



# US Deprescribing Research Network

ANNUAL REPORT 2024



Network Co-Principal Investigators: Michael Steinman, MD and Cynthia Boyd, MD, MPH

[www.deprescribingresearch.org](http://www.deprescribingresearch.org)



# Welcome

The US Deprescribing Research Network (USDeN) is a national research network devoted to supporting high-quality, high-impact research on deprescribing for older adults. Funded by the US National Institute on Aging since 2019, our work is organized around four key pillars:

- We support Investigator Development by providing opportunities for learning, collaboration, and community.
- We facilitate Stakeholder Engagement so that deprescribing research is responsive to the needs and perspectives of older adults and those who care for them.
- We provide Pilot and Grant Planning Awards to catalyze novel research and junior investigator career advancement related to deprescribing.
- We develop high-value Research Resources and Guidance to promote cutting-edge research and advance the field.



We welcome you to learn more and to join our community! Please visit us at [deprescribingresearch.org](https://deprescribingresearch.org) to learn more and sign up for our listserv to keep abreast of upcoming events and resources.

Cynthia Boyd and Michael Steinman, Co-Principal Investigators, USDeN

## What is Deprescribing?

Deprescribing refers to the thoughtful and systematic process of identifying problematic medications and reducing the dose or stopping these medications in a manner that is safe, effective, and helps people maximize their wellness and goals of care.

Deprescribing is not easy. Much is unknown about how to best identify which medications are prime for deprescribing, how to safely and effectively stop them, and how to engage patients and families, clinicians, and the health system in this process in a seamless and patient-centered manner. These are the challenges our network seeks to address.

# Why is Deprescribing Important?



In the US, 67% of older adults take 5 or more medications.<sup>1</sup>

9%

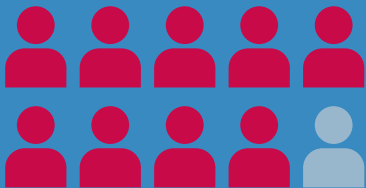


Adverse drug reactions account for 1 of every 11 hospital admissions among older adults.<sup>1</sup>



In the US, more than 1 in 7 older adults are using medications with potential for major drug-drug interactions.<sup>1</sup>

15%



More than 9 in 10 would be willing to stop taking one or more of their medicines if their physician said it was possible.<sup>2</sup>



2 out of every 3 older adults want to reduce the number of medications they are taking.<sup>2</sup>

67%



About 1 in 3 older adults use at least one potentially problematic medication.<sup>3</sup>

<sup>1</sup> Qato et al, <https://pubmed.ncbi.nlm.nih.gov/26998708/>

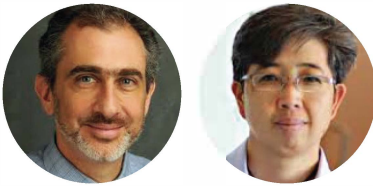
<sup>2</sup> Reeve et al, <https://pubmed.ncbi.nlm.nih.gov/30326004/>

<sup>3</sup> Tian et al, <https://pubmed.ncbi.nlm.nih.gov/37531105/>





# Investigator Development



Led by **Drs. Kenneth Boockvar** and **Jennifer Tjia**, our Investigator Development Core has focused on building a community of learning, collaboration, and support for investigators interested in deprescribing. In August 2024, work on the next funding cycle of USDeN began, including updates to several of our investigator development programs. Visit our website and stay tuned for next year's report for more information.

## WEBINARS

This past year, we organized or co-hosted 10 webinars with over 400 participants. Topics ranged from stakeholder-driven research to multi-site deprescribing trials. More than 95% of attendees rated the sessions as very good or excellent. Visit our website to learn more and view archived sessions.

## JUNIOR INVESTIGATOR INTENSIVE PROGRAM

The JII program provides an interdisciplinary community of learning with virtual works-in-progress conferences, core curriculum, office hours, and special webinars designed to help participants advance their research and research careers.

### Junior Investigator Intensive Dinner

All four cohorts of the Junior Investigator Intensive (JII) program gathered for an evening event prior to the 2024 Annual Network Meeting on the evening of May 14th in Boston, Massachusetts. This event provided an opportunity for cohort members to connect and collaborate on potential deprescribing-related projects. The event included a panel fireside chat on "The First Five Years: Building your Research Shop" which included topics such as team management and strategies for getting non-traditional funding. Attendees also participated in collaborative brainstorming huddles and discussed setting a path forward for 2024 collaborative projects.



## ANNUAL MEETING

The capstone of our investigator development activities is our annual meeting. The 2024 meeting was a great success, with 135 registrants and an invigorating lineup of speakers, panels, and other activities, including keynote speaker Niteesh Choudhry, MD, PhD of Harvard Medical School, who spoke of novel approaches to personalizing deprescribing interventions. We also had strong engagement with our poster session, with nearly 60 posters presented and a very high level of enthusiasm. Program evaluations showed that 100% rated the overall meeting quality as very good or excellent, and we were especially pleased with new collaborations and relationships that emerged from the time attendees spent together. Visit our website to view archived sessions and plans for our next annual meeting.

# Past USDeN Awardees and Scholars

Many of our USDeN awardees and scholars continue to do highly impactful work in deprescribing. Of the many papers published and grants received, we have highlighted a few below:



**Ariel Green, MD, MPH, PhD**, Johns Hopkins, a Year 1 Pilot Awardee, was named a recipient of a Demonstration Project Award from the NIA IMPACT Collaboratory and published a paper in the Journal of the American Geriatrics Society.

Paper: **Pharmacist-led telehealth deprescribing for people living with dementia and polypharmacy in primary care: A pilot study.**<sup>1</sup>

**Michelle Keller, PhD, MPH, USC**, and **Utibe Essien, MD, MPH, UCLA**, former Junior Investigator Intensive (JII) program scholars, collaborated at the 2023 USDeN Annual Meeting, resulting in a publication in JAMA Internal Medicine.

Paper: **Deprescribing Equity-A Research Framework for Older Adults.**<sup>2</sup>



**Maria Papaleontiou, MD**, University of Michigan, a Year 3 Pilot Awardee, advanced her USDeN-funded pilot project into a successful R01 to study optimizing care for older adults through thyroid hormone deprescribing.

**Juliessa Pavon, MD**, Duke, a former JII program scholar, obtained an R01 grant to study deprescribing decision-making using machine learning individualized treatment rules to improve CNS polypharmacy and published this paper in the Journal of the American Geriatrics Society.

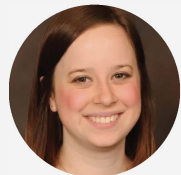
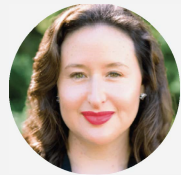
Paper: **Deprescribing electronic case reviews for older veterans at risk for falls: Effects on drug burden and falls.**<sup>3</sup>



**Jinjiao Wang, PhD, RN**, University of Rochester, a Year 3 pilot awardee, translated this USDeN-supported work into a Beeson Emerging Leaders Career Development Award from the National Institute on Aging focused on supporting deprescribing through home nursing care.

**Sarah Vordenberg, PharmD, MPH**, University of Michigan, a Year 2 Pilot Awardee, used her USDeN-supported pilot work to obtain an ongoing R01 grant on psychotropic and opioid polypharmacy and published a paper in the Journal of the American Geriatrics Society.

Paper: **Clinician contributions to central nervous system-active polypharmacy among older adults with dementia in the United States.**<sup>4</sup>



<sup>1</sup> Green AR, Quiles R, Daddato AE, Merrey J, Weffald L, Gleason K, Xue QL, Swarthout M, Feeser S, Boyd CM, Wolff JL, Blinka MD, Libby AM, Boxer RS. Pharmacist-led telehealth deprescribing for people living with dementia and polypharmacy in primary care: A pilot study. J Am Geriatr Soc. 2024 Jul;72(7):1973-1984. doi: 10.1111/jgs.18867.

<sup>2</sup> Essien UR, Keller MS. Deprescribing Equity-A Research Framework for Older Adults. JAMA Intern Med. 2024 Oct 1;184(10):1258-1259. doi: 10.1001/jamainternmed.2024.3824. PMID: 39133477.

<sup>3</sup> Pavon JM, Davidson S, Sloane R, Pepin M, Bryan W, Bailey J, Igwe I, Colon-Emeric C. Deprescribing electronic case reviews for older veterans at risk for falls: Effects on drug burden and falls. J Am Geriatr Soc. 2024 Feb;72(2):433-443. doi: 10.1111/jgs.18650.

<sup>4</sup> Vordenberg SE, Davis RC, Strominger J, Marcus SC, Kim HM, Blow FC, Wallner LP, Caverly T, Krein S, Maust DT. Clinician contributions to central nervous system-active polypharmacy among older adults with dementia in the United States. J Am Geriatr Soc. 2024 Nov 5. doi: 10.1111/jgs.19256.



# Pilot and Grant Planning Awards



Led by **Drs. Sandra Simmons** and **Amanda Mixon**, our Pilot Core provides and supports pilot

awards designed for junior investigators to conduct small-scale or pilot projects that can lead to future, larger research opportunities. In addition, in summer 2022 we were awarded a \$900,000 administrative supplement from the National Center for Complementary and Integrative Health to expand our pilot program to support large pilot studies on the use

of complementary and integrative health modalities to support benzodiazepine deprescribing in older adults. Our call for applications yielded 12 full applications, from which 4 were selected for funding and are now nearing completion.

Our Pilot Core works closely with the Stakeholder Engagement Core and meets regularly with funded investigators to help them advance their work, troubleshoot problems, and identify best practices for partnering with stakeholders.

## PROFILE

### Malinee Neelamegam, PhD Pilot Grant Awardee



Dr. Malinee Neelamegam is an assistant professor at the University of North Texas Health Science Center College of Public Health. She is a social epidemiologist with expertise in aging and chronic disease management in populations facing health disadvantage, with a particular focus on the intersection of social determinants of health and cognitive function in older adults. In her US Deprescribing Network (USDeN) pilot study, she seeks to understand barriers and facilitators of deprescribing among Latinx older adults with multiple chronic conditions, aiming to develop a shared decision-making aid to support deprescribing decisions in this population. Her long-term goal is to create culturally appropriate tools that improve medication safety and advance healthy aging.

Utilizing a community-engaged research approach, Dr. Neelamegam collaborates closely with community stakeholders and advisory boards to ensure that her research is aligned with community priorities. For her pilot study, she worked with local organizations and community leaders to recruit Latinx older adults, gathering insights through qualitative interviews and surveys. These efforts emphasized the importance of understanding cultural nuances, language preferences, and socioeconomic factors influencing medication management decisions.

Drawing from her findings, Dr. Neelamegam is designing a culturally tailored educational intervention to facilitate deprescribing and improve medication safety for Latinx older adults. She plans to leverage implementation science frameworks to assess the effectiveness of this intervention in broader populations and a range of clinical settings, contributing to the advancement of health in aging populations.

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Engaging with the US Deprescribing Network for this pilot award has been a tremendously positive experience. The mentorship I received from the pilot program directors provided invaluable support in thinking through the project and its implementation. The opportunity to engage with stakeholders and network with colleagues at the USDeN meeting has been equally invaluable. I look forward to continued engagement with the network as I build upon this work.

**Malinee Neelamegam, PhD**

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## YEAR 5 PILOT AWARDEES



**Sion Scott, MPharm, PhD**  
*University of Leicester*  
**Validation of the Patient Experience of Deprescribing Questionnaire (PED-Q)**



**Parag Goyal, MD, MSc**  
*Weill Cornell Medicine*  
**N-of-1 Trials to Promote Deprescribing in Older Adults with Transthyretin Cardiac Amyloidosis**



**Lisa LaRowe, PhD**  
*Massachusetts General Hospital*  
**Evaluating Substance Use-Related Outcomes in Opioid Deprescribing among Older Adults with Chronic Pain: A Mixed Methods Study**



**Malinee Neelamegam, PhD**  
*University of North Texas Health Science Center*  
**Understanding barriers and facilitators of deprescribing to aid the development of a shared decision-making aid for deprescribing for older Latinx adults with multimorbidity.**

## BENZODIAZEPINE PILOT STUDIES Special Administrative Supplement Awardees



**Elizabeth Addington, PhD**  
*Northwestern University Feinberg School of Medicine*  
**Positive emotion regulation intervention for benzodiazepine receptor agonist deprescribing in older adults: Anxiety Lowering and Deprescribing through Emotion Regulation (ALDER)**



**Timothy Anderson, MD, MAS**  
*Beth Israel Deaconess Medical Center*  
**Pilot of a Brief Cognitive Behavioral Therapy Intervention to Enhance Benzodiazepine Deprescribing**



**Gurjeet Birdee, MD, MPH**  
*Vanderbilt University Medical Center*  
**Augmenting BRZA Deprescribing with Acupuncture and Yoga Among Older Adults**



**Ryan Bradley, ND, MPH**  
*University of California, San Diego*  
**Remotely delivered Yoga Nidra for Decreasing Use of BZRAs for Insomnia and Anxiety in Older Adults**

# Data and Resources and Working Groups



Led by **Drs. Elizabeth Bayliss** and **Sascha Dublin**, the Data and Resources Core has offered a variety of resources and expert guidance to support deprescribing research, with additional resources currently under development. In addition, the network has convened a series of Working Groups to develop high-value resources and best-practice guidance to advance the field. Additional, new projects are getting underway with the new cycle of USDeN funding. See our website and next year’s report for details.

## IRB AND DATA SAFETY MONITORING RESOURCES

Deprescribing research poses special challenges for regulatory review and data safety monitoring. For example, if a medication is stopped and a study subject experiences a clinical event that could be prevented by that medication, does that count as a safety event? We have compiled a compendium of successful IRB applications and data safety monitoring plans that demonstrate how experienced investigators have navigated these challenges.

## MEASUREMENT IN DEPRESCRIBING RESEARCH

Led by Dr. Elizabeth Bayliss, this working group undertook a rigorous process to conceptualize and develop guidance on outcome measures that are important to assess in clinical studies of deprescribing.

Bayliss EA, Albers K, Gleason K, Pieper LE, Boyd CM, Campbell NL, Ensrud KE, Gray SL, Linsky AM, Mangin D, Min L, Rich MW, Steinman MA, Turner J, Vasilevskis EE, Dublin S. Recommendations for outcome measurement for deprescribing intervention studies. J Am Geriatr Soc. 2022 Sep;70(9):2487-2497.

## COMMUNICATION WORKING GROUP

This Working Group has developed a conceptual framework to represent the scope, content, and participants in deprescribing communication. This framework illustrates that communication extends beyond interactions between patients and their clinicians, including communication that occurs at the health system and community level. This framework was used to evaluate the results of two critical reviews, which were conducted to summarize how communication is currently being used in trials of deprescribing. This demonstrated many missed opportunities to use a broad variety of communication strategies to achieve deprescribing. This body of work was presented as an oral abstract at the 2nd International Conference on Deprescribing in September 2024, and published in the Journal of the American Geriatrics Society.

Fried TR, Ouyang N, Gnjjidic D, Green A, Hilmer S, Holmes HM, Ko S, Mecca M, Reeve E, Reyes CE, Schoenborn NL, Singh R, Street R, Wahler RG Jr, Funaro MC. Communication as a key component of deprescribing: Conceptual framework and review of the literature. J Am Geriatr Soc. 2024 Dec 11. doi: 10.1111/jgs.19305

This Working Group is currently developing a framework for clinician-patient-care partner communication in order to identify best practices and outline a research agenda.

## LITERATURE SEARCH STRATEGY GUIDANCE

The field of deprescribing has evolved over the past thirty years, and investigators conducting deprescribing research need to know what other studies are in their area to gain insights, facilitate collaborations, harmonize measures across studies, and to avoid duplication of efforts. To further support these efforts, we have developed a literature search strategy guidance tool that can use broad and narrow search parameters tailored to an investigator’s purpose for the literature search.

## HIGH-VALUE TARGETS FOR DEPRESCRIBING

This Working Group led by Dr. Shelly Gray developed an overview of systematic reviews of deprescribing studies to identify what types of interventions, medications, and care settings yield the greatest impact for deprescribing and associated clinical outcomes. The below manuscript was published in June 2024.

Chua S, Todd A, Reeve E, Smith SM, Fox J, Elsis Z, Hughes S, Husband A, Langford A, Merriman N, Harris JR, Devine B, Gray SL; Expert Panel. Deprescribing interventions in older adults: An overview of systematic reviews. PLoS One. 2024;19(6):e0305215.

## DATA HARMONIZATION WORKING GROUP

This Working Group, led by Dr. Sascha Dublin, focused on developing, operationalizing, and implementing measures for use in deprescribing studies. It included researchers from 5 institutions with different data systems, including Kaiser Permanente Washington, Duke, University of Pennsylvania, Kaiser Permanente Colorado, and the Durham VA Health Care System. This year, the group published their findings and recommendations in the Journal of the American Geriatrics Society.

Dublin S, Albertson-Junkans L, Pham Nguyen TP, Pavon JM, Hastings SN, Maciejewski ML, Willis A, Zepel L, Hennessy S, Albers KB, Mowery D, Clark AG, Thomas S, Steinman MA, Boyd CM, Bayliss EA. Defining key deprescribing measures from electronic health data: a multisite data harmonization project. J Amer Geriatr Soc. 2024; doi: 10.1111/jgs.19280.

This work aims to promote greater standardization of measures in deprescribing studies, making it easier to compare findings and synthesize evidence. In addition, a new, related group has begun meeting to discuss and develop measures for dose reduction and tapering. It includes some members from the original working group and some new members. Thus far, the group has discussed concepts and prior publications related to tapering and has developed proposed definitions, which are now being implemented and tested using data from Kaiser Permanente Washington and Kaiser Permanente Colorado.



# Stakeholder Engagement



Engaging with the users of deprescribing research – including patients and caregivers, clinicians, and health system and policy leaders – is a key principle that underlies the work of the network. Led by **Dr. Nicole Brandt**, **Ms. Carmen Reyes**, and **Dr. Catherine Sarkisian** (who recently transitioned her efforts to investigator development activities), the Stakeholder Engagement Core the Stakeholder Engagement Core supports a number of initiatives that amplify this theme. Stakeholder representatives and core leaders participate in the development and review of pilot and grant planning awards, meet with network awardees, participate in pilot and grant planning awards, engage with Junior Investigator Intensive awardees, contribute to educational programs, and more.

## STAKEHOLDER ENGAGEMENT COUNCIL

The Stakeholder Engagement Council comprises older adults and their caregivers as well as health care professionals and health systems representatives. The Council provides input on network activities, helps select network awardees, and serves as a conduit for disseminating network-sponsored research to communities of interest.



G. CHENG BRAUN



D. BROOKS



S. CHOI



P. D'ANTONIO



E. JIMENEZ



K. MASLOW



P. STANBACK MILLER



D. PRICE



R. QUINTANILLA



S. RODRIGUEZ-SHAPIRO



D. WALES

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I have been excited by the valuable and practical approaches that have been developed to increase attention and understanding among applicants for research funding and among research proposal reviewers to the importance of meaningful engagement of stakeholders in the research process. Finding effective ways of involving stakeholders who represent underrepresented and underserved populations is critical for ensuring that research findings are relevant to the needs and concerns of these populations. I have been impressed by the careful work of USDeN staff and Stakeholder Engagement Core members to balance the requirement for meaningful stakeholder engagement with the necessity for rigorous scientific review in decisions about funding for research.

**Katie Maslow**  
Member of the USDeN Stakeholder Engagement Core

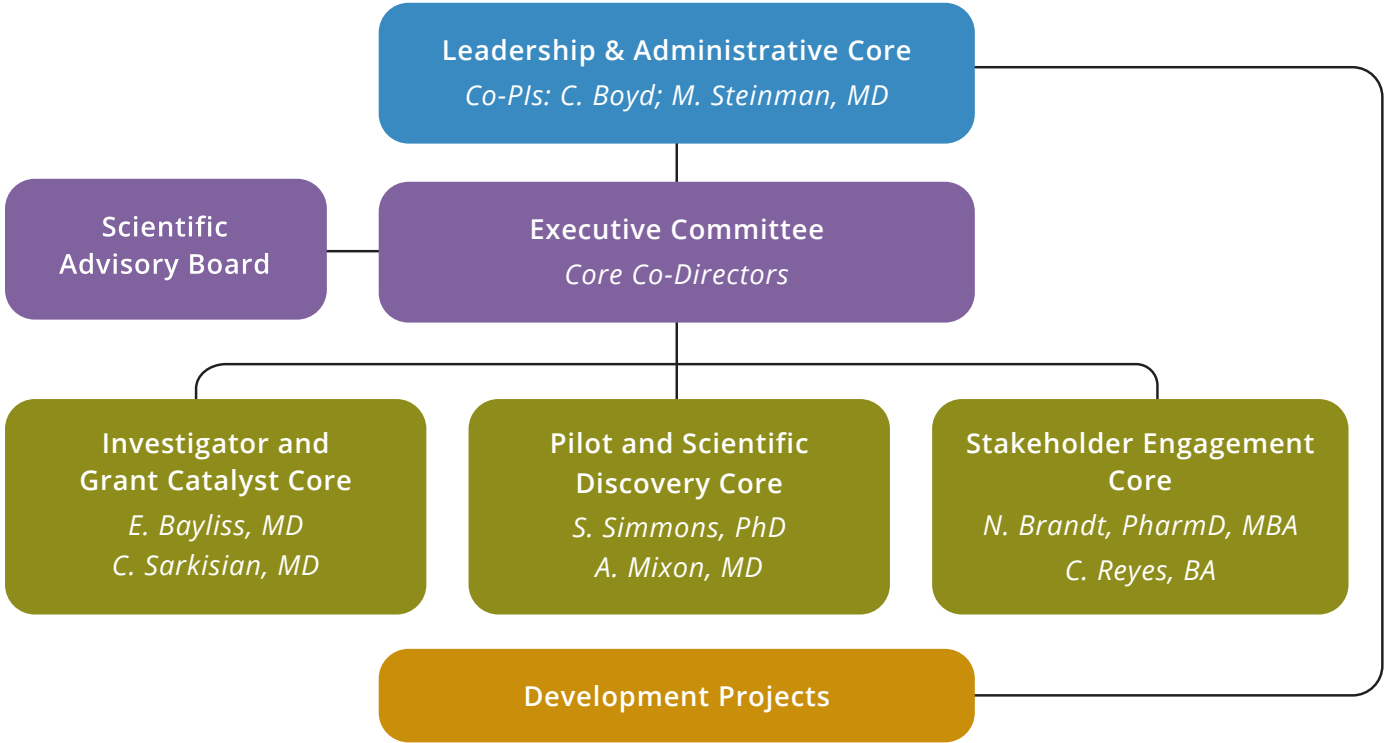
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# New Funding, New Opportunities

In August 2024, we received funding from NIH to continue the work of the network for another 5 years. The next phase of the US Deprescribing Research Network is focusing on extending our past successes and launching new initiatives that will advance the field. Many of our legacy programs continue. Complementing these are new programs, including a Grant Catalyst Scholars Program to support early-stage investigator career development and funding success, a new development project focused on methods for using electronic health data to evaluate medication dose reductions and tapering, and another development project on enhancing recruitment and retention of older adults into clinical trials of deprescribing interventions. Please visit our website for additional information, and more details will be provided in next year’s annual report.

## AIMS

- 1 Grow and support a national, interprofessional community of researchers focused on deprescribing for older adults, with a particular focus on older adults with heightened vulnerabilities such as multimorbidity, dementia, and frailty
- 2 Enhance the research and career development of early-career investigators in deprescribing science, with a particular focus on helping them obtain grants that will advance their research and career growth
- 3 Advance high-value research initiatives including pilot grants and projects that will advance the methods of deprescribing science
- 4 Engage stakeholders and partner organizations to maximize the relevance, sustainability, dissemination, and translational potential of deprescribing research





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