grading scale for this course is as follows.

Grade	Course Points
A	90 – 100
B	80 – 89.99
C	70 – 79.99

UMASSMED STATEMENT ON AMERICANS WITH DISABILITIES ACT: The University of Massachusetts Medical School (UMMS) is firmly committed, to the extent possible, to providing full access to individuals with disabilities and to covered veterans of the U.S. armed services. (The term "covered" refers to veterans who served in campaigns and those who received any campaign and/or expedition medals.) In so doing, UMMS intends to fully comply with the Americans with Disabilities Act (ADA) of 1990, EEOC guidelines, the Veterans' Employment Opportunity Act of 1998 (P.L. 105-339), and UMMS Human Resources policies. The Academic Accommodations Committee designs and monitors individual accommodation plans for students with disabilities and makes accommodations in compliance with ADA. If you have a disability that may require accommodations to complete the work in the class, please review the following website http://www.umassmed.edu/ADA/index.aspx. Please be advised that while students can apply for ADA accommodations at any time, they are not retroactive.

UMASSMED GSBS HONOR CODE: In accepting admission to the Graduate School of Biomedical Science (GSBS), students make a personal commitment to abide by an Honor Code exemplifying a standard of behavior that will form a firm basis of future professional conduct as well as respecting the academic environment of the University of Massachusetts Medical School (UMMS). Each student, upon admission to the University, shall sign a document attesting to the fact that he/she understands the Honor Code and shall abide by it. The Honor Code applies to all aspects of the graduate student's education, including coursework and research. All student behavior that shows a lack of intellectual honesty or integrity is a violation of the Honor Code.

The Honor Code in its entirety can be reviewed within the GSBS Student Handbook the Web at: http://www.umassmed.edu/uploadedFiles/gsbs2/Students-Faculty/Student%20Handbook.pdf

Honor System must be upheld and enforced by each member of the University community. The Honor Code is designed to communicate the importance and meaning of our ethical standards.

STATEMENT ON SAFETY: The University of Massachusetts Police Department in Worcester is committed to provide a safe and secure environment in which students, faculty, staff, patients and visitors can conduct their activities. The University of Massachusetts Medical School considers safety of the campus community important and seeks to have all members of the campus community play a role in this regard. The emergency notification system combines all of the University's notification tools into a single system called UMass Alerts. Members of the campus community are encouraged to register their email address and/or cell phone for text messages at the address below.
https://csfvoif01p.umassp.edu/sso/jsp/salogin.jsp?doneURL=/user/loginsso&refID=id-VNPKRk9U9QOdtmEVM8Vqf7QpmoE-&forceauthn=false
University police officers are available 24 hours a day, seven days a week and are based in the police station located on the main level of the South Road parking garage. If you see a crime in progress, **call 911**. To report a tip related to a crime follow directions provided here:
http://www.umassmed.edu/Content.aspx?id=170934&linkidentifier=id&itemid=170934

EMERGENCY CONTACT INFORMATION: For school closings due to inclement weather, check http://www.umassmed.edu/weather/index.aspx or call the **Campus Status Phone Line 508-856-4000.**

UMASSMED GSBS IMPORTANT DATES: Important dates for this semester are available at:
http://www.umassmed.edu/gsbs/studentsfaculty/academic_calendar.aspx

Week	Date	Topic	Assignments and/or In-Class Activities	Readings
1	Jan 23	Course overview Appreciating pragmatic considerations and mixed methods in implementation research	Lecture: Tom Houston, Stephenie Lemon, Tim Hogan	Aarons, G. A., Fettes, D. L., Sommerfeld, D. H., & Palinkas, L. A. (2012). Mixed methods for implementation research: Application to evidence-based practice implementation and staff turnover in community-based organizations providing child welfare services. *Child maltreatment*, 17(1), 67-79. Glasgow, R. E. (2013). What does it mean to be pragmatic? Pragmatic methods, measures, and models to facilitate research translation. *Health Education & Behavior*, 40(3), 257–65. Palinkas, L.A., Aarons, G.A., Horwitz, S., Chamberlain, P., Hurlburt, M. & Landsverk, J. (2011). Mixed method designs in implementation research. *Administration and Policy in Mental Health and Mental Health Services Research,* 38(1), 44-53.
2	Jan 30	Formative assessments – understanding contexts of implementation	Lecture: Tim Hogan	Curran, G.M., Mukherjee, S., Allee, E. & Owen, R.R. A process for developing an implementation intervention: QUERI Series. *Implementation Science,* 3:17. Hagedorn, H., Brown, R., Dawes, M., Dieperink, E., Myrick, D.H., Oliva, E.M., et al. (2016). Enhancing access to alcohol use disorder pharmacotherapy and treatment in primary care settings: ADaPT-PC. *Implementation Science,* 11:64. Stetler, C.B., Legro, M.W., Wallace, C.M., Bowman, C., Guihan, M., Hagedorn, H. et al. (2006). The role of formative evaluation in implementation research and the QUERI experience. *Journal of General Internal Medicine*, 21(Suppl 2):S1-S8.
3	Feb 6	Formative assessments –	Lecture: Tim Hogan	Bokhour, B.G., Saifu, H., Goetz, M.B., Fix, G.M., Burgess, J., Fletcher, M.D., et al.

		techniques and approaches		(2015). The role of evidence and context for implementing a multimodal intervention to increase HIV testing. *Implementation Science,* 10:22. Brown, A.H., Cohen, A.N., Chinman, M.J., Kessler, C., Young, A.S. (2008). EQUIP: Implementing chronic care principles and applying formative evaluation methods to improve care for schizophrenia. *Implementation Science,* 3:9. Curran, G.M., Pyne, J., Fortney, J.C., Gifford, A., Asch, S.M., Rimland, D., et al. (2011). Development and implementation of collaborative care for depression in HIV clinics. *AIDS Care,* 23(12): 1626-36. Optional: Schmid, A.A., Andersen, J., Kent, T., Williams, L.S. & Damush, T. (2010). Using intervention mapping to develop and adapt a secondary stroke prevention program in Veterans Health Administration medical centers. *Implementation Science,* 5:97.
4	Feb 13	Alternative study designs in implementation science	Lecture: Tom Houston	Chaney, E.F., Rubenstein, L.V., Liu, C.F., Yano, E.M., Bolkan, C., Lee, M., et al. (2011). Implementing collaborative care for depression treatment in primary care: a cluster randomized evaluation of a quality improvement practice redesign. *Implementation Science*, 6:121. Taljaard, M., McKenzie, J.E., Ramsay, C.R. & Grimshaw, J.M. (2014). The use of segmented regression in analysing interrupted time series studies: An example in pre-hospital ambulance care. *Implementation Science,* 9:77. Thorpe, K., Zwarenstein, M., Oxman, A.D., Treweek, S., Furberg, C.D., Altman, D.G. et al. (2009). A pragmatic-explanatory continuum indicator summary (PRECIS): a tool to help trial designers. *Journal of Clinical Epidemiology*, 62(5):464-475.

5	Feb 20	Formative Assessment Workshop - Student Presentations	Due: Formative Assessment Workshop Contribution Tom Houston, Stephenie Lemon, Tim Hogan	
6	Feb 27	Examining implementation processes – understanding fidelity, the experiences of stakeholders, and the work of change	Lecture: Stephenie Lemon	Carroll, C., Patterson, M., Wood, S., Booth, A., Rick, J. & Balain, S. (2007). A conceptual framework for implementation fidelity. *Implementation Science*, 2:40. Kennedy, A., Rogers, A., Chew-Graham, C., Blakeman, T., Bowen, R., Gardner, C., et al. (2014). Implementation of a self-management support approach (WISE) across a health system: A process evaluation explaining what did and did not work for organisations, clinicians and patients. *Implementation Science,* 9:129. Sales, A.E., Fraser, K., Baylon, M.A.B., O'Rourke, H.M., Gao, G., Bucknall, T. & Maisey, S. (2015). Understanding feedback report uptake: Process evaluation findings from a 13-month feedback intervention in long-term care settings. *Implementation Science*, 10:20
7	Mar 6	Examining implementation processes – measurement and its challenges	Lecture: Stephenie Lemon	Chamberlain, P., Brown, C.H. & Saldana, L. (2011). Observational measure of implementation progress in community based settings: The stages of implementation completion (SIC) *Implementation Science*, 6:116. Chaudoir, S.R., Dugan, A.G. & Barr, C.H. (2013). Measuring factors affecting implementation of health innovations: A systematic review of structural, organizational, provider, patient, and innovation level measures. *Implementation Science,* 8:22.

				Proctor, E., Silmer, H., Raghavan, R., Hovmand, P., Aarons, G., Bunger, A., Griffey, R., & Hensley, M. (2011). Outcomes for implementation research: Conceptual distinctions, measurement challenges, and research agenda. *Administration and Policy in Mental Health,* 38(2): 65-76.
	Mar 13	GSBS Spring Week		
8	Mar 20	Process Evaluation and Measurement Workshop - Student Presentations	Due: Process Evaluation and Measurement Workshop Contribution Tom Houston, Stephenie Lemon, Tim Hogan	
9	Mar 27	Alternative study designs in implementation science	Lecture: Tom Houston	Bartels, S., Brunette, M., Aschbrenner, K. & Daumit, G. (2015). Implementation of a system-wide health promotion intervention to reduce early mortality in high risk adults with serious mental illness and obesity. *Implementation Science* 10(Suppl 1):A15. Crain, A.L., Solberg, L.I., Unützer, J., Ohnsorg, K.A., Maciosek, M.V, Whitebird, R., et al. (2013). Designing and implementing research on a statewide quality improvement initiative: the DIAMOND study and initiative. *Medical Care*, 51(9), e58–66. Levine, D.A., Funkhouser, E.M., Houston, T.K., Gerald, J.K., Johnson-Roe, N., Allison, J.J., Richman, J. & Kiefe CI. (2011). Improving care after myocardial infarction using a 2-year internet-delivered intervention: the Department of Veterans Affairs myocardial infarction-plus cluster-

				randomized trial. *Archives of Internal Medicine,* 171(21):1910-7. Moscoe, E., Bor, J. & Barnighausen, T. (2015). Regression discontinuity designs are underutilized in medicine, epidemiology, and public health: A revew of current and best prtice. *Journal of Clinical Epidemiology,* 68(2):122-33.
10	Apr 3	Hybrid effectiveness-implementation study designs	Lecture: Tim Hogan	Cully, J.A., Armento, M.E.A., Mott, J., Nadorff, M.R., Naik, A.D., Stanley, M.A., Sorocco, K.H., Kunik, M.E., Petersen, N.J., Kauth, M.R. (2012). Brief cognitive behavioral therapy in primary care: A hybrid type 2 patient-randomized effectiveness-implementation design. *Implementation Science,* 7:64. Curran, G.M., Bauer, M., Mittman, B., Pyne, J.M., Stetler, C. (2012). Effectiveness-implementation hybrid designs: Combining elements of clinical effectiveness and implementation research to enhance public health impact. *Medical Care*, 50(3), 217-226. Martino, S., Zimbrean, P., Forray, A., Kaufman, J., Desan, P., Olmstead, T.A., et al. (2015). See one, do one, order one: A study protocol for cluster randomized controlled trial testing three strategies for implementing motivational interviewing on medical inpatient units. *Implementation Science,* 10:138.
11	Apr 10	Summative evaluations - understanding outcomes	Lecture: Tom Houston	Habicht, J.P., Victora, C.G. & Vaughn, J.P. (1999). Evaluation designs for adequacy, plausibility, and probability of public health programme performance and impact. *International Journal of Epidemiology*, 28, 10-18. Rycroft-Malone, J., Seers, K., Crichton, N., Chandler, J., Hawkes, C.A., Allen, C., et al. (2012). A pragmatic cluster randomised trial evaluating three implementation interventions. *Implementation Science*, 7:80.

				Solberg, L.I., Crain, A.L., Maciosek, M.V., Unützer, J., Ohnsorg, K.A., Beck, A., et al. (2015). A stepped-wedge evaluation of an initiative to spread the collaborative care model for depression in primary care. *Annals of Family Medicine*, Sep;13(5):412-20. Optional: Painter, J.T., Fortney, J.C., Gifford, A.L., Rimland, D., Monson, T., Rodriguez-Barradas, M.C., et al. (2015). Cost-effectiveness of collaborative care for depression in HIV clinics. *Journal of Acquired Immune Deficiency Syndromes,* Dec 1;70(4):377-85.
12	Apr 17	Budget impact analysis	Guest speaker: Bridget Smith	Damschroder, DJ, Moin, T, Datta, SK, Reardon, CM, Steinle, N, Weinreb, J, et al. (2015). Implementation and evaluation of the VA DPP clinical demonstration: protocol for a multi-site non-randomized hybrid effectiveness-implementation type III trial. *Implementation Science*, 10:68. Liu CF, Rubenstein LV, Kirchner JE, Rortney JC, Parkins MW, Ober SK, et al. (2009). Organizational Cost of Quality Improvement for Depression Care. *Health Services Research,* 44:225–44. Sullivan SD, Mauskopf JA, Augustovski F, Jaime Caro J, Lee KM, Minchin M, Orlewska E, Penna P, Rodriguez Barrios J-M, Shau W-Y. (2014). Budget Impact Analysis-Principles of Good Practice: Report of the ISPOR 2012 Budget Impact Analysis Good Practice II Task Force. *Value Health*, 17:5–14.
13	Apr 24	Scaling up	Lecture: Tim Hogan	Chamberlain, P., Roberts, R., Jones, H., Marsenich, L., Sosna, T., & Price, J. M. (2012). Three collaborative models for scaling up evidence-based practices. *Administration and Policy in Mental Health*, 39(4), 278–90. Milat, A.J., Bauman, A. & Redman, S. (2015). Narrative review of models and success

				factors for scaling up public health interventions. *Implementation Science,* 10:113. Massoud MR, Donohue KL, and McCannon CJ. (2010). Options for Large-scale Spread of Simple, Highimpact Interventions. Technical Report. Published by the USAID. Optional: Simmons, R., Fajans, P. & Ghiron, L. (2007). Scaling up health service delivery: From pilot innovations to policies and programmes. Available: http://www.who.int/immunization/hpv/deliver/scalingup_health_service_delivery_who_2007.pdf
14	May 1	Student presentations	Due: Final Project Presentations Tom Houston, Stephenie Lemon, Tim Hogan	
15	May 8	Optional consultation hours for proposal development	Due: Final Project Proposals (end of the week) Consultation Hours: Tim Hogan	

Assignment #1: Critique and Presentation of an Implementation Trial

Overview
This assignment provides an opportunity to explore and share with others an exemplary implementation study that is of interest to you.

Description
Spend some time searching the contents of the journal *Implementation Science*. Identify an implementation trial published in the journal that is of interest to you. Your reasons for selecting a particular trial may be diverse – for example, the trial could address a content area or health issue that interests you, or the trial may use a particular type of design or approach to measurement that is relevant to your own research program.

Once you have selected your implementation trial, spend some time doing a thorough reading and review of the article. After you complete your review, develop a one-page critique of the implementation trial.

Your critique should provide an overview of the study, including its specific objectives, design, approach to data collection, measurement, and analysis, and key findings. You should also comment on any strengths, weaknesses, and points of confusion or interest that emerged for you. You may choose to use tables, figures, or other content in your critique to help convey the essence of the trial.

You will present your trial to the class (and share copies of your critique) on an assigned week during the semester. We will select our trials and presentation weeks early in the course. The goal will be to highlight aspects of the trial that tie to the main content areas addressed in the course.

Grading
The Presentation and Critique of an Implementation Trial is worth 10 points.

Deadline
Submit your assignment to Daniel Amante, Ariana Kamberi, and Timothy Hogan by 12:00pm (noon) on Tuesday of your assigned week.

Assignment #2: Formative Assessment Workshop Contribution

Overview
As noted by prominent implementation scientists, formative assessments play a critical role in the success of efforts to change practice or implement an intervention. A well-conducted formative assessment can, for example, help you understand important characteristics of a setting that will influence implementation, including inhibiting and facilitating factors, and also inform the design of effective implementation strategies. Yet formative assessments are not defined by one approach or technique; there are many "tools" available to implementation scientists. Selecting among them requires a basic understanding of their characteristics.

Description
For this assignment, reflect on the implementation project or line of research that you started in our previous course (CTS 735). Consider the role that formative assessment could play or the kinds of contributions that formative assessment activities could make to the larger success of your project.

With those ideas in mind, coupled with what we have read and discussed in class, identify a formative assessment approach/technique/method that is relevant to your project and do a "deep-dive" to learn more about it. Your task in this assignment is to learn about the approach/technique/method both for the purposes of your own work, and to also educate the class about it.

In Week 7 of our course, we will have a Formative Assessment Workshop where students will present on the approach/technique/method that they explored and how it may contribute to their line of research. To support your presentation to the class, you may choose to develop a brief slide presentation, a handout, or other supportive materials (be creative!) that will offer others in class some basic foundation and accompanying resources should they want to use the approach/technique/method themselves, as part of their work.

In addition to the materials that you develop to share with class, develop a 2-3 page synthesis of what you learned. Your synthesis could include, but is not limited to, a discussion of pros and cons associated with the approach/technique/method you chose, how it fits within your work, and any questions you are still left with after this assignment.

Grading
The Formative Assessment Workshop Contribution is worth 20 points.

Deadline
Submit your assignment to Daniel Amante, Ariana Kamberi, and Timothy Hogan by 12:00pm (noon) on Tuesday of Week 5.

Assignment #3: Process Evaluation and Measurement Workshop Contribution

Overview

Much implementation research is characterized by a focus not only on outcomes, but understanding and measuring implementation processes. Indeed, to paraphrase prominent implementation scientists – the goal is often to learn what implementation works where, when, and why. These kinds of insights are only possible when thoughtful process evaluations are conducted as part of larger implementation trials.

Similar to formative assessments, there are various approaches, techniques, and measures that can be used to support rigorous process evaluations. For this assignment, reflect again on the implementation project or line of research that you started in our previous course (CTS 735). This time, consider the role that process evaluation and related measurement could play or the kinds of contributions that a rigorous process evaluation could make to the larger success of your project.

With those ideas in mind, coupled with what we have read and discussed in class, identify an approach/technique/measure related to process evaluation that is relevant to your project and do a "deep-dive" to learn more about it. As in Assignment 2, your task is to learn about the approach/technique/measure both for the purposes of your own work, and to also educate the class about it.

In Week 11 of our course, we will have a Process Evaluation and Measurement Workshop where students will present on the approach/technique/measure that they explored and how it may contribute to their line of research. To support your presentation to the class, you may choose to develop a brief slide presentation, a handout, or other supportive materials (be creative!) that will offer others in class some basic foundation and accompanying resources should they want to use the approach/technique/measure themselves, as part of their work.

In addition to the materials that you develop to share with class, develop a 2-3 page synthesis of what you learned. Your synthesis could include, but is not limited to, a discussion of pros and cons associated with the approach/technique/measure you chose, how it fits within your work, and any questions you are still left with after this assignment.

Similar to Assignment #2, the goal of this assignment is to introduce students to approaches, techniques, and measures that they can use in implementation process evaluations that they may conduct in the course of their own research.

Grading

The Process Evaluation and Measurement Workshop Contribution is worth 20 points.

Deadline

Submit your assignment to Daniel Amante, Ariana Kamberi, and Timothy Hogan by 12:00pm (noon) on Tuesday of Week 8.

Assignment #4: Final Project Proposal

Overview
The importance of Implementation Science is well recognized by many local, state, and federal agencies that provide funding for the pursuit of novel implementation research, and there are many specific calls for implementation research proposals.

Description
Building upon the ideas developed in your work for the prerequisite course (CTS 735 – Introduction to Implementation Science), for this final assignment, you will develop a more refined and complete proposal for an implementation research project of your choice. In particular, the inclusion of appropriate study designs, measures, and data collection and analysis methods will be closely evaluated. The previous course assignments this semester have been intended to facilitate early thinking about the final proposal.

In an effort to continue improving our grantsmanship and writing skills, proposals are expected to be similar in content and form to one that might be submitted to a formal funding agency, including sections of a typical proposal narrative. As noted above, particular attention should be paid in this submission to rigorous and detailed descriptions of study designs, measures, and approaches to data collection and analysis for your project.

Your proposal should run about 10 single-spaced (12-point font, one-inch margins) pages, not including the reference list or any additional appendices that you wish to include.

Grading
The Final Project Proposal is worth 30 points.

You will also be expected to give a 10-15 minute presentation of your proposal during one of the final sessions of the class. Assume the audience for your presentation is potential funders and/or members of a formal review panel.

Deadline
Give you presentation in class during Week 14; submit your assignment to Daniel Amante, Ariana Kamberi, and Timothy Hogan by the end of Week 15 (Friday).