2021 Year in Review
PISC@LDI
About us

PISCE@LDI is the hub for implementation science research, training, and capacity building at the University of Pennsylvania.

Our mission

To advance the science of implementation; train the next generation of implementation researchers; and to transform health and behavioral health services domestically and globally.
Dear PISCE@LDI community,

2021 was a year of continued hardships and emerging bright spots. Both of us are incredibly grateful for this community, our mission-driven work to move the needle in health and healthcare, and the generous support of our institution. Now more than ever, there is a clarion call for implementation science, as featured in a recent Science editorial by Drs. Enola Proctor and Elvin Geng, “COVID-19 has shown the world that “knowing what to do” does not ensure “doing what we know.” It demonstrates that intervention discovery is the start, not the end, of the scientific journey. There is no better time for science to establish a new lane, one devoted to ensuring that our nation’s health discoveries are used to improve population health. The headwinds demand nothing less.”

We are a community of over 400 members who come from 10 schools and more than 50 different departments and institutes at Penn and CHOP. We also include external members in the national implementation science community. Our research portfolio is robust — in FY 2021, Penn has 95 active NIH grants with over 22.4 million dollars in direct costs, with a number of center grants dedicated to implementation science. PISCE@LDI has expanded our leadership team to include three Associate Directors, Drs. Courtney Wolk, Kate Rendle, and Chris Bonafide, and also brought on a PISCE@LDI fellow, Dr. Amy Van Pelt. Our educational mission continues to flourish. In partnership with the MsHP, we have trained almost 400 people in implementation science since 2012, many of whom are a part of our community now. We have many exciting activities in store for 2022 to continue to build our community.

Be safe, well, and keep doing your exceptional work.
Christopher Bonafide, MD, MSCE
Associate Director, PISCE@LDI
Associate Professor, Pediatrics, Perelman School of Medicine

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Assistant Professor, Biostatistics, Epidemiology, and Informatics, Perelman School of Medicine

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Internal Advisory Board

**Alison Buttenheim, PhD, MBA**
Scientific Director, Center for Health Incentives & Behavioral Economics
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Associate Professor, Division of Health Policy, Perelman School of Medicine; Director of Engagement, Leonard Davis Institute of Health Economics

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Vice Chair for Faculty Development, Department of Psychiatry, Perelman School of Medicine

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Co-Director, National Clinician Scholars Program, University of Pennsylvania
Director, Center for Digital Health

**Patricia Sullivan, PhD**
Chief Quality Officer, University of Pennsylvania Health System

**Rachel M. Werner, MD, PhD**
Executive Director, Leonard Davis Institute of Health Economics
Robert D. Eilers Professor, Department of Health Care Management, Wharton School
Professor, Department of Medicine, Perelman School of Medicine

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*Note: The text may contain errors or incomplete information. For the most accurate and up-to-date information, please refer to the official sources.*
**Membership**

- 430 total members
- 315 members from Penn/CHOP
- 32% increase in membership since 2020

**Training**

Courses and student enrollment:
- HPR 611 - 21 Students
- HPR 612 - 6 Students

Yearly Implementation Science Institute:
In Summer 2021, we trained 86 external and internal individuals from around the country at the MsHP Implementation Science Institute (ISI)—a 36% increase from last year.

Since 2012, over 400 people have been trained through PISCE@LDI’s educational offerings.

**Events & Speakers**

- We convened 3 Works in Progress meetings and 5 speaker events with an average of 59 attendees.
- At D&I 2021, 7 PISCE@LDI Members gave presentations and presented 17 posters.

**Grants**

- 95 active FY2021 grants
- Direct costs of active grants: more than $22.4M

In 2021, the PISCE@LDI newsletter featured 65 publications by PISCE members.
In January 2021, ten mid-career implementation science researchers came together for a PISCE@LDI-sponsored “pre-mortem” – a group brainstorming exercise aimed at imagining a scenario and trying to explain why it might come to be. In this case, the researchers tried to generate explanations for why implementation science might not move the needle, and why funding from NIH might be deprioritized as a result. They came up with six potential threats to implementation science, including insufficient impact, lack of alignment with stakeholders, and not closing the evidence-to-practice gap. The full results of this meeting will be shared in a forthcoming paper.

**1/14 Ana Baumann**
Ana Baumann, PhD gave a presentation on infusing equity approaches into implementation science. She touched on the importance of focusing on reach and engagement, building implementation strategies to ensure best practices can be enacted, and the science of adaptation.

**2/26 Anne Sales**
PISCE@LDI co-sponsored a talk by Anne Sales, PhD, RN. Her talk focused on implementation science and economics.

**3/15 Works in Progress Meeting**
Julie Szymczak, PhD, and Elle Saine, MD, PhD, MA, delivered a presentation on their manuscript: Incorporating Stigma into Implementation Science: Linking Societal Influence to the Clinical Encounter to Understand Inequities in Healthcare Delivery. In addition, Liza Behrens, PhD, RN, presented on her AHRQ K01 specific aims.

**June 7th-10th Implementation Science Institute 2021**

**4/26 Geoff Curran**
Along with the Penn Center for Mental Health, PISCE@LDI hosted a talk by Geoff Curran, PhD. He discussed hybrid designs and research methods.

**4/22 Sarita Golub**
Sarita Golub, PhD, MPH led a seminar on using implementation science to reduce stigma and promote equitable implementation. This talk was co-sponsored by PISCE@LDI, the Center for AIDS Research, and HIV Grand Rounds.

**9/29 Works in Progress Meeting**
Amanda Bettencourt, PhD, APRN, presented her health system-partnered research project that aims to improve the sustainability of their quality improvement and evidence-based practice projects by training a cohort of implementation science specialist nurses to work on project teams. Yuvaram Reddy, MBBS, MPH, discussed the methodology and preliminary findings of the mixed-methods IM-HOME Study (Identifying major home dialysis barriers).

**11/30 Lola Fayanju**
In a talk co-sponsored by PISCE@LDI and Penn ISC3, Lola Fayanju, MD, MPH presented on health equity and implementation science.

**11/3 Works in Progress Meeting**
Yehoda Martei, MD, MSCE presented both quantitative and qualitative results from her research on optimizing cancer therapy delivery for HIV+ breast cancer patients in Botswana. Sarah Schrauben MD, MSCE presented her work on patient-centered behavioral interventions for improving Chronic Kidney Disease management.
Featured Projects

**Pediatrics**

Eliminating Monitor Overuse (EMO) Hybrid Effectiveness-Deimplementation Trial

Chris Bonafide, MD, MSCE and Rinad Beidas, PhD were awarded a five-year grant from NHLBI for “Eliminating Monitor Overuse (EMO) Hybrid Effectiveness-Deimplementation Trial”. The goal of this project is to conduct a hybrid type III effectiveness-deimplementation trial in 32 pediatric hospitals to test deimplementation strategies on sustainability of guideline-concordant SpO2 monitoring deimplementation in young children with bronchiolitis. The total award amount (including indirect costs) is approximately $5.3 million dollars. You can learn more about this grant [here](#).

Leveraging implementation and behavioral science to reduce harmful overuse of diagnostic testing in critically ill children

Under a mentorship team that included Judy Shea, PhD, Chris Bonafide, MD, MSCE, and Rinad Beidas, PhD, Charlotte Woods-Hill, MD was awarded this K23 from NHBLI. Using cognitive bias and the CFIR framework, she will investigate determinants of overuse of testing for bacterial infections in the pediatric intensive care unit, and then develop and test strategies for reducing overuse in a pilot hybrid trial. The ultimate goal is to reduce unintended harm to fragile pediatric ICU patients from unnecessary tests and treatments.

Promoting Equity in Firearm Safety and Suicide Prevention to Reduce Suicide in Black Youth

Katelin Hoskins, PhD, MBE, CRNP was awarded the American Foundation for Suicide Prevention’s (AFSP) 2021 Postdoctoral Fellowship for her research on health equity and suicide prevention. The study leverages a large implementation trial in Michigan and Colorado to examine if implementation of an evidence-based safe firearm storage program as a universal suicide prevention strategy in pediatric primary care differs across racial groups, as well as factors that may moderate potential disparities. This study will also explore Black parents’ experiences with program receipt and firearm storage decision-making processes.

Cancer

Penn Implementation Science Center in Cancer Control (ISC3) Health Equity Supplement

Krisda Chaiyachati, MD, MPH, MSHP, Katherine Rendle, PhD, MSW, MPH, and Rachel Shelton, ScD, MPH were awarded an NCI supplement grant to investigate how social determinants of health (SDOH), social needs, and social risks impact the implementation of evidence-based cancer care and health equity. The supplement will study both the Outer Context (i.e., broader sociopolitical context) and the Inner Context (i.e., organizations in which the health care is delivered) in order to develop and refine implementation strategies that better address patients’ needs. To achieve this goal, the Penn ISC3 team will 1) partner with all ISC3 Centers to complete an environmental scan of the Outer Context and 2) collaborate with Wake Forest’s iDAPT team to measure Inner Context elements related to social risk and needs assessment. This work will position the research team to launch multi-site pilot implementation studies that improve the measurement and mitigation of SDOH, social risk, and social needs to improve cancer care outcomes and health equity.
Increasing Equitable Adherence to Annual Lung Cancer Screening and Diagnostic Follow-up

Katharine Rendle, PhD, MSW, MPH and Anil Vachani, MD, MS have been awarded a NCCN grant to conduct a pragmatic intervention trial testing the effectiveness of patient and clinician nudge strategies on rates of annual lung cancer screening (LCS) adherence and diagnostic follow-up. The goal of this work is to increase early detection of disease and decrease persistent disparities in lung cancer care and survival. Utilizing qualitative and quantitative techniques, this study evaluates multilevel (i.e., patient, clinician, clinic, organizational) factors contributing to the effects of these interventions. For more information, please click here.

Global

Fidelity and adaptation of breast cancer resource-stratified treatment guidelines in Botswana

Yehoda Martei, MD, MSCE received a K award to study the implementation of evidence-based treatment for HIV-positive and -negative breast cancer patients in Botswana. Currently, real-world data are lacking on the treatment fidelity and the implementation of guideline-based care in Sub-Saharan Africa and in HIV-prevalent regions, where HIV-infected (HIV+) breast cancer patients have a significantly increased risk of all-cause mortality. This study aims to investigate whether inferior outcomes are related to the quality or extent of guideline implementation or other unrelated factors. The long-term goal is to improve survival outcomes in HIV+ and HIV- breast cancer patients in Sub-Saharan Africa by designing targeted interventions to increase high-quality therapy delivery. Through this K award, Dr. Martei aims to: 1) compare treatment fidelity between HIV+ and HIV- breast cancer patients receiving curative intent therapy and identify HIV modifiers of fidelity; 2) use a mixed methods design and a deviance sample of patients with high and low fidelity to identify socioeconomic and cultural modifiers of fidelity; and 3) using the collaborative intervention planning framework to identify targets for guideline adaptation and develop a menu of implementation strategies and intervention trials to promote treatment fidelity.

Behavioral Health

Experiences and Outcomes of Suicidal Individuals with and without Autism in Emergency Departments Nationwide

Shari Jager-Hyman, PhD and Brenna Maddox, PhD, LCP were awarded a two-year grant from NIMH for “Experiences and Outcomes of Suicidal Individuals with and without Autism in Emergency Departments Nationwide.” This mixed methods study will contribute to long-term efforts to reduce deaths by suicide by informing the adaptation and implementation of evidence-based practices for suicide prevention for individuals with autism spectrum disorder (ASD). The study objectives are: (a) to use a retrospective, longitudinal design to compare the experiences and outcomes of individuals with and without ASD who sought care for suicidal ideation (SI) or suicidal behavior (SB) in emergency departments (EDs) nationwide; and (b) to interview key stakeholders about ways to improve ED-based suicide prevention practices and increase post-ED mental health treatment engagement for individuals with ASD. Results will help policymakers and healthcare workers across the U.S. to better understand critical points of prevention and intervention for suicidal individuals with ASD.

Validation of a causal model of implementation

Emily Becker-Haines, PhD received an R01 award to test the generalizability of a conceptual model that posits the causal relationship among variables from organizational and social psychology to predict clinician evidence-based practice (EBP) use. Broadly, the model proposes that organizational factors like climate and culture influence attitudes, norms, and self-efficacy, while other organizational factors like workload, resources, and organizational friction moderate the pathway between intentions and the use of an EBP. This project builds off the work of Dr. Becker-Haines and colleagues’ recently completed NIMH-funded R21, which demonstrated that this model accounted for up to 75% of variance in implementation of three EBPs in community settings. This R01 will test the generalizability of the causal model in a larger sample from a new group of practitioners, for a different and more widely-used EBP, cognitive-behavioral therapy (CBT). Successful completion would further validate the model, advancing our understanding of the causal pathways in EBP implementation. Results will inform the development of implementation strategies that target modifiable factors explaining substantial variance in intention and in implementation that can be applied broadly across EBPs.
Leveraging behavioral economics and implementation science to engage suicidal patients in mental health treatment

Courtney Benjamin Wolk, PhD, and Shari Jager-Hyman, PhD, were awarded an R21 award from the National Institute of Mental Health to rapidly prototype and test promising, low-cost, acceptable, and feasible strategies to increase patients’ attendance at a first mental health visit following identification of suicide risk in primary care. Engagement in mental health treatment reduces risk of death by suicide for patients at high-risk, but suicidal individuals have difficulty imitating and sustaining involvement in mental health services. The study will be conducted within a large, diverse health system that has implemented collaborative care in 8 urban primary care practices. First, the study team will identify characteristics of patients who do and do not attend their first mental health visit following referral. Then, they will conduct a contextual inquiry to identify barriers and facilitators to mental health treatment attendance for individuals at risk of suicide. Finally, they will rapidly prototype, test, and optimize the engagement strategies, which will be informed by behavioral economics and implementation science methods, as well as expert feedback, and will target key mechanisms that impede treatment attendance. The goal of the study is to identify menu of the most promising and feasible implementation strategies to support the initiation of mental health services for patients at risk of suicide that will be tested in a subsequent trial. The long-term goal of this work is to increase engagement in mental health services for suicidal individuals.

Improving Opioid Use Disorder Treatment for Hospitalized Patients with Endocarditis

Rachel French, PhD, RN, received an F32 award from the National Institute on Drug Abuse to study and optimize delivery of care for opioid use disorder-associated infective endocarditis (OUD-IE) in hospitals. Despite the availability of effective treatment for opioid use disorder and the opportunity to intervene during hospitalization, health care staff tend not to address opioid use disorder during hospitalization for OUD-IE, despite patients’ distinctly poor outcomes. Existing models of hospital care for patients with opioid use disorder can inform hospital care delivery for OUD-IE patients, though significant adaptation of these models is needed to meet the needs of OUD-IE patients unique to their prolonged hospital stays. Little is known regarding how to best deploy evidence-based opioid use disorder interventions for medically hospitalized patients. The aims of the proposed study are to: 1) Characterize current practices of health care staff regarding hospital care delivery for OUD-IE patients; 2) Examine the appropriateness, feasibility, and acceptability of implementing evidence-based opioid use disorder care for hospitalized OUD-IE patients; and 3) Adapt an intervention for hospitalized OUD-IE patients and develop a corresponding toolkit of implementation strategies. Findings from this study will increase the currently limited efficacy of care delivery for hospitalized patients with opioid use disorder and ultimately enhance their outcomes.

Acute Care/Sepsis

I-TRANSFER: Improving TRansitions ANd outcomeS of sEpsis suRvivors

Kathryn Bowles, PhD, RN, FAAN, FACMI and colleagues were awarded a new 5-year R01 study from the National Institute of Nursing Research to identify, understand and develop strategies for overcoming barriers to the implementation of effective clinical interventions. Specifically, I-TRANSFER is designed to address several barriers and gaps that may jeopardize the implementation of early post-acute surveillance among sepsis survivors.
The need for mental health treatment far surpasses the availability of specialty mental healthcare. Implementation science is a relatively new field with a lot of energy and promising methods for reducing the research to practice gap. Using implementation science methods, I believe we can develop and evaluate novel strategies to support implementation and integration of the most effective mental health treatments in the myriad of settings that serve individuals with unmet mental health needs.

-Courtney Benjamin Wolk, PhD
Assistant Professor, Psychiatry
(April 2021)

The thing that is most exciting to me right now is the increasing focus on enhancing health equity through implementation science. While there has been substantial mounting evidence of disparities that exist in healthcare, and the negative consequences of this, implementation science lends tools to help reduce the disparities and develop and scale effective innovations. I am excited to continue to learn from leaders in the field how we can work to advance health equity research through implementation science.

- Rebecca Feldman Hamm, MD, MSCE
Winner, Best of D&I Conference 2021
Assistant Professor, Obstetrics and Gynecology
(February 2021)

What I enjoy the most about pursuing a research agenda in implementation science is to be able to work with stakeholders such as the Philadelphia Department of Public Health, community partners, and amazing researchers here at Penn who are passionate about applying implementation science principle into their work.

-Florence Momplaisir, MD, MSHP, FACP
Assistant Professor, Medicine
(June 2021)

The COVID-19 pandemic has illustrated the limitations of clinical effectiveness research and the need for implementation research in humanitarian emergencies. Implementation science provides frameworks and approaches to help ensure that individuals will receive interventions that work. Despite the critical need, few implementation scientists pursue research in this context, so I’m excited about the wealth of possible collaborations and innovative strategies to reduce the burden of disease.

-Amy Van Pelt, PhD, MPH
Postdoctoral Fellow, Psychiatry
(November 2021)

- Courtney Benjamin Wolk, PhD
Assistant Professor, Psychiatry
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(November 2021)

What excites you about implementation science?


Rendle KA, Beidas RS. (2021). Four strategic areas to advance equitable implementation of evidence-based practices in cancer care. Transl Behav Med.


Beidas RS, Buttenheim AM, Mandell DS. (2021). Transforming mental health care delivery through implementation science and behavioral economics. JAMA Psychiatry.


65 publications by PISCE@LDI members were featured in our newsletter, more than twice as many as in 2020.
The wicked problem of booster shots for Americans | Expert Opinion

by Amelia E. Van Pelt and Angela K. Shen, Published Aug 24, 2021; read full article here.

D&I Conference Posters

Adapting and disseminating resilience supports during COVID-19 and beyond - Courtney Wolk, Rebecca Neergaard, Maria Nelson, Lisa Bellini, Kelley Kugler, Emily Becker-Haines

Trust and influence in vaccine messengers and messages for routine and COVID-19 vaccines - Angela K. Shen, Safa Browne, Tuhina Srivastava, Melanie Kornides, Andy SL Tan


"What gets me up in the morning is the opportunity to have an impact — and to move the needle in health care delivery in order to make sure that evidence-based practices are available to everyone."

Penn Medicine Leads the Way

As a learning health care system, Penn Medicine is a pioneer in implementing new practices to transform health care. Besides has been working for the past decade to bring the Implementation science perspective to Penn since she joined the faculty in 2012. Her vision is to make Penn Medicine the leading institution in implementation research, education, and practice.

The senior year besides came to Penn, an Implementation Science Working Group launched, led by John Kimbarly, PhD, and Karen Glanz, PhD. Since so many people were asking what it was, if it was useful, and worth investing in, efforts have been underway since then including coursework developed in the Perelman School of Medicine’s (PSOM) Master of Science in Health Policy Research (MSHR) program. In 2018, the Penn Implementation Science Center at the Leonard Davis Institute (PSCE@LDI) was officially launched. The leadership team includes Besides as founding director, Meghan Lane-Fall, MD, MSHP, director of Acute Care Implementation Research for the center and an associate professor of Anesthesiology and Critical Care, Christopher Bonafide, MD, MSCE, associate director and an associate professor of Pediatrics, Katherine Rende, PhD, MSW, MPH, associate director and an assistant professor of Family Medicine and Community Health, and Courtney Benjamin Wolk, PhD, associate director and an assistant professor of Psychiatry.

Today, Penn is poised to become an international leader in implementation research, education, and practice — consistent with Besides’s vision. The Implementation Science Center has over 300 members from 10 schools across Penn, and over 50 departments, centers, and institutes. They have trained over 400 individuals in implementation science, and the center has a robust grant portfolio of 39 NIH grants and a growing cadre of faculty with expertise in this area. The Penn Implementation Science Institute, a week-long training program, has also been featured as an exemplar institute in a recent publication by NIH leaders.

Sign up for a consultation!

Announcing our PISCE@LDI Consultation Form:

Now you can sign up for one-on-one consultations to address your implementation science needs.

Use the link below to submit a request to meet.

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