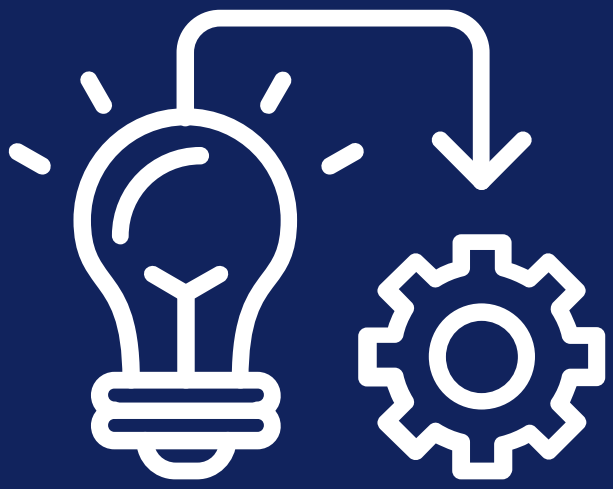
PISCE@LDI & PENN MSHP PRESENT

IMPLEMENTATION SCIENCE INSTITUTE

SUMMER 2023



JUNE 6 – 9

VIRTUAL

PROGRAM INTRODUCTION

2023
IMPLEMENTATION SCIENCE INSTITUTE

Welcome to Penn Implementation Science Institute 2023!

Implementation science (IS) has emerged as a discipline to bridge the research-to-practice gap. Implementation research is the scientific study of methods to improve the adoption, implementation, and sustainment of evidence-based practices in health services settings.

The purpose of the Implementation Science Institute is to provide participants with the tools to design and execute rigorous implementation science research. The Institute will give an introduction to the foundations of implementation science (i.e., terminology, conceptual models and frameworks, study design). Students will also receive an overview of advanced topics including implementation strategies and sustainability. The course director will cover tips for grant writing, skill development and time will be spent writing specific aims for Implementation Institute grants. We will also explicitly describe how principles of IS can be applied to practical implementation efforts.

If you are interested in learning more about Implementation Science, make sure to check out the Certificate Program at Certificate in Implementation Science.

Course Director

Meghan Lane-Fall, MD, MSHP

David E. Longnecker Associate Professor of Anesthesiology and Critical Care, Associate Professor of Epidemiology, Perelman School of Medicine

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KEYNOTE SPEAKERS

2023
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Geoffrey Curran, PhD

Director, Center for Implementation Research
Professor, Department of Pharmacy Practice and
Department of Psychiatry,
University of Arkansas for Medical Sciences
Research Health Scientist,
Central Arkansas Veterans Healthcare System

Rinad Beidas, PhD

Chair, Department of Medical Social Sciences
Ralph Seal Paffenbarger Professor,
Professor of Medical Social Sciences and
Weinberg College of Arts and Sciences,
Northwestern University

Lindsey Martin, PhD

Health Scientist Administrator,
Population Health Branch (PHB)
National Institute of Environmental Health
Sciences (NIEHS)

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DAILY AGENDA

TUESDAY, JUNE 6

12:00pm – 12:45pm	**Introduction to Implementation Science** *Meghan Lane-Fall, MD, MSHP, David E. Longnecker Associate Professor of Anesthesiology and Critical Care, Perelman School of Medicine*
12:45pm – 1:15pm	**Small Group Introduction** *Small Group Leaders*
1:15pm – 1:45pm	**Models and Frameworks** *Meghan Lane-Fall, MD, MSHP, David E. Longnecker Associate Professor of Anesthesiology and Critical Care, Perelman School of Medicine*
1:45pm – 2:00pm	**Break**
2:00pm – 2:45pm	**Small Group Activity** *Small Group Leaders*
2:45pm – 3:45pm	**Study Design and Methods** *Kate Courtright, MD, MSHP, Assistant Professor of Pulmonary, Allergy, and Critical Care, Perelman School of Medicine*
3:45pm – 4:00pm	**Break**
4:00pm – 5:00pm	**Keynote Speaker** *Geoffrey Curran, PhD, Professor, Department of Pharmacy Practice and Department of Psychiatry, University of Arkansas for Medical Sciences*
All day	**Office Hours** (Please refer to Whova for the schedule)

DAILY AGENDA

WEDNESDAY, JUNE 7

12:00pm – 12:30pm	**Small Group Check-in** *Small Group Leaders*
12:30pm – 1:15pm	**Implementation Strategies** *Meghan Lane-Fall, MD, MSHP, David E. Longnecker Associate Professor of Anesthesiology and Critical Care, Perelman School of Medicine*
1:15pm – 1:30pm	**Break**
1:30pm – 2:15pm	**Implementation Outcomes** *Meghan Lane-Fall, MD, MSHP, David E. Longnecker Associate Professor of Anesthesiology and Critical Care, Perelman School of Medicine*
2:15pm – 3:00pm	**Applying Behavioral Economics to Implementation Science** *Shivan Mehta, MD, MBA, MSHP, Associate Professor of Medicine and Health Policy, Perelman School of Medicine*
3:00pm – 3:15pm	**Break**
3:15pm – 4:00pm	**Dissemination** *Jonathan Purtle, DrPH, MPH, Associate Professor of Public Health Policy & Management and Director of Policy Research, NYU's Global Center for Implementation Science*
4:00pm – 5:00pm	**Keynote Speaker** *Rinad Beidas, PhD, Chair and Ralph Seal Paffenbarger Professor of Medical Social Sciences, Feinberg School of Medicine, Northwestern University*
All day	**Office Hours** (Please refer to Whova for the schedule)

DAILY AGENDA

THURSDAY, JUNE 8

12:00pm – 12:30pm	**Small Group Check-in** *Small Group Leaders*
12:30pm – 1:15pm	**Global Health Panel** *Yehoda M. Martei, MD, MSCE, Vice Chief, Diversity, Inclusion and Health Equity, Division of Hematology/Oncology; Assistant Professor of Medicine at the Hospital of the University of Pennsylvania* *Katharine A. Rendle, PhD, MSW, MPH, Assistant Professor of Family Medicine and Community Health at the Hospital of the University of Pennsylvania*
1:15pm – 1:30pm	**Break**
1:30pm – 3:00pm	**Implementation Science and Quality Improvement Panel** *Michael Posencheg, MD, Chief Medical Officer (CMO) of Penn Presbyterian Medical Center; Professor of Clinical Pediatrics, University of Pennsylvania* *Jen Myers, MD, Executive Director, Center for Health Care Improvement and Patient Safety (CHIPS); Professor of Clinical Medicine, Perelman School of Medicine* *Amanda Bettencourt, PhD, Assistant Professor of Nursing, University of Pennsylvania, School of Nursing*
3:00pm – 3:10pm	**Break**
3:10pm – 3:55pm	**Example of Research Program** *David Mandell, ScD, Professor of Psychiatry, University of Pennsylvania*
3:55pm – 4:00pm	**Break**
4:00pm – 5:00pm	**Keynote Speaker** *Lindsey Martin, PhD, Health Scientist Administrator, Population Health Branch (PHB), National Institute of Environmental Health Sciences*
All day	**Office Hours** (Please refer to Whova for the schedule)

DAILY AGENDA

FRIDAY, JUNE 9

12:00pm – 12:30pm	**Small Group Check-in** *Small Group Leaders*
12:30pm – 1:15pm	**Example of a Research Program** *Florence Momplaisir, MD, MSHP, Assistant Professor of Medicine, Perelman School of Medicine*
1:15pm – 1:30pm	**Break**
1:30pm – 2:15pm	**Health Equity and Implementation Science** *Katie Hoskins, Assistant Professor, Biobehavioral Health Sciences, Penn Nursing*
2:15pm – 3:00pm	**Deimplementation** *Chris Bonafide, MD, MSCE, Associate Professor of Pediatrics, University of Pennsylvania*
3:00pm – 3:15pm	**Break**
3:15pm – 4:15pm	**Grant Writing** *Meghan Lane-Fall, MD, MSHP, David E. Longnecker Associate Professor of Anesthesiology and Critical Care, Perelman School of Medicine*
4:15pm – 5:00pm	**Institute Wrap Up / Questions**
All day	**Office Hours** (Please refer to Whova for the schedule)

SMALL GROUP FACILITATORS

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LauraEllen Ashcraft, PhD, MSW

Senior Research Investigator and
Implementation Science Methodologist,
Division of General Internal Medicine at Penn
Medicine and Corporal Michael J. Crescenz
Department of Veterans Affairs Medical Center

Emily Becker-Haimes, PhD

Assistant Professor of Psychiatry,
Perelman School of Medicine
Clinical Director, Pediatric Anxiety Treatment Center
Co-Director, Penn Coping First Aid Program

Amanda Bettencourt, PhD

Assistant Professor of Nursing,
University of Pennsylvania,
School of Nursing

Penn Medicine

SMALL GROUP FACILITATORS

2023
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Chris Bonafide, MD, MSCE

Associate Professor of Pediatrics,
Perelman School of Medicine
Associate Director, PISCE@LDI

Rebecca Hamm, MD, MSCE

Assistant Professor,
Division of Maternal Fetal Medicine,
Perelman School of Medicine

Katelin Hoskins, PhD, MSN, MBE

Assistant Professor,
Department of Biobehavioral Health Sciences,
University of Pennsylvania,
School of Nursing

Penn Medicine

SMALL GROUP FACILITATORS

2023
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Meghan Lane-Fall, MD, MSHP

David E. Longnecker Associate Professor of Anesthesiology and Critical Care, Associate Professor of Epidemiology, Perelman School of Medicine

Katharine Rendle, PhD, MSW, MPH

Assistant Professor,
Family Medicine and Community Health,
Assistant Professor,
Biostatistics, Epidemiology and Informatics,
Perelman School of Medicine
Associate Director, PISCE@LDI

Amy Van Pelt, PhD, MPH

Postdoctoral Fellow in Implementation Science,
Department of Medical Social Sciences,
Feinberg School of Medicine,
Northwestern University

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FEATURED SPEAKERS

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Amanda Bettencourt, PhD

Assistant Professor of Nursing,
University of Pennsylvania,
School of Nursing

Chris Bonafide, MD, MSCE

Associate Professor of Pediatrics,
Perelman School of Medicine
Associate Director, PISCE@LDI

Kate Courtright, MD, MSHP

Assistant Professor of Medicine,
Pulmonary and Critical Care, Core Faculty,
Palliative and Advanced Illness Research
(PAIR) Center
Perelman School of Medicine

Penn Medicine

FEATURED SPEAKERS

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Katelin Hoskins, PhD, MSN, MBE

Assistant Professor,
Department of Biobehavioral Health Sciences,
University of Pennsylvania,
School of Nursing

David Mandell, ScD

Professor and Director,
Penn Center for Mental Health;
Vice Chair for Faculty Development,
Department of Psychiatry,
University of Pennsylvania School of Medicine

Yehoda Martei, MD, MSCE

Vice Chief, Diversity, Inclusion and Health Equity, Division of Hematology/Oncology;
Assistant Professor of Medicine at the Hospital of the University of Pennsylvania

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FEATURED SPEAKERS

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Shivan J. Mehta, MD, MBA, MSHP

Associate Professor of Medicine
and Health Policy,
Perelman School of Medicine

Florence Momplaisir, MD, MSHP

Assistant Professor of Medicine,
Perelman School of Medicine

Jen Myers, MD

Executive Director, Center for Health Care
Improvement and Patient Safety (CHIPS);
Professor of Clinical Medicine,
Perelman School of Medicine

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FEATURED SPEAKERS

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Michael Posencheg, MD

Chief Medical Officer (CMO) of
Penn Presbyterian Medical Center;
Professor of Clinical Pediatrics,
University of Pennsylvania

Jonathan Purtle, DrPH, MSc

Associate Professor of Public Health
Policy & Management,
Director of Policy Research,
NYU's Global Center for Implementation Science

Katharine Rendle, PhD, MSW, MPH

Assistant Professor,
Family Medicine and Community Health,
Assistant Professor,
Biostatistics, Epidemiology and Informatics,
Perelman School of Medicine
Associate Director, PISCE@LDI

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Penn Implementation Science 2023 Institute | Greatest Hits Reading List

The following list of resources is meant to supplement your learnings from the Penn Implementation Science Institute. It is not all-inclusive. Rather, it represents works that explain core IS concepts. Feel free to contact the Institute directors or individual speakers for more references relating to topics of interest.

Suggested Textbook:

Brownson RC, Colditz GA, Proctor EK. Dissemination and Implementation Research in Health: Translating Science into Practice (2nd ed). New York, NY: Oxford University Press; 2017. (Note: the 3rd edition of this book is forthcoming with an expected publication date of July 18, 2023.)

Citation	Comments
Overview	
1. Eccles MP, Mittman BS. Welcome to implementation science. *Implement Sci.* 2006;1:1.	Commentary that introduces the journal *Implementation Science*, including definitions and a brief history of the field.
2. Bauer M, Damschroder L, Hagedorn H, Smith J, Kilbourne A. An introduction to implementation science for the non-specialist. *BMC Psychology*. 2015;3(32):1-12.	Defines implementation science, distinguishes it from interventional research and quality improvement, explains the importance of frameworks, theories, and models, and reviews study designs used in implementation science research studies.
3. Curran GM. Implementation science made too simple: a teaching tool. Implementation Science Communications. 2020 Dec;1(1):1-3.	Describes implementation science incredibly simply. **The author Geoff Curran is one of the keynote speakers for the 2023 Penn ISI.**
4. Bauer MS, Kirchner J. Implementation Science: What is it and why should I care? *Psychiatry Research.* 2020; 283(112376).	Examples of why implementation science matters and offers a review of the field's history and scope thus far.
5. Lane-Fall MB, Curran GM, Beidas RS. Scoping implementation science for the beginner: locating yourself on the "subway line" of translational research. BMC medical research methodology. 2019 Dec;19(1):133.	A series of structured questions about intervention efficacy, effectiveness, and implementation that guides you to select research questions and appropriate study designs. **Authored by Penn ISI Director Meghan Lane-Fall and two 2023 Penn ISI keynote speakers.**
6. Kilbourne AM, Glasgow RE, Chambers DA. What Can Implementation Science Do for You? Key Success Stories from the Field. Journal of General Internal Medicine. 2020 Nov;35(2):783-7	Offers examples of success stories from implementation science.

Citation	Comments
7. Proctor, E, Geng, E. A new lane for science. Science. 2021 Nov; 374 (6568): 659.	Influential editorial calling out the critical nature of the field.

Frameworks	
8. Nilsen, P. Making sense of implementation theories, models and frameworks. *Implement Sci.* 2015;10:53	This review acknowledges that there are many frameworks, theories, and models (FTMs) used in implementation science and establishes a three-part taxonomy of these FTMs: process models, determinant frameworks, and evaluation models.
9. Damschroder LJ. Clarity out of chaos: Use of theory in implementation research. *Psychiatry Research.* 2020;283.	Brief paper that clarifies the uses of theory in IS research and summarizes Per Nielsen's work in the former article.
10a. Damschroder LJ, 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.	Introduces what is now one of the most popular frameworks in implementation science: CFIR (pronounced "SEE-fur"), the Consolidated Framework for Implementation Research.
10b. Damschroder LJ, Reardon C, Widerquist, M.A.O, Lowery J. The updated Consolidated Framework for Implementation Research based on user feedback. *Implementation Science.* 2022;17:75.	Updated CFIR framework based on review of literature as well as survey of published CFIR users. Several adjustments were made, including the revision or exclusion of constructs as well as an increased focus on innovation participants and equity.
11. Tabak RG, Khong EC, Chambers DA, Brownson RC. Bridging research and practice: models for dissemination and implementation research. Am J Prev Med. 2012;43:337-350.	Discusses the utility of frameworks, theories, and models (FTMs) in implementation science and offers an inventory of FTMs. Consider reading this paper after the Per Nilsen paper (#6 in this list).
12. Strifler L, Cardoso R, McGowan J, Cogo E, Nincic V, Khan PA, Scott A, Ghassemi M, MacDonald H, Lai Y, Treister V. Scoping review identifies significant number of knowledge translation theories, models, and frameworks with limited use. Journal of clinical epidemiology. 2018 Aug 1;100:92-102.	Provides an update to the literature on the current inventory of FTMs, including a helpful classification table.

Citation	Comments
Design	
13. Brown CH, Curran G, Palinkas LA, Aarons GA, Wells KB, Jones L, Collins LM, Duan N, Mittman BS, Wallace AM, Tabak RG, Ducharme L, Chambers D, Neta G, Wiley T, Landsverk J, Cheung K, Cruden G. An overview of research and evaluations designs for dissemination and implementation. *Annual Review of Public Health.* 2017;38:1-22.	Summarizes research designs relevant to implementation science and discusses challenges including threats to validity. Quasi-experimental, randomized trials, and adaptations of randomized trials (e.g., roll-out randomized designs) are also discussed.
14. Curran GM, Bauer M, Mittman B, Pyne JM, Stetler C. Effectiveness-implementation hybrid designs: combining elements of clinical effectiveness and implementation research to enhance public health impact. *Med Care.* 2012;50:217–226.	Introduces the concept of "hybrid trials" that have a dual focus: intervention effectiveness and implementation strategy. There are three types of hybrid trials detailed in this paper.
15. Wolfenden L, Foy R, Presseau J, Grimshaw JM, Ivers NM, Powell BJ, Taljaard M, Wiggers J, Sutherland R, Nathan N, Williams CM. Designing and undertaking randomised implementation trials: guide for researchers. bmj. 2021 Jan 18;372.	Provides a broad overview of designing and deploying randomized implementation trials from an international author group.
Methods	
16. Palinkas LA, Mendon SJ, Hamilton AB. Innovations in Mixed Methods Evaluations. Annual review of public health. 2019 Apr 1;40.	Implementation science relies heavily on the use of mixed methods (qualitative + quantitative) approaches to inquiry. This article reviews the use of mixed methods in IS research and explains different types of mixed methods research.
Outcomes	
17. Proctor E, Silmere H, Raghavan R, Hovmand P, Aarons G, Bunger A, Griffey R, Hensley M. Outcomes for implementation research: conceptual distinctions, measurement challenges, and research agenda. *Adm Policy Ment Health.* 2011; 38(2):65-76.	Seminal paper introduces and defines eight implementation outcomes: acceptability, adoption, appropriateness, costs, feasibility, fidelity, penetration, and sustainability.

Citation	Comments
18. Weiner BJ, Lewis CC, Stanick C, Powell BJ, Dorsey CN, Clary AS, Boynton MH, Halko H. Psychometric assessment of three newly developed implementation outcome measures. Implementation Science. 2017 Dec;12(1):108.	Provides psychometric properties of 3 brief pragmatic measures of implementation outcomes
19. Damschroder L, Reardon, C, Widerquist M, Lowery, J. Conceptualizing outcomes for use with the CFIR: the CFIR outcomes addendum. 2022 January.	Conceptually distinguishes between types of outcomes that are appropriate to be used with CFIR and other determinant implementation frameworks.

Strategies	
20. 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.* 2012;69:123-157.	Discusses six categories of implementation strategies: Planning, Education, Financing, Restructuring, Quality Management, and Policy. The authors recently published an update to their 2012 paper, but this earlier paper may be more accessible for people new to IS. (The citation for the newer paper is Powell et al, A refined compilation of implementation strategies. *Implement Sci.* 2015; 10:21.)
21. Waltz TJ, Powell BJ, Fernández ME, Abadie B, Damschroder LJ. Choosing implementation strategies to address contextual barriers: diversity in recommendations and future directions. Implementation Science. 2019 Dec;14(1):42.	Describes how one might match implementation strategies to determinants.
22. Lewis CC, Klasnja P, Powell BJ, Lyon AR, Tuzzio L, Jones S, Walsh-Bailey C and Weiner B. Classification to Causality: Advancing Understanding of Mechanisms of Change in Implementation Science. *Front. Public Health.* 2018; 6:136.	Discusses how to define and measure implementation strategies, with examples.

Citation	Comments
Equity and Implementation Science	
23. Shelton RC, Chambers DA, Glasgow RE. An extension of RE-AIM to enhance sustainability: addressing dynamic context and promoting health equity over time. Frontiers in Public Health. 2020;8:134.	Proposes an extension to the RE-AIM framework that explicitly attends to both sustainability and health equity.
24. Woodward EN, Matthieu MM, Uchendu US, Rogal S, Kirchner JE. The health equity implementation framework: proposal and preliminary study of hepatitis C virus treatment. Implementation Science. 2019 Dec;14(1):1-8.	One of the first implementation science frameworks to explicitly prioritize constructs pertaining to health equity.
25. Shelton, R, Adsul, P, Oh, A. Recommendations for addressing structural racism in implementation science: A call to the field.	Offers recommendations for the field of IS to include structural racism as a more explicit focus of the work.
Grant Writing	
26. Proctor EK, Powell BJ, Baumann AA, Hamilton AM, Santens RL. Writing implementation research grant proposals: ten key ingredients. *Implement Sci*. 2012;12(7).	Offers guidance to people writing grant proposals that include or focus on implementation.
Deimplementation	
27. Montini, T, Graham, I. Entrenched practices and other biases: unpacking the historical, economic, professional, and social resistance to de-implementation. *Implement Sci.* 2015;10(24). 28. Norton WE, Chambers DA. Unpacking the complexities of de-implementing inappropriate health interventions. Implementation Science. 2020 Dec;15(1):1-7.	De-implementation is not necessarily the opposite of implementation. These papers discuss some of the challenges to changing behavior to discontinue a practice.

Citation	Comments
Quality Improvement and Implementation Science	
29. Ovretveit J, Mittman B, Rubenstein L, Ganz DA. Using implementation tools to design and conduct quality improvement projects for faster and more effective improvement. *Int J Health Care Qual Assur.* 2017; 30(8):755-768	Explains how implementation science principles can be useful to people doing healthcare improvement work.
30. Koczwara B, Stover AM, Davies L, Davis MM, Fleisher L, Ramanadhan S, Schroeck FR, Zullig LL, Chambers DA, Proctor E. Harnessing the Synergy Between Improvement Science and Implementation Science in Cancer: A Call to Action. Journal of oncology practice. 2018 Jun;14(6):335.	Provides helpful insights on the similarities and differences between QI and IS.