

Newsletter October 2022

Dear PISCE@LDI Community,

We hope you had a lovely summer and are excited to welcome you back for a new academic year.

It was wonderful to see so many of you at the 6th annual Implementation Science Institute (ISI) in June. Highlighted by the inspiring opening keynote from [Dr. Wynne Norton](#), the Penn ISI introduced attendees to the foundations of implementation science and cutting-edge advanced topics in the field. With such a lively and engaged group, we're excited to see how our new colleagues apply implementation science to their research and practice! Many thanks to MSHP for co-sponsorship, core faculty for facilitation (Drs. Emily Becker-Haimes, Amanda Bettencourt, Chris Bonafide, Danielle Cullen, Rebecca Hamm, Katie Hoskins, Kate Rendle, Sarita Sonalkar, Rebecca Stewart, and Amy Van Pelt), and visiting faculty for generously sharing their expertise. To participate next year, sign up for the 2023 first-to-know list [here](#).

The Implementation Science Certificate was launched this Fall! More details about the program can be found [here](#). Current degree-enrolled students and nonstudents are both eligible to apply. The deadline for Spring 2023 enrollment is January 20th, 2023. Please reach out the new program coordinator, Kathryn (Kate) O'boyle, at kathryn.oboyle@pennmedicine.upenn.edu to learn more!

With the new academic year, we are excited to announce the appointment of Meghan Lane-Fall, MD, MSHP as Executive Director of PISCE@LDI! Furthermore, PISCE has adopted a new leadership structure: **Katharine Rendle, PhD, MPH** is Director of Cancer Implementation Research; **Christopher Bonafide, MD, MSCE** is Director of Pediatric Implementation Research; and **Courtney Benjamin Wolk, PhD** is Director of Mental Health Implementation Research. Please also join us in welcoming **Amanda Bettencourt, PhD** to the team as Director of Acute Care Implementation Research.

Best wishes,
The PISCE@LDI Leadership Team

Announcements



We are thrilled to reintroduce hybrid Works in Progress (WIP) meetings starting in 2023! As a reminder, these events are for our Penn/CHOP colleagues only.

WIP meetings provide an opportunity for scientists who are interested in adding an implementation science lens or aim(s) to their independent research projects to receive feedback from the PISCE@LDI community.

If you'd like to sign up to present at a WIP meeting, please email Izzy Kaminer at Isabelle.kaminer@pennmedicine.upenn.edu.

Events

Look out for information about upcoming PISCE@LDI programming in the near future! We are excited to share the details of these offerings via the ListServ in the coming weeks.

Newly Funded Grants with an Implementation Science Focus

Poverty, Mental Bandwidth, and an Unconditional Cash Transfer Intervention to Enable Health Behaviors for Pregnant People with HIV



Dr. Aaron Richterman received a K award from the National Institute of Mental Health (NIMH) to study the relationship between mental bandwidth, HIV, and the perinatal period in an impoverished rural population in Haiti. Poverty is an important contributor to poor short- and long-term HIV outcomes for pregnant people with HIV (PrPWH). Furthermore, recent research in behavioral economics suggests that part of poverty's negative effects on health outcomes are mediated by a reduction in mental bandwidth, an effect which may

be magnified during the perinatal period and by HIV. Consequently, anti-poverty interventions, specifically instant cash transfers, targeting PrPWH may be particularly effective at improving health outcomes in this high priority population. The goal of this study is to assess a key pathway—mental bandwidth—by which poverty (and cash transfers to combat poverty) can affect health behaviors among PrPWH in rural Haiti. Through this K award, Dr. Richterman aims to 1) characterize the relationship between mental bandwidth, HIV, and the perinatal period; 2) identify key characteristics of an unconditional cash transfer intervention for PrPWH; and 3) conduct a Hybrid Type 2 effectiveness-implementation trial of an unconditional cash transfer intervention for PrPWH.

De-Implementation of Low-Value Cervical Cancer Screening

Dr. Katharine Rendle was awarded funding from the National Cancer Institute (NCI) to conduct an innovative R01 studying how to best de-implement outdated cervical cancer screening practices. Up to 45% of all cervical cancer screening in the United States is considered to be overuse, despite consensus guidelines and strong evidence of the limited benefit and potential harm of low-value screening. This study will test the effectiveness of patient and clinician de-implementation strategies in primary care and gynecology clinics affiliated with a large healthcare system with high rates of cervical cancer overscreening. Specifically, this study will use two de-implementation strategies: 1) theory-based messaging shown to be effective at decreasing overscreening intentions (patient nudge strategy); and 2) point of care reminders alerting clinicians if patients are not due for screening (clinician nudge strategy). The proposed strategies are designed to support widespread and equitable implementation across diverse settings and, if successful, be translated to address other forms of overuse across primary and specialty care. This work will also help to broadly advance causal theory in de-implementation science by evaluating underlying contextual mechanisms that contribute to the effectiveness of strategies among diverse populations.



Improving Transitions of Care for Hospitalized Patients with Opioid Use Disorder



Dr. Margaret Lowenstein received a K award from the National Institute on Drug Abuse (NIDA) to develop and test strategies that improve transitions of care following hospitalizations for patients with opioid use disorder (OUD). Despite the robust literature on care transitions after hospital discharge for patients with other chronic conditions, there is limited evidence about the best strategies to optimize care engagement for patients with OUD after hospitalization. The objective of this project is to develop and pilot test

strategies to facilitate transitions of care for patients with OUD from the hospital to the community. Dr. Lowenstein aims to 1) use a mixed-methods approach to identify determinants of effective care transitions for patients with OUD from acute care to outpatient treatment at the patient, provider, and system level; 2) partner with hospital and community stakeholders and use implementation mapping to develop a multicomponent, modular toolkit to facilitate transitions from acute care to community addressing multi- level barriers; and 3) conduct a pilot trial of the care transition toolkit.

Leveraging the electronic health record and behavioral nudges to promote primary and specialist palliative care for inpatients with serious illness: A pragmatic trial

Dr. Katherine Courtright was awarded funds from the National Institute on Aging (NIA) to conduct an R01 evaluating a strategy to provide either primary or specialist palliative care for seriously ill hospitalized patients. Though most hospitals in the U.S. have invested in specialist palliative care programs, palliative care delivery remains insufficient among patients with serious illness, particularly those with advanced Alzheimer's Disease and Related Dementias (ADRD). Moreover, use of specialist palliative care services is often inefficient and inequitable, largely due to clinicians' difficulty identifying which patients are most likely to benefit from them. This pragmatic trial will test a simple intervention embedded within the electronic health record that gently nudges clinicians to provide palliative care themselves or engage experts for hospitalized patients with serious illness and will identify factors that affect clinicians' decisions regarding palliative care delivery. Additionally, treatment effect heterogeneity will be evaluated among patients with ADRD and other pre-specified subgroups to



determine which types of patients derive the greatest benefit from a systematic approach to nudge palliative care.

Improving the Organizational Social Context to Address Structural Racism and Discrimination: A Randomized Controlled Trial to Reduce Racial Disparities in Viral Suppression and Retention in HIV Care



Drs. Florence Momplaisir and John Barton Jemmott III have been awarded funds by the National Institute of Nursing Research (NINR) to conduct an R01 testing the implementation of ARC (Accessibility, Responsiveness, Continuity) in a randomized controlled trial (RCT) to improve organizational

behavior and reduce racial disparities in HIV outcomes for people living with HIV (PLWH). Black/African American persons (13% of the US population) account for 41% of new HIV diagnoses and experience the lowest rates of retention in HIV care and viral suppression (VS) compared to other racial/ethnic groups. The goal of ARC is to create organizational social contexts (OSCs) that support the implementation of interventions to improve patient outcomes. In this RCT, clinics assigned to receive ARC will address structural racism and discrimination (SRD) at the organizational level affecting care, including referral and treatment patterns for PLWH. The study will compare HIV outcomes, namely viral suppression and retention in care, and intermediate outcomes, such as linkage to mental health treatment and staff turn-over in clinics assigned to ARC and standard-of-care (SOC). It will also be evaluated whether individual (self-efficacy, perceived discrimination) and organizational factors (OSC and cohesion of OSC measures) mediate the relationship between ARC, intermediate, and HIV outcomes.

Using Behavioral Economics and Implementation Science to Advance the Use of Genomic Medicine Utilizing an EHR Infrastructure across a Diverse Health System

Drs. Robert Scholl, Katherine Nathanson, and Marylyn Ritchie were awarded funds from the National Human Genome Research Institute (NHGRI) to conduct a highly innovative R01 that will evaluate



the use of clinician and/or patient nudges to advance the use of genomic medicine. The number of medical conditions for which the results of genetic testing change the medical management of patients is exponentially increasing, however, a minority of eligible patients receive genetic testing, despite the implications for downstream care. This project aims to 1) develop electronic phenotyping algorithms for 10 clinical conditions while working with a Stakeholder Advisory Council to refine nudges; 2) conduct a hybrid type 3 implementation study, using a cluster randomized design to examine the impact on the rate of genetic testing of: the patient priming nudge, the two clinician nudges, combined patient and each of the clinician nudges, vs. a generic best practice alert (BPA) (no clinician or patient nudge); and 3) engage in systematic methods to disseminate EHR integration of genetic testing, EHR-based algorithms, and other materials and systems built for the clinical trial through Epic, PheKB, NHGRI’s AnVIL, and GitHub.

Featured Publications

Bass GA, Kaplan LJ, Ryan ÉJ, Cao Y, Lane-Fall M, Duffy CC, Vail EA, Mohseni S. (2022). [The snapshot audit methodology: design, implementation and analysis of prospective observational cohort studies in surgery](#). *Eur J Trauma Emerg Surg*.

Becker-Haimes EM, Ramesh B, Buck JE, Nuske HJ, Zentgraf KA, Stewart RE, Buttenheim A, Mandell DS. (2022). [Comparing output from two methods of participatory design for developing implementation strategies: traditional contextual inquiry vs. rapid crowd sourcing](#). *Implement Sci*.

Carpenter JG, Scott WJ, Kononowech J, Foglia MB, Haverhals LM, Hogikyan R, Kolanowski A, Landis-Lewis Z, Levy C, Miller SC, Periyakoil VJ, Phibbs CS, Potter L, Sales A, Ersek M. (2022). [Evaluating implementation strategies to support documentation of veterans' care preferences](#). *Health Serv Res*.

Coon ER, Bonafide C, Cohen E, Heath A, McDaniel CE, Schroeder AR, Kaiser SV. (2022). [HEROIC Trials to Answer Pragmatic Questions for Hospitalized Children](#). *Hosp Pediatr*.

Creed TA, Salama L, Slevin R, Tanana M, Imel Z, Narayanan S, Atkins DC. (2022). [Enhancing the quality of cognitive behavioral therapy in community mental health through artificial intelligence generated fidelity feedback \(Project AFFECT\): a study protocol](#). *BMC Health Serv Res*.

Ersek M, Sales A, Keddem S, Ayele R, Haverhals LM, Magid KH, Kononowech J, Murray A, Carpenter JG, Foglia MB, Potter L, McKenzie J, Davis D, Levy C. (2022). [Preferences Elicited and Respected for Seriously Ill Veterans through Enhanced Decision-Making \(PERSIVED\): a protocol for an implementation study in the Veterans Health Administration](#). *Implement Sci Commun*.

Gagnon K, Ortiz-Siberón Á, Patel ND, James R, Hawk M, Damian AJ, Beidas R. (2022). [Identifying facilitators, barriers, and strategies to implement social determinants of health screening, referral, and follow-up in the US: a scoping review protocol](#). *JBIM Evid Synth*.

Hochberg CH, Card ME, Seth B, Kerlin MP, Hager DN, Eakin MN. (2022). [Factors Influencing the Implementation of Prone Positioning During the COVID-19 Pandemic: A Qualitative Study](#). *Ann Am Thorac Soc*.

Hoskins K, Linn KA, Ahmedani BK, Boggs JM, Johnson C, Heintz J, Marcus SC, Kaminer I, Zabel C, Wright L, Quintana L, Bутtenheim AM, Daley MF, Elias ME, Jager-Hyman S, Lieberman A, Lyons J, Maye M, McArdle B, Ritzwoller DP, Small DS, Westphal J, Wolk CB, Zhang S, Shelton RC, Beidas RS. (2022). [Equitable implementation of S.A.F.E. Firearm: A multi-method pilot study](#). *Prev Med*.

Hoskins K, Sanchez AL, Hoffacker C, Momplaisir F, Gross R, Brady KA, Pettit AR, Zentgraf K, Mills C, Coley D, Beidas RS. (2022). [Implementation mapping to plan for a hybrid trial testing the effectiveness and implementation of a behavioral intervention for HIV medication adherence and care retention](#). *Front Public Health*.

Khazanov GK, Jager-Hyman S, Harrison J, Candon M, Bутtenheim A, Pieri MF, Oslin DW, Wolk CB. (2022). [Leveraging behavioral economics and implementation science to engage patients at risk for suicide in mental health treatment: a pilot study protocol](#). *Pilot Feasibility Stud*.

Last BS, Schriger SH, Becker-Haimes EM, Fernandez-Marcote S, Dallard N, Jones B, Beidas RS. (2022). [Economic Precarity, Financial Strain, and Job-Related Stress Among Philadelphia's Public Mental Health Clinicians](#). *Psychiatr Serv*.

Lee IT, Sansone S, Irfan M, Copp T, Beidas R, Dokras A. (2022). [Implementation of international guidelines for polycystic ovary syndrome: barriers and facilitators among gynecologists and primary care providers](#). *F S Rep*.

Locke J, Hassrick EM, Stahmer AC, Iadarola S, Boyd B, Mandell DS, Shih W, Hund L, Kasari C; AIR-B Network. (2022). [Using Novel Implementation Tools for Evidence-based Intervention Delivery \(UNITED\) across public service systems for three evidence-based autism interventions in under-resourced communities: study protocol](#). *BMC Psychiatry*.

Lowenthal ED, DeLong SM, Zandoni B, Njuguna I, Beima-Sofie K, Dow D, Shayo A, Schreiberman A, Ahmed CV, Chapman J, Chen L, Mehta S, Mbizvo MT. (2022). [Impact of COVID-19 on Adolescent HIV Prevention and Treatment Research in the AHISA Network](#). *AIDS Behav*.

Maddox BB, Phan ML, Byeon YV, Wolk CB, Stewart RE, Powell BJ, Okamura KH, Pellicchia M, Becker-Haimes EM, Asch DA, Beidas RS. (2022). [Metrics to evaluate implementation scientists in the USA: what matters most?](#) *Implement Sci Commun*.

O'Brien K, Burke R, Karlawish J. (2022). [A Roadmap for Modifying Clinician Behavior to Improve the Detection of Cognitive Impairment](#). *J Gen Intern Med*.

O'Connor M, Kennedy EE, Hirschman KB, Mikkelsen ME, Deb P, Ryvicker M, Hodgson NA, Barrón Y, Stawnychy MA, Garren PA, Bowles KH. (2022). [Improving transitions and outcomes of sepsis survivors \(I-TRANSFER\): a type 1 hybrid protocol](#). *BMC Palliat Care*.

Rendell S, Schmidt H, Neergaard R, Nkwihoreze H, Barbati Z, Short WR, Rana AI, Sheth AN, Scott RK, Sethi S, Momplaisir FM. (2022). [Integrating ART adherence support technologies in the care of pregnant and postpartum people with HIV: a qualitative study](#). *Implement Sci Commun*.

Rudd BN, Davis M, Doupnik S, Ordorica C, Marcus SC, Beidas RS. (2022). [Implementation Strategies Used and Reported in Brief Suicide Prevention Intervention Studies](#). *JAMA Psychiatry*.

Salloum RG, Bishop JR, Elchynski AL, Smith DM, Rowe E, Blake KV, Limdi NA, Aquilante CL, Bates J, Beitelshes AL, Cipriani A, Duong BQ, Empey PE, Formea CM, Hicks JK, Mroz P, Oslin D, Pasternak AL, Petry N, Ramsey LB, Schlichte A, Swain SM, Ward KM, Wiisanen K, Skaar TC, Van Driest SL, Cavallari LH, Tuteja S. (2022). [Best-worst scaling methodology to evaluate constructs of the Consolidated Framework for Implementation Research: application to the implementation of pharmacogenetic testing for antidepressant therapy](#). *Implement Sci Commun*.

Sanchez AL, Hoskins K, Pettit AR, Momplaisir F, Gross R, Brady KA, Hoffacker C, Zentgraf K, Beidas RS. (2022). [Stakeholder Perspectives on MAPS](#). *J*

Acquir Immune Defic Syndr.

Satish S, Bravo L, McAllister A, Teitelman A, Sonalkar S. (2022).[Provision of HIV pre-exposure prophylaxis to female patients seeking family planning services in the United States.](#) *AIDS*.

Ullman AJ, Beidas RS, Bonafide CP. (2022).[Methodological progress note: Hybrid effectiveness-implementation clinical trials.](#) *J Hosp Med*.

Varughese LA, Bhupathiraju M, Hoeffcker G, Terek S, Harr M, Hakonarson H, Cambareri C, Marini J, Landgraf J, Chen J, Kanter G, Lau-Min KS, Massa RC, Damjanov N, Reddy NJ, Oyer RA, Teitelbaum UR, Tuteja S. (2022).[Implementing Pharmacogenetic Testing in Gastrointestinal Cancers \(IMPACT-GI\): Study Protocol for a Pragmatic Implementation Trial for Establishing DPYD and UGT1A1 Screening to Guide Chemotherapy Dosing.](#) *Front Oncol*.

Williams NJ, Becker-Haimes EM, Schriger SH, Beidas RS. (2022).[Linking organizational climate for evidence-based practice implementation to observed clinician behavior in patient encounters: a lagged analysis.](#) *Implement Sci Commun*.

Williams NJ, Preacher KJ, Allison PD, Mandell DS, Marcus SC. (2022).[Required sample size to detect mediation in 3-level implementation studies.](#) *Implement Sci*.

Wood SM, Meanley S, Bonett S, Torres ME, Watson DL, Williams JL, Brady KA, Bauermeister JA. (2022). [Strengthening HIV Prevention Services Through an Implementation Science Approach: Perspectives From the HIV Testers in Philadelphia.](#) *J Acquir Immune Defic Syndr*.

Woods-Hill CZ, Colantuoni EA, Koontz DW, Voskertchian A, Xie A, Thurm C, Miller MR, Fackler JC, Milstone AM; Bright STAR Authorship Group, Agulnik A, Albert JE, Auth MJ, Bradley E, Clayton JA, Coffin SE, Dallefeld S, Ezetendu CP, Fainberg NA, Flaherty BF, Foster CB, Hauger SB, Hong SJ, Hysmith ND, Kirby AL, Kociolek LK, Larsen GY, Lin JC, Linam WM, Newland JG, Nolt D, Priebe GP, Sandora TJ, Schwenk HT, Smith CM, Steffen KM, Tadphale SD, Toltzis P, Wolf J, Zerr DM. (2022). [Association of Diagnostic Stewardship for Blood Cultures in Critically Ill Children With Culture Rates, Antibiotic Use, and Patient Outcomes: Results of the Bright STAR Collaborative.](#) *JAMA Pediatr*.

Training Opportunities and Conferences

15th Annual Conference on the Science of Dissemination and Implementation in Health: (Re)Building Better Systems: Being Proactive, Nimble, and Responsive

Dates: December 11-14, 2022
Location: Walter E. Washington Convention Center - Washington, DC

This year, the NIH and Academy Health Dissemination & Implementation (D&I) Conference will convene in-person for the first time since the COVID-19 pandemic with the theme (Re)Building Better Systems: Being Proactive, Nimble, and Responsive. This year’s theme will build upon lessons learned about rapidly changing community health and clinical settings to envision new models for conducting D&I science that respond to the shifting needs of diverse systems and populations. Moreover, the conference will focus on developing flexible and rigorous methodologies to anticipate challenges and ongoing change. While the call for abstracts has closed, there is still time to register!

Registration information can be found [here](#). **The deadline for the early registration pricing is October 17th.** *The standard registration deadline is Dec. 10th, with onsite registration available as well at an increased rate.*[Click here to register.](#)

HPR 6120: Advanced Topics in Implementation Science in Health — Summer 2023
Dates: Thursdays from 12-2:50 PM, Summer Term II, 2023
Location: Online

This seminar course offers an opportunity for students to advance their understanding of the thorniest methodological challenges in implementation science. Broadly, topics include study design, study execution, and tensions in the field. The intention will be for attendees to directly apply their learnings to their ongoing or proposed implementation research. **This half-credit course is intended for those who have already been exposed to the foundational content of implementation science.** This can be achieved via HPR 6110, the Penn Implementation Science Institute, or other training opportunities (such as the NIH TIDIRH/TIDIRC or mentored K awards). **Prerequisites:** Must obtain permission by instructor. *This course is part of the IS certificate curriculum.*

Admission is open to ALL. Penn tuition rates will apply for those who are not affiliated with Penn.

Course Directors: Meghan Lane-Fall, MD, MSHP, FCCM
Credit(s): 0.5

Implementation Science Institute — Summer 2023

Dates: June 6-9th 2023 from 12-5pm Eastern
Location: Online

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 introduce 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 directors will cover tips for grant writing and skill development, with time dedicated to writing specific aims for Implementation Science grants. We will also explicitly describe how principles of implementation science can be applied to practical implementation efforts.

Admission is open to ALL.

Click [here](#) to sign up for the 2023 first-to-know list!

Opportunities at Penn

Programs

Apply for the Penn LDI Emerging Scholars Exchange Program

The Emerging Scholars Exchange Program is designed to provide professional development opportunities for LDI’s early career faculty via invited presentations at prestigious peer universities. Through the Exchange Program, early career faculty will have the opportunity to develop relationships with potential research collaborators, mentors, and sponsors; hone their oral presentation skills; and bolster their CVs as they prepare for promotion.

Click [here](#) for more information on eligibility and application requirements.

Applications are due on Friday, October 14, 2022 at 5:00 p.m. ET.

Funding

Apply for pilot funding for research addressing mental health and HIV with The Penn Mental Health AIDS Research Center(PMHARC)

This opportunity to apply for pilot funding for research addressing mental health and HIV with PMHARC is available to investigators from Penn/CHOP only.

Please consider developing any ideas for a pilot that corresponds to PMHARC’s priority areas (below) into a 1- page concept for review in their 2023 call for pilot concepts (see attached for further details). Qualitative and mixed methodologies are encouraged. Concepts that address issues of social determinants of health (SDOH) and health disparities will be prioritized.

Priority areas of research for 2023 pilots are:

- Explorations of the role of race in the assessment and treatment of mental health and neurological conditions among people with HIV
- Aging and HIV
- Crosscutting studies in molecular virology, metabolomics, chronobiology, and the microbiome
- Studies that address mental health and HIV using digital phenotyping and mobile health
- Treatment or assessment of psychiatric disorders among people with HIV and co-occurring medical conditions such as metabolic syndrome, heart disease, diabetes, obesity, cancers, HCV, TB, or substance use disorders
- Interventions/treatments of psychiatric conditions to improve access and adherence to anti-retroviral therapy (ART) or Pre-Exposure Prophylaxis (PrEP)

In addition to pilot funding, approved pilots can receive free services from PMHARC’s Community Engagement, Clinical Assessment, Biostatistics, and Laboratory and Biomarker Cores. More information about the Cores can be found [here](#). A list of previously-funded pilot projects can be found[here](#).

Click [here](#) to apply via REDCap.

For further information, please contact Chelsea Voytek, MPH at chelseav@penntestmed.upenn.edu or Dave Metzger, PhD, Director of Developmental Core, at dsm@penntestmed.upenn.edu.

Applications are due Friday, October 14, 2022.

Apply to the Penn LDI Small Grants Program: 2022 Request for Proposals

The Leonard Davis Institute of Health Economics (LDI) is requesting proposals for pilot research grants investigating issues in health care delivery, health policy, and population health.

This Request for Proposals is intended to:

- Stimulate innovative new research ideas among the Penn community
- Encourage new collaborations between investigators from different schools, backgrounds, and disciplines
- Lead to new extramural grant funding or a new research program for the

PI

Pilot proposals that help support these goals will be given preference, as will proposals that align with at least one of LDI’s priority focus areas. These areas are: (1) health care access and coverage; (2) health equity; (3) improving care for older adults; (4) the opioid epidemic; and (5) population health. We are particularly interested in proposals bringing new perspectives or disciplinary approaches to research questions.

Click [here](#) for more information on eligibility and application requirements.

Applications are due by Monday, November 14, 2022 at 9:00 a.m. ET.

Check out our website

Check us out on Twitter

University of Pennsylvania | Colonial Penn Center, 3641 Locust Walk, Philadelphia, PA 19104

[Unsubscribe](#) beidaslab@gmail.com

[Update Profile](#) | [Constant Contact Data Notice](#)

Sent by meghan.lanefall@pennmedicine.upenn.edu powered by



Try email marketing for free today!