



# ADVANCING INNOVATION FOR AGING



## Welcome to PennAITech

As we entered the new year, we continue to see more and more AI tools and systems become available with the potential to significantly affect all aspects of our lives including health and health care. We are welcoming you to our 11th newsletter of the Penn Artificial Intelligence and Technology Collaboratory for Healthy Aging (PennAITech). PennAITech, funded by the National Institute on Aging, is committed to developing, evaluating, commercializing, and disseminating innovative technology and artificial intelligence systems to support older adults and those with Alzheimer’s Disease and Related Dementias. We have just completed Round 1 for the Year 5 pilot competition; we are soon moving to Round 2 for this year’s process. Meanwhile, we continue to track the milestones and successes of all our awardees.

In January we had the opportunity to co-sponsor the “AI and Nursing Science” summit hosted by the University of Pennsylvania School of Nursing. This event focused on ways AI can play a role in nursing science and explored recommendations for the preparation of the next generation of nursing scientists. Invited guests included national experts from academia, industry, foundations and policy makers who explored the clinical, technical and ethical implications of the use of AI tools in nursing science.

In this newsletter we highlight selected activities and resources within our Collaboratory. We feature PennAITech Innovation Fellows Rachit Kumar and Sang Bin You. PennAITech is committed to mentoring and facilitating research and educational opportunities for our Innovation Fellows. We also learn more about Year 2 pilot projects by Drs. Berridge, Faieta, Patil and Zhang. Furthermore, we feature Dr. Dokyoon Kim who has joined our Networking and Mentoring Core.

Our [PennAITech Video Library](#) consists of educational modules focusing on AD/DRD, aging, AI tools and techniques, ethical implications of research and system design for aging and persons with dementia, and many other domains covered by our PennAITech experts.

Finally, our webinar series for this academic year 2024-2025 continues; all recorded sessions are available on our [YouTube channel](#). As always, we invite you to follow our social media platforms, including our YouTube channel and reach out with any questions or suggestions.



George Demiris

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# Meet the Team

## Principal Investigators



**George Demiris,  
PhD, FACMI**



**Jason Karlawish, MD**



**Jason H. Moore,  
PhD, FACMI**

## Aging Focus Pilot Core



**Kathryn H. Bowles  
PhD, FACMI, FAAN**



**Pamela Z. Cacchione,  
PhD, CRNP, FAAN**



**Lauren Massimo  
PhD, CRNP**



**Dawn Mechanic-  
Hamilton, PhD**

## AD/ADRD Focus Pilot Core

The overarching goal of the Aging Focus Pilot Core is to promote the advancement of science using technology and artificial intelligence to optimize quality of life and healthcare management for older adults living in their homes independently, as well as those receiving skilled home and community-based services. This Core solicits, selects, and manages pilot studies that develop or test AI and technology applications to detect risks, predict needs, address disparities, improve access to care, and support decision making for chronic illness management and safe aging in place.

The overarching goal of the Alzheimer's Disease and Alzheimer's Disease Related Dementias (AD/ADRD) Focus Pilot Core is to promote the advancement of science and engineering for predictive analytics, clinical decision support, or the care of adults with AD/ADRD. This Core solicits, reviews, and supports pilot studies that develop or advance the use of AI and technology for AD/ADRD predictive analytics, clinical decision support, or the care of adults with AD/ADRD.

# Meet the Supporting Core Team

## Networking and Mentoring Core

The overarching goal of the Networking and Mentoring Core is to support activities intended to facilitate networking and mentoring for the awardees of the Aging and AD pilot projects, all of whom are invested in Artificial Intelligence (AI) approaches and technology for aging adults, including those with Alzheimer's disease or related dementias (AD/ADRD). This Core organizes and supports consortium networking activities and communicates with the broader scientific community.



Marylyn D. Ritchie, PhD



Dokyoon Kim, PhD

## Technology Identification and Training Core



Li Shen, PhD, FAIMBE



Ryan Urbanowicz, PhD

The overarching goal of the Technology Identification and Training Core is to use evidence from the literature, stakeholder and expert inputs to identify the technology needs of older Americans, as well as develop training activities for artificial intelligence (AI) and technology for scientists, engineers, clinicians, medical professionals, patients, policy makers, and investors.

## Ethics and Policy Core



Emily Largent, JD, PhD, RN



Anna Wexler, PhD

The overarching goal of the Ethics and Policy Core is to shift the current ethics and policy paradigm by focusing on issues that arise at the intersection of aging and of AI methods and technologies for healthy aging. The Core will work in close collaboration with the other PennAITech Collaboratory Cores to address four key issues: (1) promoting the autonomy of older adults by balancing considerations of usefulness and intrusiveness; (2) protecting older adults in light of vulnerability due to cognitive and functional decline; (3) mitigating bias and addressing health disparities, such as racial disparities and urban-rural disparities; and (4) safeguarding the data privacy of older adults.

## Clinical Translation and Validation Core

The goal of the Clinical Translation and Validation Core is to use the science and practice of geriatrics and gerontology to assess the feasibility and clinical utility of artificial intelligence (AI) methods for clinical decision support and of new technology for monitoring aging adults in their home. This Core provides an expert panel to assess the feasibility and clinical value of new artificial intelligence models for predictive analytics and clinical decision support and of new technologies designed to monitor aging adults and those with AD/ABRD. It provides a testbed for new technologies designed to monitor aging adults and those with AD/ABRD with an emphasis on underserved and rural populations.



Jason Karlawish, MD



Rebecca T. Brown, MD, MPH

## Stakeholder Engagement Core

The overarching goal of the Stakeholder Engagement Core (SEC) is to ensure that technology solutions and AI approaches proposed and developed by the PennAITech Collaboratory are maximally adoptable by and accessible to their end users by soliciting ongoing stakeholder input and involving all key parties throughout all phases of the development and testing processes. The Core maintains a technology consortium (consisting of technology companies, startups, venture capital firms, and angel investors) that provide guidance and collaboration opportunities for pilot projects and a platform for potential dissemination and commercialization of innovative tools.



George Demiris, PhD, FACMI



Lisa M. Walke, MD, MSHA

## Internal Advisory Board (IAB)



John Holmes, PhD, FACE, FACMI

The Internal Advisory Board (IAB) plays an important role in providing perspective and detailed advice and recommendations to the leadership team and the core directors. The IAB is chaired by Dr. John Holmes who is a Professor of Informatics and Epidemiology with significant experience in artificial intelligence and clinical decision support. We have assembled a team of local Penn experts representing three key areas of expertise. The first area, Biomedical Informatics and Artificial Intelligence, includes Drs. John Holmes (Professor of Informatics, AI expert), Ross Koppel (Professor of Sociology, EHR expert), Konrad Kording (Professor of Computer Science and Neuroscience, AI expert), Insup Lee (Professor of Computer Science and Engineering) and Danielle Mowery (Chief Research Information Officer). The second area, Geriatrics and Medicine, includes Drs. Mark Neuman (Anesthesiologist specializing in older adults), Matt Press (Medical Director of Primary Care), and Ramy Sedhom (Palliative Care, Geriatric Oncology, Penn Medicine Princeton Health). The third area, Home Care, includes Danielle Flynn (Director, Penn Medicine Home Health), Nancy Hodgson (Professor of Nursing), Bruce Kinosian (Division of Geriatrics), and Brian Litt (Director, Penn Center for Health, Devices, and Technology).

# TEAM MEMBER SPOTLIGHT:

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## Dokyoon Kim, PhD

Associate Professor of Informatics  
Director, Center for AI-Driven Translational Informatics (CATI)  
Associate Director of Informatics, Immune Health  
Perelman School of Medicine, University of Pennsylvania



Tell us about your research interests.

Describe some of your research projects.

My primary research focuses on the integration of multi-modal data, including omics, environmental, imaging, and phenotype data from Electronic Health Records (EHRs). My work spans both theoretical and applied domains, including:

- Developing data integration methods that combine multi-omics data and biological knowledge
- Predicting clinical outcomes by analyzing interactions between multi-omic features
- Integrating genomics and imaging data to study diverse phenotypes and diseases
- Conducting translational research using EHR-linked biobanks

My long-term goal is to develop and evaluate advanced data integration methods that simultaneously combine genomic, imaging, phenotype, and environmental/lifelog data to advance precision medicine. Leveraging artificial intelligence (AI), I aim to revolutionize how biomedical data is utilized, leading to more accurate diagnoses and effective treatments. My research contributes to the fields of precision medicine and translational informatics, bridging the gap between biological discoveries and clinical applications.

*What is your role within PennAITech?*

I serve as part of the Networking and Mentoring Core, where I foster collaborations between researchers, provide mentorship to pilot awardees and innovation fellows, and contribute expertise in AI-driven biomedical informatics to advance the program's aims.

*What do you see as the role of artificial intelligence and technology in biomedicine and health care in the next few years?*

As technology continues to advance, new biological insights will emerge, requiring integrated analysis methodologies to interpret large-scale, multi-modal datasets. The high dimensionality and heterogeneity of multi-omics data present a major challenge, making integration, analysis, and interpretation increasingly complex. AI and machine learning will play a critical role in bridging this gap, enabling more sophisticated, scalable, and automated approaches to multi-modal data integration. However, translating complex omics data into clinically meaningful insights remains a significant challenge. Advances in computational methods, biological understanding, and AI-driven reasoning will be essential to unlocking the full potential of precision medicine. Only when both integration and interpretation are achieved will we see the next major breakthroughs in healthcare.

*What advice do you have for innovators and entrepreneurs who are embarking on works harnessing the potential of AI or other technologies for aging?*

The current transformation in biomedical data analysis is being driven by large language models (LLMs). A key challenge in aging-related research is translating multi-omics findings into actionable clinical insights, which is often hindered by data heterogeneity and computational complexity. Imagine an LLM trained on comprehensive clinical data from biobanks and hospital records. Such a system could generate clinically relevant insights from multi-omics analyses, facilitating personalized treatment strategies and enhancing clinical decision-making. These AI-driven systems have the potential to redefine problem-solving in biomedicine, revolutionize personalized healthcare delivery, and improve aging-related research. However, challenges such as data accessibility, resource constraints, and model interpretability must be addressed to fully realize AI's potential in aging and healthcare.

# INNOVATION FELLOW SPOTLIGHT:

## Rachit Kumar

MD-PhD student

Graduate Research Assistant - Ritchie Lab

Genomics and Computational Biology Graduate Group

Institute for Biomedical Informatics



Tell us about your research interests.

Describe some of your research projects.

My current research focuses on making use of novel (especially graph and network) representations of biomedical data that incorporate preexisting scientific and clinical knowledge to improve how we diagnose and treat patients. My current disease focus is in Alzheimer's disease, though I also have a personal interest in hearing loss.

*How do you envision the role of AI and technologies in supporting aging?*

I believe that AI (and other technologies, broadly) will provide individuals with the ability to make more informed decisions about how they want to be treated as they age by making better use of their history and other information. I also see AI as providing a helping hand to many as they age in a direct fashion.

*What do you see as some of the greater opportunities and challenges for the future?*

One of the biggest opportunities (and challenges) for these technologies is making them more broadly accessible to patients and caregivers alike. Another challenge is making these technologies more interpretable and understandable - many, especially AI-related or AI-based tech, tend to operate in a black-box fashion that makes understanding how they came to their decision or action difficult.

# INNOVATION FELLOW SPOTLIGHT:

## Sang Bin You, MSN, RN

Innovation Fellow, Penn Artificial Intelligence and Technology  
Collaboratory for Healthy Aging

Associate Fellow, Leonard Davis Institute of Health Economics  
New Courtland Center for Transitions and Health



Tell us about your research interests.

Describe some of your research projects.

My research focuses on improving patient outcomes for sepsis survivors transitioning from hospital to home health care (HHC) by aligning their healthcare needs with the services provided by HHC. In my recent study, I examined the characteristics of older sepsis survivors who were either discharged to home with HHC or home to self-care, and the risk factors for 30-day readmission (including discharge location) using the publicly available Medical Information Mart for Intensive Care (MIMIC)-IV database. We found that those discharged to HHC had higher odds of being readmitted to the hospital when controlling for other risk factors. Based on our preliminary data, I plan to further examine the complex healthcare needs of older sepsis survivors by analyzing the coexistence of hospital utilization risk factors, as these factors often coexist, particularly in older adults with multimorbid conditions. Additionally, the specific interventions provided in the HHC setting, beyond the number of visits and length of stay, have been largely unexplored. Therefore, I aim to examine what is done and provided during HHC visits to standardize the care offered in HHC.

### *How do you envision the role of AI and technologies in supporting aging?*

Aging is a multifaceted process shaped by social, economic, community, physical, and personal factors. AI has the capability to uncover intricate relationships among these factors, aiding in the comprehension of the complex healthcare requirements of older sepsis survivors. Through AI, we can analyze patient subgroups sharing similar combinations of risk factors, thereby enabling more tailored care based on individual patient profiles. Clinical notes contain a wealth of patient information, including conditions, assessments, interventions administered during encounters, and evaluations. Natural Language Processing (NLP), an AI technology enabling machines to understand and analyze human language, streamlines this process, facilitating the analysis of vast quantities of clinical notes generated in healthcare settings. NLP holds significant promise in offering a comprehensive understanding of patient conditions and care provided. By complementing unstructured clinical notes (unstructured data) with structured data, we can enhance our understanding of patient outcomes and pinpoint the gaps between patients' healthcare needs and the services provided. I hope that these AI tools will assist clinicians in making informed decisions regarding discharge location, patient prioritization, and personalized care to address individual healthcare needs effectively, particularly for those with complex needs.

### *What do you see as some of the greater opportunities and challenges for the future?*

AI presents a transformative opportunity to analyze data in various forms, including text, image, voice, video, and more. By harnessing the capabilities of AI, I believe we can empower ourselves with powerful analytical tools that enable us to derive valuable insights from diverse datasets. This comprehensive approach allows us to leverage all available data sources to enhance healthcare delivery and support vulnerable populations effectively. However, ensuring the fairness of AI-generated algorithms is paramount in preventing unintentional bias and widening societal disparities. Biases embedded in data or algorithms can perpetuate existing inequalities and exacerbate social injustices. Therefore, ongoing monitoring and evaluation of AI systems are necessary to identify and rectify any biases that may arise. Collaborative efforts involving experts from diverse backgrounds, including ethicists, data scientists, policymakers, and affected communities, are essential to develop and implement strategies for bias mitigation. Additionally, promoting transparency in the data collection process and algorithmic decision-making can enhance trust in AI systems and facilitate accountability for their outcomes. By prioritizing fairness and equity in AI development and deployment, we can harness the full potential of these technologies to benefit all individuals and communities, regardless of background or circumstance.



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Artificial Intelligence and  
Technology Collaboratory  
for Healthy Aging

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2024-2025 PILOT AWARDEES  
LOOK BOOK



**Xina Quan**

Improved algorithms for  
wearable, passive,  
noninvasive BP monitoring  
for seniors

PyrAmes



**Soheyla Amirian**

AI-powered Web Application  
to Analyze Knee Joint Space  
for Aging Population

Pace University



**Rui Zhang**

Task-Oriented Multimodal  
Conversational AI for  
Assisting Seniors with Daily  
Tasks

Penn State University



**Chun Lim**

Mobile technology as a  
cognitive biomarker of  
Alzheimer's disease

Beth Israel Deaconess  
Medical Center (BIDMC)



**Mohammad H. Mahoor**

Building Deep Digital Twins  
for Prediction of AD/ADR/MCI  
in Older Adults

DreamFace Technologies, LLC



**Ab Brody**

Aliviado Dementia Care  
Machine Learning Algorithm  
Development for Caregiving

New York University



**Nicholas Kalaitzandonakes**

AI/ML Analyses of Mobility  
Changes Among Elderly Using  
Continuous Gait Data

Foresite Healthcare



**Daniel Press**

Developing a Home Cognitive  
Vital Sign to Detect Cognitive  
Changes AD

Beth Israel Deaconess  
Medical Center (BIDMC)



**Trent M. Guess**

Motor function assessment for  
mild cognitive impairment,  
frailty, and fall risk

University of Missouri



**Hualou Liang**

Detecting Cognitive  
Impairment using Large  
Language Models from Speech

Drexel University



**Jondong Tan**

MUSICARE-VR: Music  
Intervention with Virtual  
Reality for Alzheimer's Care

University of Tennessee,  
Knoxville

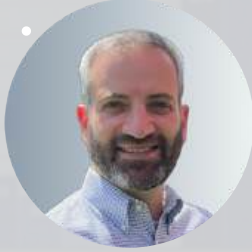




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2023-2024 PILOT AWARDEES  
LOOK BOOK



**Gary Weissman**

Advancing Diagnostic  
Excellence for Older Adults  
through Collective  
Intelligence and Imitation  
Learning  
University of Pennsylvania



**Maria Valero**

GlucoCheck: A Non-invasive &  
AI-assisted Blood Glucose  
Monitoring Device  
for Older Adults  
Kennesaw State University



**Tony C Carnes**

Real-time remote monitoring  
of confirmed medication  
adherence  
etectRx



**Maryam Zolnoori**

A speech-processing algorithm for  
automatic screening of African American  
patients with mild cognitive impairment  
and early dementia in home health  
settings  
Columbia University Medical  
Center and VNS Health



**Jane Chung**

A Device Free WiFi Sensing System to  
Assess Daily Activities and  
Mobility in Low-Income Older Adults  
with and without Cognitive  
Impairment  
Virginia Commonwealth  
University



**Xinyu Zhang**

Non-Intrusive, Fine-Grained In-  
Home Daily Activity  
Transcription for Alzheimer's  
Monitoring  
University of California San  
Diego



**Aidong Zhang**

Fairness and Robust  
Interpretability of Prediction  
Approaches for Aging and  
Alzheimer's Disease  
University of Virginia



**Clara Berridge**

Talking tech with dementia  
care dyads: Improving a self-  
administered tool to support  
informed decision  
University of Washington



**Sandeep Patil**

Prevention of Patch  
Poisoning in Elderly  
Alzheimer's Patients  
Vaaji LLC



**Julie Faieta**

Health App Review Tool:  
Connecting those Affected  
by Alzheimer's to Needed  
Technology Support  
University of Pittsburgh

# PILOT IN THE SPOTLIGHT:

**Talking tech with dementia care dyads: Improving a self-administered tool to support informed decision**



**PI: Clara Berridge, PhD, MSW**  
Associate Professor  
School of Social Work  
University of Washington



**Co-I: Bill Lober, MD, MS**  
Professor  
School of Nursing  
University of Washington

## **TELL US ABOUT YOUR PROJECT AND WHAT YOU HAVE DONE THIS YEAR.**

Let's Talk Tech is the first decision aid to assist caregivers and people living with dementia as they consider using digital health technologies to support care at home. Let's Talk Tech is a self-administered, interactive, dyadic behavioral web intervention that assesses the informed preferences for technology use of a person living with dementia and creates a report that the dyad can view or update at any time. In our first pilot study, participants asked to share their reports with other family members and health care providers. The subsequent PennAITech pilot allowed us to implement sharing of that report using SMART Health Links, which allow for secure, verifiable sharing of the report, using a QR code or URL. The content shared by the SMART Health Link uses the HL7 Fast Health Interoperability Resource (FHIR) standard, which will facilitate the exchange of structured data with electronic health record systems (EHRs).

In addition to dyad user testing and interviews, we shared a sample Let's Talk Tech report with clinicians representing diverse roles at memory clinics. Thirty out of 32 said they would want their patients' technology preferences reports and 25 wanted to receive it in the EHR. We were pleased to find that most dyads wanted to share their reports with members of their care networks, and most providers were highly receptive to receiving them and thought technology preferences should be a part of care planning.

UNIVERSITY *of*  
WASHINGTON

## ***WHAT ARE THE LONG TERM GOALS FOR YOUR RESEARCH?***

Having completed the PennAITech work, we're currently enrolling dyads in a mechanistic clinical trial through the new CONFIDE-ADRD Roybal Center at Mass General Hospital. We aim to understand which dyads share their technology preference reports, with whom, and why. Sharing their technology preferences with their care network may improve their access to technologies and support desired use.

Inattention to digital empowerment is an ongoing problem that must be addressed as AI is developed. One thing Let's Talk Tech does is bridge the gap between ethics research – such as on risks to values older adults care about like privacy, feeling free in their home, dignity – and its translation into practice. People living with dementia often want to be involved in decisions about how technology is used to support their care, and at earlier stages are capable of being involved. Tools to actually enable that have been absent. Our research is highly informative because we're advancing scientific understanding of how to meaningfully engage people living with dementia in these decisions. We think about how we can translate what we've learned to other contexts such as residential care environments, and we're eager to translate Let's Talk Tech into other languages. Our clinician survey findings encourage us to share patient technology preferences through the EHR.

## ***HOW DO YOU ENVISION THE ROLE OF AI AND TECHNOLOGIES IN SUPPORTING AGING?***

A billboard marketing assisted living in Seattle reads, AGING IS LIFE. The contrasting framing of aging as a chronic condition is dangerously reductive but not uncommon in the age tech space. It's unnecessary to reduce aging to a chronic condition to allow AI tools to be developed to enhance health. We don't go a day without hearing how powerful AI is. But as important are the neglected questions of how power operates through and within AI applications and discourse. AI in aging discourse has the power to narrow and order priorities. We must explore shifting the balance from developing and deploying AI tools on or for older adults to creating AI tools by and with older adults, including people living with dementia. Enabling informed, empowered decision making should be the foundation on which we can offer technologies to support people's lives.

# PILOT IN THE SPOTLIGHT:

## Health App Review Tool: Connecting those Affected by Alzheimer's to Needed Technology Support



**Julie Faieta, PhD**, and **Yong Choi, PhD**, are assistant professors at the University of Pittsburgh, each contributing to innovative research in their fields. Dr. Faieta's work focuses on the development of smart technologies designed to support older adults with Alzheimer's disease and related dementias. She is dedicated to creating accessible, user-friendly solutions that enhance daily living, improve cognitive health, and promote independence for individuals with neurodegenerative conditions. Her research integrates technology, healthcare, and aging to improve the quality of life for vulnerable populations.

Dr. Choi's expertise lies in machine learning and artificial intelligence, particularly within healthcare applications. His research aims to leverage advanced data analytics and computational tools to improve medical decision-making, enhance diagnostics, and personalize treatment strategies. Dr. Choi's work is advancing the integration of AI in healthcare systems, aiming for more efficient, predictive, and patient-centered care. Both professors are committed to interdisciplinary collaboration and mentoring the next generation of researchers in their fields.

### ***TELL US ABOUT YOUR PROJECT AND WHAT YOU HAVE DONE THIS YEAR.***

The project aims to develop the Health App Review Tool (HART) to assist individuals with Alzheimer's disease and related dementias (ADRD) and their caregivers in selecting suitable health apps. The project has two main aims:

- 1. User Interface Development:** Collaborate with stakeholders to refine HART's interface, finalize the matching algorithm, and integrate it for seamless use.
- 2. User Experience Evaluation:** Assess HART's usability among end-users, including individuals with ADRD, caregivers, and healthcare professionals, using the Technology Acceptance Model (TAM).

To date we have completed Aim 1 and have attained 60% recruitment with rolling data collection and analysis for Aim 2. The ultimate goal is to enhance the quality of life for ADRD patients and their caregivers by improving app adoption and providing feedback to app developers for better design tailored to the ADRD community.

## WHAT ARE THE LONG TERM GOALS FOR YOUR RESEARCH?

The long-term goals of the HART project are:

1. **Improve App Utilization:** Enhance the adoption and sustained use of health apps among individuals with Alzheimer's disease and related dementias (ADRD) and their caregivers by providing personalized app recommendations.
2. **Increase Quality of Life:** Improve disease management and overall quality of life for those with ADRD and their caregivers through effective use of health technology.
3. **Support App Developers:** Provide valuable feedback and guidance to smart technology developers to improve the design and usability of apps tailored to the ADRD community.
4. **Facilitate Clinical Decision Making:** Assist clinicians, caregivers, and community organizations in making informed decisions about app selection to meet the unique needs of the ADRD population.
5. **Promote Accessibility and Equity:** Ensure that beneficial health technologies are accessible and usable by a diverse range of individuals affected by ADRD, thereby increasing generalizability and equity of app-related services.

## HOW DO YOU ENVISION THE ROLE OF AI AND TECHNOLOGIES IN SUPPORTING AGING?

We envision a transformative role for AI technologies in enabling the Alzheimer's disease and related dementias (ADRD) population to age well. By developing the Health App Review Tool (HART), we aim to harness AI to personalize app recommendations, ensuring that the selected technologies meet the specific needs and abilities of ADRD users and their caregivers. This approach is expected to enhance the adoption and sustained use of health apps, ultimately improving disease management and quality of life. In addition, we anticipate that AI-driven insights will eventually guide developers in creating more effective and accessible health technologies. Such intelligent tools will bridge the gap between available technologies and the unique challenges faced by the aging population, promoting greater independence, wellness, and equity in healthcare access.



The HART team is also supported by University of Pittsburgh PhD students Haomin Hu and Caleb Moon who have been involved in the success of every aspect of project completion. Here's everyone touring in Philly during the a2 National Symposium in 2024!

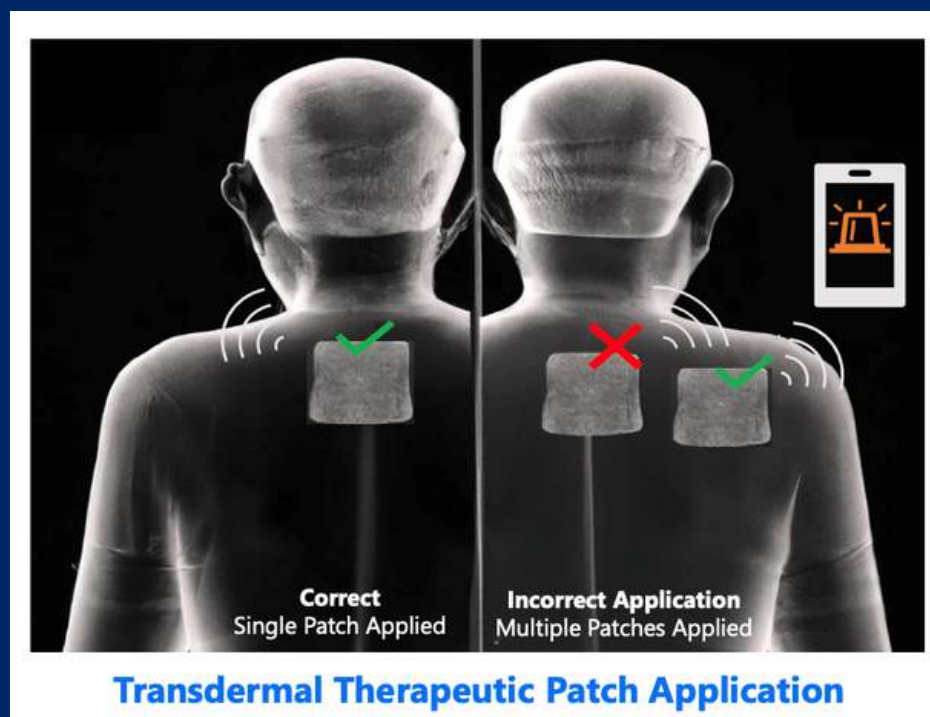
# PILOT IN THE SPOTLIGHT:



## Prevention of Patch Poisoning in Elderly Alzheimer's Patients

### ***TELL US ABOUT YOUR PROJECT AND WHAT YOU HAVE DONE THIS YEAR.***

Our goal is to reduce risk of therapeutic drug poisoning in Alzheimer's patients. Fatal outcomes or emergency hospitalizations result from rivastigmine transdermal patch overdosing caused by placing more than the prescribed number of patches on the body. This would be a preventable problem if discovered early and excess patches are removed within 3 hours of the application. We therefore developed a Prototype Placebo Patch with a reliable signaling system prior to testing it in the healthy volunteers. During the testing phase we assessed the performance of the patch and signaling system in 51 healthy volunteers mimicking activities of daily living in the UPenn home care suite (HCS). Each volunteer had one 0-3 patches placed on his/her body for a duration of 2 hours with a remote monitor receiving the transmitted data and concluding how many patches were on the body in real time. Primary outcome measure of the study is the accuracy of the Remote Monitor in determining correct number of patches on each HV as assessed by comparing remote monitoring data to the data recorded at the site. We are now analyzing the data with results expected by the end of February 2025.





**Sandeep Patil (Founder, PI), William Z. Potter (PI), Tushar Patil (Founder/Strategy) and Ted Zipoy (CDO) are affiliated with Vaaji LLC and Sean Lee Harrison (site investigator) is affiliated with University of Pennsylvania.**

## ***WHAT ARE THE LONG TERM GOALS FOR YOUR RESEARCH?***

Assuming the clinical proof-of-concept is successful our goal is to clarify the regulatory approach in bringing this to the market using a FDA-approved Transdermal Therapeutic Patch (TDS). A clinical plan will be put in place as a first step towards regulatory discussions and alignment. In parallel, a plan is being developed towards manufacturing a drug patch that has the signaling tag built in. We anticipate that a clinical study in the patients may be required and possibly other safety studies prior to the FDA approval.

## ***HOW DO YOU ENVISION THE ROLE OF AI AND TECHNOLOGIES IN SUPPORTING AGING?***

This project is particularly well suited for AI application as there will be a need to monitor, analyze and/or interpret thousands of daily data points in real time. Even in this relatively small study with just 51 volunteers we have almost a million data points to review. We will employ AI to explore the extent to which patterns of temperature or other signals inform beyond the simple question of whether the patch is on the body at any single point in time. This project data will help to develop and test new AI based approaches for predictive analytics, detection accuracy, and decision support. Already AI is being applied to detection of clinically relevant signal or a range of measures (such as protein fragments) in the blood or EEG for various chronic conditions.

# PILOT IN THE SPOTLIGHT:



## Fairness and Robust Interpretability of Prediction Approaches for Aging and Alzheimer's Disease



**Aidong Zhang, PhD**

Professor, Computer Science, Biomedical Engineering, and Data Science  
University of Virginia



**Li Shen, PhD, FAIMBE**

Professor of Informatics in Biostatistics and Epidemiology,  
University of Pennsylvania



**Mary Regina Boland, PhD, FAMIA**

Assistant Professor of Data Science in Mathematics,  
Saint Vincent College

### **TELL US ABOUT YOUR PROJECT AND WHAT YOU HAVE DONE THIS YEAR.**

We have constructed several models (and published them) that utilize Electronic Health Records (EHR) data for predicting Alzheimer's Disease progression while taking into account fairness and biased distributions.

Our work explores the role of Social Determinants of Health (SDOH), along with sex and racial biases pertaining to AD in EHR data and methods to address those. Specifically focusing on survival

1. K Noshin+, MR Boland+\*, B Hou, V Lu, C Manning, L Shen, A Zhang. Understanding the Clinical Modalities Important in NeuroDegenerative Disorders, Alzheimer's Disease, and Risk of Patient Injury Using Machine Learning and Survival Analysis. AMIA Informatics Summit 2025; Mar. in press. (oral presentation). +Equal contribution first author
2. K Noshin+, MR Boland+, B Hou, V Lu, C Manning, L Shen\*, A Zhang. Integrating Social Determinants of Health in a Multi-Modal Deep Clustering Survival Model for Injury-Risk in Alzheimer's and Related Dementia Patients. AAAI Workshop 2025; Feb. in press. (oral presentation). +Equal contribution first author
3. K Noshin+, MR Boland\*+, B Hou, V Lu, C Manning, L Shen, A Zhang. Uncovering Important Diagnostic Features for Alzheimer's, Parkinson's and Other Dementias Using Interpretable Association Mining Methods. Pacific Symposium on Biocomputing; 2025; in press. +Equal contribution first author

### **WHAT ARE THE LONG TERM GOALS FOR YOUR RESEARCH?**

Our goal is to continue working on developing methods that are 'fair' and de-biased that utilize EHR data, which is inherently biased. We have applied for further funding from NSF to continue our research exploring the role of SDOH, disparities on differential biases in AD prediction from EHR data. Long term, we hope to be able to validate our findings in multiple sites across the US and perhaps around the world.

### **HOW DO YOU ENVISION THE ROLE OF AI AND TECHNOLOGIES IN SUPPORTING AGING?**

AI and technologies can be very supportive of aging. However, we need to ensure that AI methods implemented are not biased, and do not exacerbate existing biases. This is a major issue for AI given that AI utilizes existing data (which we know are biased). This is also why our work on de-biasing and fairness methods is important in aging and in AD research.



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PRESENTS

# NATIONAL SYMPOSIUM

Empowering Innovation  
in AI/Tech + Aging

**APRIL 3-4, 2025**  
THE HARVARD CLUB | BOSTON, MA

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The a2 National Symposium is primarily funded by the National Institute on Aging, part of the National Institutes of Health.

KEYNOTE SPEAKERS:



**Pattie Maes, PhD**  
Germeshausen Professor at  
MIT Media Lab



**Jianying Hu, PhD**  
Director of Healthcare and  
Life Sciences Research |  
Global Science Leader, AI  
for Health at IBM

**MORE INFO AT**  
[a2symposium.ai](http://a2symposium.ai)

As technology continues to evolve and shape the future of healthcare, **the a2 Collective invites innovators, academics, and industry leaders to convene at the Harvard Club of Boston on April 3-4, 2025.** Backed by the National Institute on Aging, this one and a half day event is bound to spark dialogue, foster collaboration, and ignite the next wave of transformative ideas in AgeTech, AI, healthy aging, and Alzheimer's disease and related dementias (AD/ADRD).

## WHY ATTEND?

This symposium isn't your standard tech event. With a special focus on AI and AgeTech, we're addressing challenges and celebrating innovations to improve care and health outcomes for our aging population. Engage with awardees from four a2PilotAwards cohorts, executives from the healthcare industry, capital allocators, renowned academic experts, clinical researchers, and a host of tech startups ready to shape the future of healthtech. If you're an investor, this is your prime opportunity to meet game-changing startups in the AI, AgeTech, and AD/ADRD space.

## AGENDA

Please visit ([www.a2symposium.ai/agenda/](http://www.a2symposium.ai/agenda/)) for the up to date meeting agenda.

**[Register now: www.a2symposium.ai/registration/](http://www.a2symposium.ai/registration/)**

## KEYNOTES FROM LEADING INNOVATORS INCLUDE

### **Pattie Maes, PhD - Opportunities for AI and Wearables to Support Healthy Aging**

Pattie Maes is the Germeshausen Professor of Media Arts and Sciences at the MIT Media Lab. She runs the Fluid Interfaces research group, which does research at the intersection of Human Computer Interaction and Artificial Intelligence with a focus on applications in health, wellbeing and learning. Maes is also a faculty member in MIT's center for Neuro-Biological Engineering. She is particularly interested in the topic of cognitive enhancement, or how wearable, immersive and brain-computer interface systems can actively assist people with issues such as memory, attention, learning, decision making, communication, wellbeing, and sleep.

### **Jianying Hu, PhD - Harnessing AI for Advancing Neurodegenerative Disease Therapeutics**

Jianying Hu is an IBM Fellow and Global Science Leader of AI for Healthcare at IBM. She is also Adjunct Professor of Medicine at Icahn School of Medicine at Mount Sinai. Dr. Hu joined IBM in 2003 after working at Bell Labs. She has over 30 years of experience conducting and leading research on machine learning, with recent focus on AI enabled acceleration of scientific discovery in health. She has published over 150 scientific papers and holds more than 50 patents.

## EVENT HIGHLIGHTS

- **Awardee Poster Presentations:** Engage with a2 Pilot Awardees' projects and converse one-on-one with the innovative minds that are advancing AgeTech.
- **Awardee Device Demonstrations:** Go hands-on with cutting-edge technologies and devices from past and present a2 Pilot Awardees!
- **Funders & Dealmakers Reverse Pitches:** Hear directly from top VCs, accelerators, and industry leaders as they unveil the innovations they're eager to back!

**We look forward to seeing you  
in Boston in April 2025!**



**[Register now: www.a2symposium.ai/registration/](http://www.a2symposium.ai/registration/)**

# NEWS FROM THE FIELD

## WHAT'S HAPPENING IN AI?

### **AI to identify signs of heart failure**

Advanced artificial intelligence (AI) algorithms can now be trained to analyze electronic health records for clinical indicators of heart failure with reduced ejection fraction (HFrEF), according to a recent study published in JACC: Heart Failure. This advancement may enable clinicians to identify high-risk patients earlier, allowing them to receive timely care that supports longer, healthier lives. While AI models have been capable of detecting signs of HFrEF in patient records for some time through natural language processing (NLP), this research stands out due to its algorithm's ability to overcome previous challenges.

Read the full story here:

<https://cardiovascularbusiness.com/topics/clinical/heart-failure/more-words-ai-takes-nlp-next-level-identify-signs-heart-failure>

### **AI and radiology**

As artificial intelligence (AI) continues to transform radiology, the regulatory framework governing its use is evolving significantly. A key focus of these changes is ensuring AI systems are free from bias and improving methods for conducting quality assurance testing on algorithms.

Nina Kottler, MD, FSIM, MS, associate chief medical officer for clinical AI at Radiology Partners and an associate fellow at the Stanford Center for Artificial Intelligence in Medicine and Imaging (AIMI), recently addressed these regulatory shifts at the Radiological Society of North America (RSNA) 2024 meeting. In an interview with Health Imaging, she discussed the complexities of AI regulation in the U.S. and how these developments impact radiology practices and hospitals.

Read the full story here:

<https://healthimaging.com/topics/artificial-intelligence/overview-regulatory-landscape-ai-radiology>

### **Modella AI gets FDA approval for PathChat DX**

Modella AI has received breakthrough device designation from the U.S. Food and Drug Administration (FDA) for its generative artificial intelligence (AI) copilot, PathChat DX.

According to Modella AI, PathChat DX builds upon the PathChat model, which was developed by a research team led by Faisal Mahmood, PhD, at Mass General Brigham. Details about PathChat were published in Nature in June 2024.

PathChat was designed to utilize generative AI and multimodal analysis to enhance pathologists' ability to diagnose complex cases with greater accuracy and efficiency, according to Modella AI. The tool integrates pathology foundation models trained on histology images and image-text datasets with a custom-trained multimodal large language model to analyze high-resolution pathology images alongside clinical data.

Full story can be found here:

<https://www.labpulse.com/compliance-regulation/policy-and-regulation/fda-submission/article/15736482/modella-ai-gets-fda-breakthrough-device-designation-for-generative-ai-copilot>

# SELECTED PUBLICATIONS

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## WORK BY OUR TEAM

01.

Lateralization of memory function in temporal lobe epilepsy using scene memory fMRI.

Tackett WS, **Mechanic-Hamilton D**, Das S, Mojena M, Stein JM, Davis KA, Detre JA. *Epilepsia Open*. 2024 Dec;9(6):2487-2494. doi: 10.1002/epi4.13069. Epub 2024 Nov 7. PMID: 39509557

02.

Building a Time-Series Model to Predict Hospitalization Risks in Home Health Care: Insights Into Development, Accuracy, and Fairness.

Topaz M, Davoudi A, Evans L, Sridharan S, Song J, Chae S, Barrón Y, Hobensack M, Scharp D, Cato K, Rossetti SC, Kapela P, Xu Z, Gupta P, Zhang Z, McDonald MV, **Bowles KH**. *J Am Med Dir Assoc*. 2025 Feb;26(2):105417. doi: 10.1016/j.jamda.2024.105417. Epub 2024 Dec 26. PMID: 39689864

03.

Response to the Annual Review: Comprehensive Dementia Care Models: State of the Science and Future Directions.

**Cacchione PZ**. *Res Gerontol Nurs*. 2025 Jan-Feb;18(1):17-19. doi: 10.3928/19404921-20241211-03. Epub 2025 Jan 1. PMID: 39836769

04.

Racial/Ethnic Differences in Neuropsychological Test Performance in Frontotemporal Degeneration.

Matyi MA, Rhodes E, Emrani S, Jin HA, Irwin DJ, McMillan CT, **Massimo L**. *medRxiv [Preprint]*. 2025 Jan 6:2025.01.06.25320069. doi: 10.1101/2025.01.06.25320069. PMID: 39830261

05.

Designing an intervention to improve cognitive evaluations in primary care.

O'Brien KS, Harkins K, Peifer M, Kleid M, Coykendall C, Shea J, **Karlawish J**, Burke RE. *Implement Sci Commun*. 2025 Jan 16;6(1):9. doi: 10.1186/s43058-025-00693-1. PMID: 39819971

06.

ESCARGOT: an AI agent leveraging large language models, dynamic graph of thoughts, and biomedical knowledge graphs for enhanced reasoning.

Matsumoto N, Choi H, Moran J, Hernandez ME, Venkatesan M, Li X, Chang JH, Wang P, **Moore JH**. *Bioinformatics*. 2025 Feb 4;41(2):btaf031. doi: 10.1093/bioinformatics/btaf031. PMID: 39842860

# PUBLICATIONS

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07.

Emotional ecosystems: Understanding the relationship between family interactions and anxiety among cancer caregivers.

Makinde KW, Benson JJ, Pitzer KA, Mitchell M, Oliver DP, **Demiris G**, Washington KT. Palliat Support Care. 2025 Jan 30;23:e54. doi: 10.1017/S147895152400213X. PMID: 39881581

08.

Developing an Intervention to Enhance Aging in Place for Older Veterans Living in Permanent Supportive Housing.

Su K, Maitra MR, Peeples AD, Goodman O, Tsai J, Lee D, Lam K, Lubens P, Zamora K, Shak E, **Brown RT**. Gerontologist. 2025 Jan 29;gnaf018. doi: 10.1093/geront/gnaf018. Online ahead of print. PMID: 39878691

09.

Biologically Enhanced Machine Learning Model to uncover Novel Gene-Drug Targets for Alzheimer's Disease.

Orlenko A, Venkatesan M, **Shen L, Ritchie MD**, Wang ZP, Obafemi-Ajayi T, **Moore JH**. Pac Symp Biocomput. 2025;30:441-456. PMID: 39670388

10.

Pre-Implementation Strategies to Support Adaptation of Thrive: A Care Transitions Model for Economically Disadvantaged Patients with Serious Mental Illness.

Brooks Carthon JM, Tibbitt C, Amenyedior KE, Bettencourt AP, Babe E, **Cacchione PZ**, Brom H. Nurs Rep. 2024 Dec 2;14(4):3803-3818. doi: 10.3390/nursrep14040278. PMID: 39728639

11.

Strength of Genetic Associations with Thyrotropin Values Differs Between Populations with Similarity to African and European Reference Populations.

Wade AN, Guare L, Hayat M, Straub P, Gao Z, Medici M, Teumer A, Davis LK, Ramsay M, **Ritchie MD**, BioBank PM, Cappola AR. Thyroid. 2025 Jan 27. doi: 10.1089/thy.2024.0525. Online ahead of print. PMID: 39869013

12.

Feasibility, validity, and normative data for the remote Uniform Data Set neuropsychological battery at the University of Pennsylvania Alzheimer's Disease Research Center.

Hackett K, Shi Y, Schankel L, Oliveira N, Kelley M, McCoubrey H, Peskin SM, O'Brien K, Xie SX, Wolk D, **Mechanic-Hamilton D**. Alzheimers Dement (Amst). 2024 Dec 26;16(4):e70043. doi: 10.1002/dad2.70043. eCollection 2024 Oct-Dec. PMID: 39726731

13.

Multimodal Fusion-Based Lightweight Model for Enhanced Generalization in Drug-Target Interaction Prediction.

Lee J, **Kim D**, Jun DW, Kim Y. J Chem Inf Model. 2024 Dec 23;64(24):9215-9226. doi: 10.1021/acs.jcim.4c01397. Epub 2024 Dec 3. PMID: 39626073

14.

Applying recommendations for diagnostic disclosure of mild cognitive impairment and dementia: Practical guidance for clinicians.

O'Brien K, **Largent EA, Karlawish J**. Alzheimers Dement. 2025 Jan;21(1):e14200. doi: 10.1002/alz.14200. Epub 2024 Dec 30. PMID: 39740343

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15.

PGxQA: A Resource for Evaluating LLM Performance for Pharmacogenomic QA Tasks. Keat K, Venkatesh R, Huang Y, Kumar R, Tuteja S, Sangkuhl K, Li B, Gong L, Whirl-Carrillo M, Klein TE, **Ritchie MD, Kim D**. Pac Symp Biocomput. 2025;30:229-246. PMID: 39670373

17.

Feasibility and Acceptability of Collecting Passive Smartphone Data for Potential Use in Digital Phenotyping Among Family Caregivers and Patients With Advanced Cancer. Odom JN, Lee K, Currie ER, Allen-Watts K, Harrell ER, Bechthold AC, Engler S, Curry K, Kamal AH, Ritchie CS, **Demiris G**, Wright AA, Bakitas MA, Azuero A. JCO Clin Cancer Inform. 2025 Jan;9:e2400201. doi: 10.1200/CCI-24-00201. Epub 2025 Jan 2. PMID: 39746166

19.

Study protocol: type II hybrid effectiveness-implementation study of routine functional status screening in VA primary care. Nicosia FM, Zamora K, Ashcraft L, Krautner G, Groot M, Kinosian B, Schubert CC, Chhatre S, Moriarty H, Intrator O, Schwartz AW, Orkaby AR, Prigge J, **Brown RT**. Implement Sci Commun. 2025 Jan 31;6(1):15. doi: 10.1186/s43058-025-00698-w. PMID: 39891277

21.

Uncovering Important Diagnostic Features for Alzheimer's, Parkinson's and Other Dementias Using Interpretable Association Mining Methods. Noshin K, Boland MR, Hou B, Lu V, Manning C, **Shen L**, Zhang A. Pac Symp Biocomput. 2025;30:631-646. PMID: 39670401

16.

Is the Relationship Between Cardiovascular Disease and Alzheimer's Disease Genetic? A Scoping Review. Moore A, **Ritchie MD**. Genes (Basel). 2024 Nov 25;15(12):1509. doi: 10.3390/genes15121509. PMID: 39766777

18.

The Complete Inpatient Record Using Comprehensive Electronic Data (CIRCE) project: A team-based approach to clinically validated, research-ready electronic health record data. Schneider ALC, Ginestra JC, Kerlin MP, Shashaty MGS, Miano TA, Herman DS, Mitchell OJL, Bennett R, Moffett AT, Chandler J, Kalanuria A, Faraji Z, Bishop NS, Schmid B, Chen AT, **Bowles KH**, Joseph T, Kohn R, Kelz RR, Anesi GL, Kumar M, Friedman AB, Vail E, Meyer NJ, Himes BE, Weissman GE. Learn Health Syst. 2024 Jun 18;9(1):e10439. doi: 10.1002/lrh2.10439. eCollection 2025 Jan. PMID: 39822919

20.

The Alzheimer's Association clinical practice guideline for the Diagnostic Evaluation, Testing, Counseling, and Disclosure of Suspected Alzheimer's Disease and Related Disorders (DETeCD-ADRD): Executive summary of recommendations for specialty care. Dickerson BC, Atri A, Clevenger C, **Karlawish J**, Knopman D, Lin PJ, Norman M, Onyike C, Sano M, Scanland S, Carrillo M. Alzheimers Dement. 2025 Jan;21(1):e14337. doi: 10.1002/alz.14337. Epub 2024 Dec 23. PMID: 39713957

22.

Paving the way for Alzheimer's disease blood-based biomarkers in primary care. Erickson CM, **Largent EA**, O'Brien KS. Alzheimers Dement. 2025 Jan;21(1):e14203. doi: 10.1002/alz.14203. Epub 2024 Dec 30. PMID: 39740121

# AI and Nursing Science

A WORKSHOP



On January 29 and 30, 2025 Penn Nursing hosted the **"AI and Nursing Science" workshop** to explore the integration of Artificial Intelligence (AI) into nursing science. The event was sponsored by PennAITech, the Rita and Alex Hillman Foundation and a gift by Dr. Ann O'Sullivan. Penn Nursing Dean Antonia Villarruel emphasized the importance of maintaining patient autonomy and human connection while advancing AI in healthcare. The workshop brought together nurse scientists, AI experts, ethicists, and policymakers to examine AI's impact on nursing, addressing key concerns such as its integration into nursing research, ethical considerations, transparency, accountability, and how to involve patients in AI development. The workshop highlighted AI's potential to enhance research, personalize care, and improve health outcomes. George Demiris, Chair of the workshop, discussed AI's ability to unlock new possibilities in patient care and empower nurses with advanced tools. Keynote speakers included national experts from academia, health systems and industry. To learn more, visit: <https://www.ainursingscience.org/>



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# WEBINAR SERIES 2024-2025



The purpose of this webinar series is to foster a dialogue exploring clinical, ethical and technological opportunities and challenges associated with the use of technology to promote aging, and to introduce different perspectives at the intersection of informatics and gerontology.



**September 12, 2024**

**Indu Navar**

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**October 10, 2024**

**Jessica Ancker**

Vanderbilt University  
Medical Center



**November 14, 2024**

**Priya Nambisan**

University of Wisconsin –  
Milwaukee



**December 12, 2024**

**Julia Adler-Milstein**

University of California –  
San Francisco



**January 9, 2025**

**Marjolein den Ouden**

Saxion, University of Applied  
Sciences



**February 13, 2025**

**Anita Ho**

University of California –  
San Francisco



**March 13, 2025**

**Martin Michalowski**

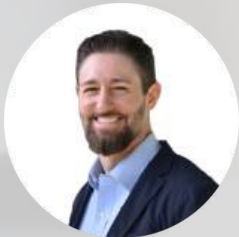
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**April 10, 2025**

**Philip Payne**

Washington University



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# Our webinar series continues on March 13:



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## Leveraging CDSSes to Address Multimorbidity in Aging Populations: Advancing AI for Better Care Management

**Martin Michalowski, PhD,  
FAMIA, FIAHSI**

Associate Professor, School of Nursing  
University of Minnesota



**THURSDAY, MARCH 13  
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## Artificial Intelligence and the Learning Health System: Digitally Transforming Research, Learning, and Practice

**Philip R.O. Payne, PhD, FACMI,  
FAMIA, FAIMBE, FIAHSI**

Professor, School of Medicine  
Washington University in St. Louis



**THURSDAY, APRIL 10  
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 Artificial Intelligence and Technology Collaboratory for Healthy Aging



**Benefits of telehealth for older  
adults during the COVID  
pandemic: Findings from a  
Medicare study and next steps**

**Jessica Ancker, PhD, MPH, FACMI**  
Professor and Vice Chair for Educational Affairs  
Department of Biomedical Informatics  
Vanderbilt University Medical Center



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**Designing a Digital platform for  
the aging population with  
Multiple Chronic Conditions (MCC)**

**Priya Nambisan, PhD**  
Associate Professor  
Biostatistics and Health Informatics  
Joseph J Zilber College of Public Health  
University of Wisconsin - Milwaukee



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**Assessing the Use and Impact of  
Telemedicine in the Primary Care  
Setting for People with Dementia**

**Julia Adler-Milstein, PhD**  
Professor of Medicine and  
Chief of the Division of Clinical Informatics &  
Digital Transformation (DoC-IT)  
University of California - San Francisco



 funded by the National Institute on Aging Grant Nr. P30AG073105


 Artificial Intelligence and Technology Collaboratory for Healthy Aging



**From health care professionals vs.  
technology to health care  
professionals with technology**

**Marjolein den Ouden, PhD**  
Professor, Technology, Health & Care  
Saxion University of Applied Sciences



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**Save the Date**



# Collaborative Design + Co-creation for Health Equity

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We are thrilled to announce the launch of the CITI training: Essentials of Responsible AI program, which is now available via UPenn and sponsored by PennAITech. The training is designed to help individuals explore the core aspects of establishing and operationalizing a responsible approach to AI development and use.

This course is relevant for all AITC awardees and others who want to learn more about Responsible AI, Responsible AI Principles, and the AI regulatory landscape.

## Have you completed training?



### [Essentials of Responsible AI | CITI Program](#)

Essentials of Responsible AI Covers the principles, governance approaches, practices, and tools for responsible artificial intelligence (AI) development and use. View this course at CITI Program.

[about.citiprogram.org](https://about.citiprogram.org)

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Technology solutions may prove to be useful in helping people age independently and stay safe at the residence of their choice, manage their health care needs and communicate with family members and health care providers. The *Penn Artificial Intelligence and Technology Collaboratory for Healthy Aging* (**PennAITech**) is a program that fosters innovation to support aging. **We are looking for family caregivers, namely, adults who are taking care of a loved one, relative or friend who is over the age of 65 years, to participate in our stakeholder engagement group and give us feedback about many different ideas and projects.** No previous experience with technology is necessary. We will provide remuneration at \$50 per hour, and anticipate participation for up to 10 hours per year based on interest and availability.



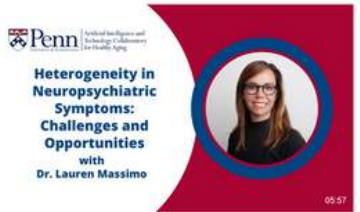














For more information, please contact:

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We are excited to feature our PennAITech Video Library consisting of educational videos covering a broad range of topics from an introduction to Alzheimer's Disease and Related Dementias to Basics of Artificial Intelligence, Machine Learning and Natural Language Processing. The library addresses clinical, technical and ethical implications of designing and deploying AI and other technologies for aging and persons with dementia and their families. The topics include:

PennAITech Video Library

 <p><b>Introduction to PennAITech</b> with Dr. George Demiris</p> <p>04:53</p> <p>Introduction to PennAITech</p>	 <p><b>AD / ADRD: Definitions</b> with Dr. Jason Karlawish</p> <p>04:31</p> <p>AD/ ADRD: Definitions</p>	 <p><b>Heterogeneity in Neuropsychiatric Symptoms: Challenges and Opportunities</b> with Dr. Lauren Massimo</p> <p>05:57</p> <p>Heterogeneity in Neuropsychiatric Symptoms: Challenges and Opportunities</p>
 <p><b>Understanding Functional Status Among Older Adults</b> with Dr. Rebecca Brown</p> <p>05:24</p> <p>Understanding Functional Status Among Older Adults</p>	 <p><b>Generative AI and Aging</b> with Dr. George Demiris</p> <p>05:10</p> <p>Generative AI and Aging</p>	 <p><b>AI and Machine Learning for ADRD</b> with Dr. Li Shen</p> <p>07:42</p> <p>AI and Machine Learning for ADRD</p>
 <p><b>Automated Machine Learning and Best Practices in Data Science</b> with Dr. Ryan Urbanowicz</p> <p>05:47</p> <p>Automated Machine Learning and Best Practices in Data Science</p>	 <p><b>Interprofessional Robotics Research</b> with Dr. Pamela Z. Cacchione</p> <p>13:45</p> <p>Interprofessional Robotics Research</p>	 <p><b>Ethical Considerations in Human Subjects Research</b> with Dr. Emily Largent</p> <p>06:39</p> <p>Ethical Considerations in Human Subjects Research</p>
 <p><b>Ethical Considerations for Wearable Devices and AI Applications</b> with Dr. Anna Wexler</p> <p>04:30</p> <p>Ethical Considerations for Wearable Devices and AI applications</p>	 <p><b>Engaging Older Adults and Geriatric Specialists in the Design of New Technologies</b> with Dr. Lisa Walke</p> <p>03:05</p> <p>Engaging older adults and geriatric specialists in the design of new technologies</p>	 <p><b>Translating AI to the Bedside</b> with Dr. John Holmes</p> <p>07:03</p> <p>Translating AI to the bedside</p>
 <p><b>Big Data and ADRD</b> with Dr. Marylyn Ritchie</p> <p>06:18</p> <p>Big Data and ADRD</p>	 <p><b>Digital Technology Use in Cognitive Assessment: Is it feasible and does it add value?</b> with Dr. Dawn Mechanic-Hamilton</p> <p>05:57</p> <p>Digital Technology Use in Cognitive Assessment: Is it feasible and does it add value?</p>	 <p><b>Passive Sensing and Smart Homes for Aging</b> with Dr. George Demiris</p> <p>10:03</p> <p>Passive Sensing and Smart Homes for Aging</p>
 <p><b>Treating Sepsis</b> with Dr. Kathy Bowles</p> <p>10:17</p> <p>Treating Sepsis</p>	<p><a href="#">Click Here for Full Playlist</a></p> 	

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