

**M19-559 Dissemination and Implementation Science (3 credits)**

Spring 2020 (01/13/20 – 5/1/20)

Wednesdays, 1 to 4 pm

Location: Taylor Avenue Building

2nd floor, Richmond Room

**INSTRUCTORS**

Rachel Tabak, PhD, RD

TA: TBD

**OFFICE HOURS**

By appointment: rtabak@wustl.edu

**PREREQUISITES**

None

**TARGET AUDIENCE**

Researchers in clinical and population sciences; clinical training program participants; MSPH, MPH, and MSW students; prior research experience is helpful but not required.

**COURSE DESCPRITION & OBJECTIVES**

This course provides an overview of dissemination and implementation (D&I) science (i.e., translational research in health). Topics include the importance and language of D&I science; designs, methods, and measures; differences and similarities across clinical, public health, and policy settings; selected tools for D&I research and practice; and future issues.

**COMPETENCIES**

1. Understand the importance and language of D&I science.
2. Explore the theories and frameworks that are commonly used in D&I research and practice.
3. Describe the importance of context at multiple levels in D&I science
4. Distinguish between implementation strategies and outcomes and those in efficacy and effectiveness research
5. Describe various study designs, methods, and measures that support D&I science.
6. Understand D&I methods and challenges across various settings and populations.
7. Recognize opportunities to apply D&I science to intervention development and evaluation
8. Explore the importance of systems and partnerships in D&I
9. Understand how D&I science can further your research/practice plans and career.

**GRADING**

Your grade will be based on:

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| --- | --- | --- |
| **Assignment** | **Date Due** | **Grade (%)** |
| Webinar assignment | January 29\* | 10% |
| Final Project: Topic Idea | February 5 | 5% |
| Quality gap and evidence base for final project assignment | February 19 | 10% |
| Outline for final project | March 11\* | 15% |
| Final project presentation | April 22\* | 20% |
| Final project paper | April 30\*\* | 35% |
| Active participation (including attendance (50%), class participation (30%) & course evaluations (20%)) | All semester | 5% |
| **TOTAL** |  | **100%** |

\*at the beginning of class; \*\*by 5 pm

Grading Scale

A+: 97-100; A: 93-96; A-: 90-92; B+: 87-89; B: 83-86; B-: 80-82; C+: 77-79; C: 73-76; C-: 70-72

**ATTENDANCE AND PARTICIPATION**

Class attendance is required. As a courtesy to other students, you are expected to arrive on time. More than two unexcused absences from class may result in a lowered grade. Readings assigned for each class should be read ahead of the class and students should be prepared to discuss the material from readings.

**POLICY ON LATE ASSIGNMENTS**

Late assignments will result in a deduction of one grade point (A+ down to A) for each day late (including weekends) unless prior approval is obtained from the instructor or a compelling situation prevents prior approval (i.e. documented health issues or family emergencies).

**ASSIGNMENTS & DUE DATES**

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| --- | --- | --- | --- | --- |
| **Week** | **Date** | **Topic** | **Assignment**  **Due** | **Readings** |
| **Class 1** | Jan. 15 | Rationale for D&I research, overview of the field, continuum of translational research, language  Initial introduction for final project |  | **Core:**  Ch. 1: Colditz GA. The promise and challenges of dissemination and implementation research  Ch. 2: Rabin B. Developing the terminology for dissemination and implementation research  Lobb R & Colditz GA. 2013. Implementation Science and its Application to Population Health. Annu Rev Public Health;34:20.1-20.17  **Additional:**  Geng EH, Peiris D, Kruk ME. Implementation science: Relevance in the real world without sacrificing rigor. *PLoS Med.* Apr 2017;14(4):e1002288  Glasgow RE, Vinson C, Chambers D, Khoury MJ, Kaplan RM, Hunter C. National Institutes of Health approaches to dissemination and implementation science: Current and future directions. *Am J Public Health*. 2012;102(7):1274-1281  Peters DH, Adam T, Alonge O, Agyepong IA, Tran N. Implementation research: what it is and how to do it. *BMJ*. 2013;347:f6753.  Bauer, Mark S., et al. "An introduction to implementation science for the non-specialist." BMC psychology 3.1 (2015): 32. https://bmcpsychology.biomedcentral.com/articles/10.1186/s40359-015-0089-9  Woolf SH. The meaning of translational research and why it matters. JAMA 2008;299(2):211-3. |
| **Class 2** | Jan. 22 | D&I research questions – how do you come up with evidence?  Building Evidence-based Capacity in Public Health and Medicine |  | **Core:**  Guyatt et al. (1992). Evidence-based medicine: A new approach to teaching the practice of medicine. *JAMA, 268*(17), 2420-2425.  Brownson et al. (2009). Evidence-based public health: A fundamental concept for public health practice. *Annual Review of Public Health, 30*, 175-201.  Jonathan Fielding (video)  **Additional:**  Brownson, Ross C., Jonathan E. Fielding, and Lawrence W. Green. "Building capacity for evidence-based public health: reconciling the pulls of practice and the push of research." *Annual review of public health* 39 (2018): 27-53.  Aarons, Gregory A., et al. "Aligning leadership across systems and organizations to develop a strategic climate for evidence-based practice implementation." *Annual Review of Public Health* 35 (2014): 255-274. |
| **Class 3** | Jan. 29 | D&I study designs | Due: Webinar assignment | **Core:**  Ch. 13: Landsverk J. Design and analysis of dissemination and implementation research  Mazzucca S, Tabak RG, Pilar M, et al. Variation in Research Designs Used to Test the Effectiveness of Dissemination and Implementation Strategies: A Review. *Front Public Health.* 2018;6:32  Sanson-Fisher, Robert W., et al. "Evaluation of systems-oriented public health interventions: alternative research designs." *Annual Review of Public Health* 35 (2014): 9-27.  Sanson-Fisher (video)  **Additional:**  Handley, Margaret A., et al. "Selecting and improving quasi-experimental designs in effectiveness and implementation research." *Annual review of public health* 39 (2018): 5-25.  Brown C, Curran G, Palinkas L, et al. An Overview of Research and Evaluation Designs for Dissemination and Implementation. *Annu Rev Public Health.* 2017;38:1-22  Crespi, Catherine M. "Improved designs for cluster randomized trials." *Annual review of public health* 37 (2016): 1-16.  Johnson KE, Tachibana C, Coronado GD, Dember LM, Glasgow RE, Huang SS, et al. A guide to research partnerships for pragmatic clinical trials. BMJ. 2014;349:g6826. |
| **Class 4** | Feb. 5 | Theories and frameworks in D&I research  Writing an aims page/grant-writing overview | Due: Final Project: Topic Idea | **Core:**  Ch. 3. Dearing JW. Historical roots of dissemination and implementation science.  Ch. 5. Tabak RT. The Conceptual Basis for Dissemination and Implementation Research: Lessons from Existing Models and Frameworks  Nilsen P. Making sense of implementation theories, models and frameworks. Implementation Science. 2015;10:53.  Proctor, Enola K., et al. "Writing implementation research grant proposals: ten key ingredients." *Implementation Science*7.1 (2012): 96.  **Additional:**  Damschroder LF, Aron DC, Keith RE, Kirsh SR, Alexander JA, Lowery JC. Fostering implementation of health services research findings into practice: a consolidated framework for advancing implementation science. Implementation Science, 2009;4:50.  Neta G, Glasgow RE, Carpenter CR, Grimshaw JM, Rabin BA, Fernandez ME, et al. A Framework for Enhancing the Value of Research for Dissemination and Implementation. Am J Public Health. 2014 Jan;105(1):49-57.  Kirk. A systematic review of the use of the Consolidated Framework for Implementation Research. Implementation Science (2016) 11:72  Crable, Erika L., et al. "Standardizing an approach to the evaluation of implementation science proposals." *Implementation Science* 13.1 (2018): 71. |
| **Class 5** | Feb. 12 | Implementation strategies | First webinar discussion | **Core:**  Ch. 15. Implementation Strategies  Leeman. Beyond “implementation strategies”-classifying the full range of strategies used in IS and practice. Implementation Science (2017) 12:125  Powell. A refined compilation of implementation strategies results from the Expert Recommendations for Implementing Change (ERIC) project. Implementation Science (2015) 10:21  **Additional:**  Lewis. From Classification to Causality-Advancing Understanding of Mechanisms of Change in IS. Front. Public Health (2018) 6:136.  Proctor EK, Powell BJ, McMillen JC. Implementation strategies: recommendations for specifying and reporting. *Implement Sci.* 2013;8:139.  Powell BJ, McMillen JC, Proctor EK, et al. A compilation of strategies for implementing clinical innovations in health and mental health. *Med Care Res Rev.* Apr 2011;69(2):123-157. |
| **Class 6** | Feb. 19 | Context/ External validity  D&I🡪multi-level | Due: Quality gap and evidence base for final project assignment | **Core:**  Huebschmann. Making Health Research Matter: A Call to Increase Attention to External Validity. *ARPH*. 2018.  Ch. 18. Green LJW. Furthering Dissemination and Implementation Research: The Need for More Attention to External Validity.  **Additional:**  Glasgow, Russell E., and Karen M. Emmons. "How can we increase translation of research into practice? Types of evidence needed." *Annu. Rev. Public Health* 28 (2007): 413-433.  Green LW, Glasgow RE. 2006. Evaluating the Relevance, Generalization, and Applicability of Research: Issues in External Validation and Translation Methodology*. Evaluation & The Health Professions*;29(1):126-153.  Klesges LM, Dzewaltowski DA, Glasgow RE. 2008. Review of external validity reporting in childhood obesity prevention research. *Am J Prev Med*;34(3):216-23. |
| **Class 7** | Feb. 26 | Measurement issues  Mixed methods |  | **Core:**  Ch. 14: Lewis CC. Measurement issues in dissemination and implementation research  Palinkas, LA, Aarons, GA, Horwitz, S., Chamberlain, P., Hurlburt, M., Landsverk, J. (2011). Mixed method designs in implementation research. Administration and Policy in Mental Health Services Research, 38, 44-53.  **Additional:**  Rabin BA, Lewis CC, Norton WE, et al. Measurement resources for dissemination and implementation research in health. Implement Sci.11:42  Martinez, R, Lewis, C, & Weiner, BJ (2014). Instrumentation Issues in Implementation Science. Implementation Science 9, 118: doi:10.1186/s13012-014-0118-8  Clinton-McHarg. Psychometric properties of implementation measures for public health and community settings and mapping of constructs against the CFIR a systematic review. Implementation Science (2016) 11:148  Palinkas LA. Qualitative and mixed methods in mental health services and implementation research. J Clin Child Adolesc Psychol. 2014;43(6):851-61.  Forman. Development and application of the RE-AIM QuEST mixed methods framework for program evaluation. Preventive Medicine Reports 6 (2017) 322–328 |
| **Class 8** | Mar. 4 | Implementation outcomes | Second webinar discussion | **Core:**  Proctor. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. Adm Policy Ment Health 2011;38:65-76  Lewis, Cara C., et al. "Outcomes for implementation science: an enhanced systematic review of instruments using evidence-based rating criteria." *Implementation science* 10.1 (2015): 155.  **Additional:**  Garner. Toward evidence-based measures of implementation-Examining the relationship between implementation outcomes and client outcomes. Journal of Substance Abuse Treatment 67 (2016) 15–21  Weiner, Bryan J., et al. "Psychometric assessment of three newly developed implementation outcome measures." *Implementation Science* 12.1 (2017): 108. |
| **Class 9** | Mar. 11 | Global  Low-resource settings  De-implementation | Due: Outline for research project | **Core:**  Escoffery, Cam, et al. "A systematic review of adaptations of evidence-based public health interventions globally." Implementation Science 13.1 (2018): 125.  McKay, Virginia R., et al. "Letting Go: Conceptualizing Intervention De‐implementation in Public Health and Social Service Settings." American journal of community psychology 62.1-2 (2018): 189-202.  **Additional:**  Ch. 28. Lobb, R. Dissemination and Implementation Research in a Global Context. |
| **Class 10** | Mar. 18 | D&I opportunities  Policy D&I |  | **Core:**  Kreuter MW, McBride TD, Caburnay CA, et al. What can health communication science offer for ACA implementation? Five evidence-informed strategies for expanding Medicaid enrollment. *Milbank Q.* Mar 2014;92(1):40-62.  Ch. 26: Purtle,. Policy Dissemination Research  **Additional:**  Alla. How do we define the policy impact of public health research-A systematic review. Health Research Policy and Systems (2017) 15:84  Seow H, Phillips CO, Rich MW, Spertus JA, Krumholz HM, Lynn J. Isolation of health services research from practice and policy: the example of chronic heart failure management. *J Am Geriatr Soc.* Mar 2006;54(3):535-540. |
| **Class 11** | Mar. 25 | Partnered and participatory Research, Non-Health settings |  | **Core:**  Holt. Opportunities and challenges in conducting community-engaged D&I research (2017) TBM.  Ch. 11. Minkler, M. Participatory Approaches for Study Design and Analysis in Dissemination and Implementation Research.  Ch. 21. Vinson, CA. Dissemination and Implementation Research in Community and Public Health Settings.  Ch. 22. McMillen, JC. Dissemination and Implementation in Social Service Settings.  **Additional:**  Blachman-Demner; Fostering integrated approaches to dissemination and implementation and community engaged research, Translational Behavioral Medicine, Volume 7, Issue 3, 1 September 2017, Pages 543–546  Boothroyd; Active involved community partnerships: co-creating implementation infrastructure for getting to and sustaining social impact, Translational Behavioral Medicine, Volume 7, Issue 3, 1 September 2017, Pages 467–477 |
| **Class 12** | Apr. 1 | Adaptation/fidelity  Disparities |  | **Core:**  Ch. 16. Fidelity and Its Relationship to Implementation Effectiveness, Adaptation, and Dissemination  Ch. 17. Baumann A. Adaptation in Dissemination and Implementation Science  **Additional:**  Cabassa, L. J., & Baumann, A. A. (2013). A two-way street: bridging implementation science and cultural adaptations of mental health treatments. *Implement Sci*, *8*(1), 90.  Diner BM, Carpenter CR, O'Connell T, et al. Graduate medical education and knowledge translation: role models, information pipelines, and practice change thresholds. *Acad Emerg Med.* Nov 2007;14(11):1008-1014.  Stirman, S. W., Miller, C. J., Toder, K., & Calloway, A. (2013). Development of a framework and coding system for modifications and adaptations of evidence-based interventions. *Implement Sci*, *8*(1), 65.  Chambers. The Adaptome Advancing the Science of Intervention Adaptation. Am J Prev Med 2016;51(4S2):S124–S131  Escoffery, Cam, et al. "A scoping study of frameworks for adapting public health evidence-based interventions." *Translational behavioral medicine* (2018).  Chinman. Harnessing Implementation Science to Increase the Impact of Health Equity Research. Medical Care. Volume 55, Number 9 Suppl 2, September 2017 |
| **Class 13** | Apr. 8 | Systems science methods |  | **Core:**  Ch. 10. Luke, DA. Systems science methods in dissemination and implementation research.  **Additional:**  Luke DA, Stamatakis KA. Systems science methods in public health: dynamics, networks, and agents. *Annu Rev Public Health.* Apr 2012;33:357-376  Valente TW, Pitts SR. An Appraisal of Social Network Theory and Analysis as Applied to Public Health: Challenges and Opportunities. *Annu Rev Public Health.* Mar 20 2017;38:103-118  Tracy M, Cerda M, Keyes KM. Agent-Based Modeling in Public Health: Current Applications and Future Directions. *Annu Rev Public Health.* Apr 1 2018;39:77-94 |
| **Class 14** | Apr. 15 | Designing for dissemination, impact and sustainability  D4DIS case study |  | **Core:**  Chambers, D. A., Glasgow, R. E., & Stange, K. C. (2013). The dynamic sustainability framework: addressing the paradox of sustainment amid ongoing change. Implementation Science, 8(1), 117.  Shelton RC, Cooper BR, Stirman SW. The Sustainability of Evidence-Based Interventions and Practices in Public Health and Health Care. *Annu Rev Public Health.* Apr 1 2018;39:55-76  Rachel Shelton (video)  **Additional:**  Brownson RC, Jacobs JA, Tabak RG, Hoehner CM, Stamatakis KA. Designing for dissemination among public health researchers: findings from a national survey in the United States. Am J Public Health. Jul 18 2013;103(9):1693-1699.  Brownson RC, Eyler AA, Harris JK, Moore JB, Tabak RG. Getting the Word Out: New Approaches for Disseminating Public Health Science. J Public Health Manag Pract. Sep 06 2017.  Stirman, S. W., Kimberly, J., Cook, N., Calloway, A., Castro, F., & Charns, M. (2012). The sustainability of new programs and innovations: a review of the empirical literature and recommendations for future research. Implementation Science, 7(1), 17.  Schell, Sarah F., et al. "Public health program capacity for sustainability: a new framework." *Implementation Science* 8.1 (2013): 1. |
| **Class 15** | Apr. 22 | Student presentations | Due: Presentation for project |  |
| **Class 16** | Apr. 29 | Future issues in D&I science |  | **Core:**  Ch. 29: Brownson. Future issues in dissemination and implementation research  **Additional:**  Brownson RC, Colditz GA, Dobbins M, Emmons KM, Kerner JF, Padek M, et al. Concocting that Magic Elixir: Successful Grant Application Writing in Dissemination and Implementation Research. Clin Transl Sci 2015;8(6):710-6  Proctor EK, Powell BJ, Baumann AA, Hamilton AM, Santens RL. Writing implementation research grant proposals: ten key ingredients. *Implement Sci.* 2012;7:96. |

**DROP DATES**

You may drop for any reason during the course of the semester. However, you may only receive a partial or no tuition reimbursement depending upon how far into the semester you drop the course. See the [MPHS Student Handbook](https://mphs.wustl.edu/students/student-handbook/). Late withdrawals will appear on your transcript as a withdrawal.

MPHS Academic Policy Guidelines:

Guidelines regarding MPHS course registration and enrollment, grades, tuition obligation, and academic leave are consolidated in the[**MPHS Student Handbook**](https://mphs.wustl.edu/students/student-handbook/). Please review this document.

MPHS Guidelines for Academic and Non-Academic Transgressions:

By registering for this course you have agreed to the terms of the **MPHS Academic Integrity Policy, outlined below and in more detail in the MPHS Student Handbook**. Please review this policy before submitting your first graded assignment.

## Academic Integrity/Plagiarism Policy:

* Academic dishonesty is a serious offense that may lead to probation, suspension, or dismissal from the University. Academic dishonesty includes plagiarism (the use of someone else’s ideas, statements, or approaches without proper citation). Academic dishonesty also includes copying information from another student, submitting work from a previous class for a new grade without prior approval from your instructor, cheating on exams, etc. You are responsible for reviewing [WashU’s academic integrity resources](https://studentconduct.wustl.edu/academic-integrity/) to become aware of all the actions that constitute academic dishonesty.
* All instances of academic dishonesty will be reported to the Office of the Registrar for investigation and potential disciplinary action. In addition, the instructor will make an independent decision about the student’s grade on any assignment in question. The MPHS process regarding academic dishonesty is described in the [MPHS Student Handbook](https://mphs.wustl.edu/students/student-handbook/)

**DISABILITY RESOURCES**

It is the goal of Washington University to assist students with disabilities in removing the barriers their disabilities may pose and provide support in facing the challenge of pursuing an education at Washington University.

Washington University recognizes and accepts its professional, legal and moral responsibility to avoid discrimination in the acceptance and education of qualified students with disabilities and to provide reasonable accommodations to such students consistent with the principles embodied in the law. These guidelines apply to students seeking admittance as well as to those who become disabled while they are enrolled.

Washington University makes every effort to insure that all qualified applicants and students can participate in and take full advantage of all programs and opportunities offered within the university. Washington University encourages and gives full consideration to all applicants for admission. Washington University does not discriminate in access to its programs and activities on the basis of age, sex, sexual orientation, race, disability, religion, color or national origin.

To learn more about services provided to students with disabilities, initiate the process of formal

documentation and/or to arrange for accommodations, please review the [Disability Resources](http://bulletin.wustl.edu/medicine/policies/wusm-other/#Disabilities) for the Med School at the start of the course.

**MENTAL HEALTH RESOURCES**

Mental Health Services’ professional staff members work with students to resolve personal and interpersonal difficulties, many of which can affect the academic experience. These include conflicts with or worry about friends or family, concerns about eating or drinking patterns, and feelings of anxiety and depression. See: [shs.wustl.edu/MentalHealth](http://shs.wustl.edu/MentalHealth).

**Sexual Assault Resources**

You can also speak confidentially and learn about available resources by contacting [Dr. Gladys Smith, PhD](mailto:smithgladysa@wustl.edu), Sexual Violence Prevention Therapist and Licensed Psychologist at the Medical Campus, (314) 362-2404. Additionally, you can report incidents to the Office of Student Affairs or by contacting WUSM Protective Services 314-362-4357 or your local law enforcement agency.

**Bias Resources**The University has a process through which students and staff who have experienced or witnessed bias, prejudice or discrimination against a student can report their experiences to the University’s Bias Report and Support System (BRSS) team.  For details see: [diversityinclusion.wustl.edu/brss/](https://diversityinclusion.wustl.edu/brss/).

**Office of the Associate Vice Chancellor for Diversity, Equity and Inclusion (DEI)**

**The DEI Training Team**designs, facilitates and leads diversity education programming for faculty, staff and students on a wide range of topics including: creating a climate of respect, the value of diversity and the role of biases in our day-to-day lives.  
[diversity.med.wustl.edu/training/](https://diversity.med.wustl.edu/training/)

**The Office of Diversity Programs** promotes diversity among and prepares medical students to lead in a global society. A priority for the Office of Diversity Programs is to cultivate and foster a supportive campus climate for students of all backgrounds, cultures and identities.  
[mddiversity.wustl.edu/](https://mddiversity.wustl.edu/)

**The Diversity and Inclusion Student Council**promotes an inclusive campus environment for all School of Medicine students.  
[sites.wustl.edu/disc/](https://mailingsresponse.wustl.edu/trk/click?ref=z1030up2e7_2-bdaex3ab88x0844&)

**The Office for International Students and Scholars** embraces the university’s mission of welcoming promising students from around the world.  
[wumma.wustl.edu/](https://mailingsresponse.wustl.edu/trk/click?ref=z1030up2e7_2-bdaex3ab89x0844&)