



**Penn**  
UNIVERSITY OF PENNSYLVANIA

Artificial Intelligence and  
Technology Collaboratory  
for Healthy Aging

Newsletter - May 2025 - Issue 12



## Welcome to PennAITech

We are welcoming you to our 12th 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 are well underway in identifying our Year 5 awardees; we completed Rounds 1 and 2 for the Year 5 pilot competition and are at the final stages of preparing NIA packets for this year's cohort. It has been very exciting to track the milestones and successes of all our awardees over the years.

In March, members of our team and our Year 3 awardees attended the third a2 Collective annual national symposium in Boston, organized by the MassAITC. It was a great opportunity to network with awardees, and representatives from industry, academia and health systems. Seeing all the different innovative approaches that can make a real impact on older adults' lives gives us hope and excitement for all the possibilities that technology for aging can introduce.

In this newsletter we highlight selected activities and resources within our Collaboratory. We feature PennAITech Innovation Fellows Elaine Sang and Bojian Hou. PennAITech is committed to mentoring and facilitating research and educational opportunities for our Innovation Fellows. We also learn more about Year 3 pilot projects by PyrAmes, Penn State and University of Missouri.

The number of users for our [PennAITech Video Library](#) continues to grow. This video library consists of educational modules focusing on AD/RD, 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 with one more session remaining for this academic year; 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

## Table of Contents

Welcome

Meet our Team

Innovation Fellow  
Spotlights

Yr4 Pilots

Yr3 Pilots

Pilot Spotlights

Recap of 2025 a2  
National Symposium

News from the Field

Publications

Events/Webinars

Connect with Us

# 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.

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.

## Clinical Translation and Validation Core



Jason Karlawish, MD



Rebecca T. Brown, MD, MPH

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.

## Stakeholder Engagement Core



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 Kinoshian (Division of Geriatrics), and Brian Litt (Director, Penn Center for Health, Devices, and Technology).



# INNOVATION FELLOW SPOTLIGHT:

## Elaine Sang

PhD student, School of Nursing  
and LDI Associate Fellow



Tell us about your research interests.  
Describe some of your research projects.

My research interests is on chronic illness, health information technology, patient education and self-care, and AI. I have recently completed a certificate in biomedical informatics at Penn.

I am currently a research assistant on I-TRANSFER (5R01NR016014, PI Bowles), which measures the implementation and effectiveness of an evidence-bases sepsis survivor transitions protocol within five healthcare systems and their affiliated home health agencies. My dissertation is focused on sepsis patient education in both hospitals and home health care.

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

I envision that AI and technologies may streamline healthcare and make it more accessible for the aging population. For instance, telemedicine may facilitate remote consultations and reduce the need for in-person visits. Remote monitoring can detect health deterioration, falls, vital signs and alert patients, caregivers, and healthcare providers regarding emergencies.

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

Greater opportunities for health information technology include improving healthcare delivery, providing caregiver and patient support, and improving cognitive support. Challenges may include navigating the ethics and regulations surrounding AI and health information technology.

# INNOVATION FELLOW SPOTLIGHT:

## Bojian Hou

Postdoctoral Researcher

Department of Biostatistics, Epidemiology and  
Informatics at the University of Pennsylvania



Tell us about your research interests.

Describe some of your research projects.

My research interests mainly focus on trustworthy AI, optimization for AI and AI for science. Specifically, they include: Fairness Learning: developing fair and unbiased machine learning algorithms. Interpretability: studying the interpretability of the black-box machine learning models. Feature Evolvable Learning: studying learning scenarios where data features evolve. Semi-Supervised Learning: learning models from both labeled and unlabeled data. Online Learning: learning models continuously from online streaming data. Natural Language Processing: developing and applying large language models. Biomedical Data Mining: developing machine learning methods to analyze biomedical data.

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

AI is a good tool for prediction and generation. In aging area, it is important to predict whether a person has aging issues such as Alzheimer's disease or other cognitive barriers. With the help of AI, we can accurately predict such situation so that early treatment can be conducted to prevent severe consequence.

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

In the future, I think we can not only utilize the prediction ability of AI but also the generation ability such as large language models (LLM) to help clinical support. With LLM, clinicians can better understand or diagnosis the disease or even get some suggestions for further treatment. The challenges are the trustworthy issues such as robustness, fairness, privacy and interpretability issues. We need to build more trustworthy AI tools.





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## INTRODUCING OUR 2025-2026 YR4 PILOT AWARDEES



### **Min Ji Kwak**

Detection of Adverse Drug  
Event Using NLP Among Older  
Adults with Heart Failure

University of Texas Health  
Science Center at Houston



### **Katherine Kim**

A Novel Digital Twin for  
Chronic Care Coordination  
and Healthy Aging

Health Tequity LLC



### **Nili Solomonov**

Scalable subtyping for  
personalized assessment of  
late-life social disconnection

Weill Cornell Medicine



### **Nancy Hodgson**

Using AI to predict depression  
& burden AD/ADRD  
caregiving conversations

University of Pennsylvania



### **Bin Huang**

AI-Driven Chatbot to Navigate  
Cognitive Care Plan for  
Persons with AD/ADRD

BrainCheck



### **Kyra O'Brien**

WATCH (Warning Assessment  
and Alerting Tool for  
Cognitive Health)

University of Pennsylvania



### **Emily Moin**

Determinants of access to  
and outcomes following  
specialized palliative care for  
patients with ADRD

University of Pennsylvania



### **Rory Boyle**

Understanding aging and  
ADRD disparities using a  
representative epigenetic clock

University of Pennsylvania



### **Vijaya Kolachalama**

AI-based tool for mixed  
dementias

Boston University



### **Mehmet Kurt**

An explainable deep learning  
framework for brain age  
prediction in AD

University of Washington



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CLICK HERE TO VIEW OUR  
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



**Jindong Tan**

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

University of Tennessee,  
Knoxville



# PILOT IN THE SPOTLIGHT:

PYRAMES

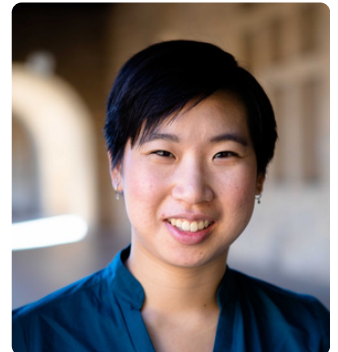
Improved algorithms for wearable, passive, noninvasive BP monitoring for older adults



**PI: Xina Quan, PhD**  
CEO  
PyrAmes Inc.



**David Krucik, DVM**  
Clinical Scientist  
PyrAmes Inc.



**Celine Liong, PhD**  
Clinical Scientist  
PyrAmes Inc.

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

PyrAmes is developing a continuous, non-invasive blood pressure monitor for ambulatory adults. We are focused on building an “always on,” blood pressure technology for use across multiple applications utilizing capacitive sensing and machine learning models.

This year, in an effort to optimize our model for older, ambulatory adults, we have initiated data collection at Stanford University Medical Center. The individuals enrolled will provide us with in-clinic data for both training and validation of our model using data from our devices paired with an arterial catheter ground truth. By conducting this work at Stanford we hope to improve our current model to meet our own internal quality requirements, higher than FDA guidelines, and move to a non-anchored model so that no initial reference BP values is required for any given individual.



Sample Band



Boppli on Infant

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

We aim to build on the success of our first product, the Boppli®, an FDA cleared wearable monitor to continuously and non-invasively monitor blood pressure of critically-ill infants to bring this technology to the aging adult market. In this project we aim to utilize our machine learning and sensor platform to address the needs of older adults to optimize treatment of hypertension found in 75% of Americans aged 60+. Hypertension increases the risk of heart attack or stroke and total risk of dying doubles for every 20mmHg increase of average BP. Over-medicating can lead to falls related to hypotension. By having an “always on,” blood pressure monitor, we are able to better define an individuals broad daily trends of blood pressure peaks and valleys to provide their care team with key insight into whether they are being over or under medicated.

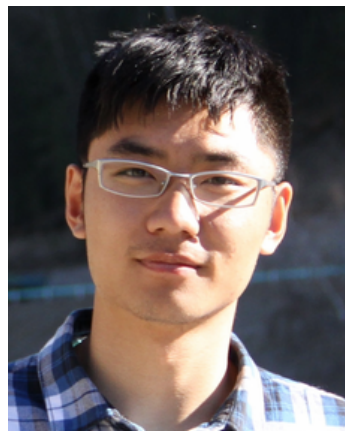
### ***HOW DO YOU ENVISION THE ROLE OF AI AND TECHNOLOGIES IN SUPPORTING AGING?***

While there are many different potential impacts of AI on healthcare generally, and aging care particularly, we are focused on integrating the power of machine learning to analyse data for real world diagnostic applications. Our approach is to integrate machine learning tools into advances in hardware and wearables so that patients are more easily able to obtain highly accurate health insights. By making data easier to both obtain, and analyze, we believe AI can improve diagnostic tools to the point that they become more readily available to patients that otherwise may not be receiving sufficient care due to their mobility, or cognitive impairments associated with aging.



# PILOT IN THE SPOTLIGHT:

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



**PI: Rui Zhang, PhD**  
Assistant Professor  
Computer Science and  
Engineering  
Penn State University



**Marie Boltz PhD,  
GNP-BC, FGSA, FAAN**  
Professor  
Ross and Carol Nese  
College of Nursing  
Penn State University

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

With a global population of over 1 billion people aged 60 and above, there is a rapidly increasing demand for innovative age tech solutions to improve the life quality of older adults. In this project, we aim to design, develop, and deploy a task-oriented multimodal conversational assistant to help older adults with their daily tasks. Our system facilitates daily tasks spanning diverse scenarios such as helping with online grocery shopping, recommending cooking recipes, home maintenance and improvement, and managing smart home devices. The expected outcome is an AI-powered commercialized conversational assistant for older adult care by leveraging emerging technologies in Generative AI, NLP, and LLMs, which greatly promotes the life quality of older adults by improving their well-being, efficiency, safety, and independence.

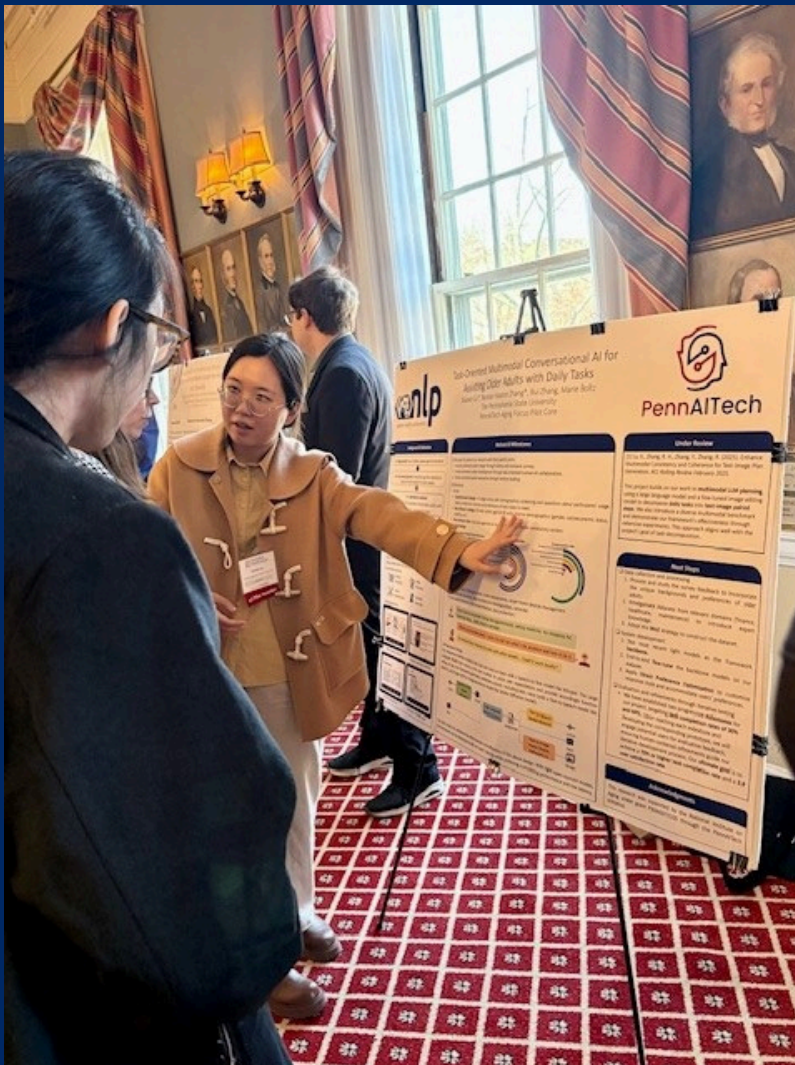
We have conducted a two-stage survey consisting of a demographic screening followed by questions about participants' usage habits of electronic devices and their preferences for daily tasks. Our key findings highlight the most commonly mentioned challenging tasks—home maintenance and smart home device management. The most expected functions include step-by-step task decomposition and reminders, while the most needed features are an interactive interface and robust data protection.

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

Our long-term goal is to develop an innovative technology solution that is widely adopted to promote healthy aging and enhance the daily living experience for a diverse spectrum of older Americans. This includes individuals who live independently in their homes, those receiving clinical care or skilled home and community-based services, and populations that are rural, underserved, or living with disabilities. We aim to address the unique challenges and needs faced by these groups through accessible, inclusive, and adaptive technologies. From an academic standpoint, our research seeks to advance the scientific understanding of human-centered design principles and best practices for developing and deploying conversational AI in the context of older adult care. In particular, we are interested in exploring how human-AI communication and collaboration can be optimized in the era of Generative AI and Large Language Models. Through this work, we hope to contribute to both societal impact and the broader field of human-computer interaction.

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

AI and emerging technologies hold great promise in supporting aging populations by promoting independence, safety, and well-being. Smart home systems and wearable devices can assist with daily living by monitoring health metrics, detecting falls, and providing real-time alerts to caregivers or family members. AI-powered virtual assistants can help older adults manage medications, appointments, and routines through personalized reminders and conversational support. In healthcare, predictive analytics can aid in early diagnosis and proactive interventions, reducing hospitalizations and improving outcomes. Additionally, technology can help reduce social isolation through virtual companionship and communication tools tailored to older adults. However, for these solutions to be truly effective, they must be designed with accessibility, simplicity, and privacy in mind. Engaging older adults in the design process and ensuring transparency in data usage are essential steps toward building trust and adoption. Ultimately, AI can serve as a powerful ally in aging with dignity and autonomy.




Haoran Zhang and Xiaoxin Lu, PhD Students, Computer Science and Engineering, Penn State University present at the a2 National Symposium in Boston, MA.




PennState


**Prototype Demo:**




Cooking  
"Pasta recipe?"



Home Improvement  
"Build a bird feeder?"




Bookkeeping  
"Record a shopping receipt?"



Scheduling  
"Record a shopping receipt?"


Menu: diverse scenarios      Function: task decomposition



Bookkeeping

Date	Description	Ref	Expense	Bank
11-Apr	Supermarket	1	25.00	1000
12-Apr	Gas and oil	2	15.00	1000
13-Apr	Car Wash	3	10.00	1000
14-Apr	Car Wash	4	10.00	1000
15-Apr	Car Wash	5	10.00	1000
16-Apr	Car Wash	6	10.00	1000
17-Apr	Car Wash	7	10.00	1000
18-Apr	Car Wash	8	10.00	1000
19-Apr	Car Wash	9	10.00	1000
20-Apr	Car Wash	10	10.00	1000

"Alexa, record a receipt of \$15 on folders and pens."



Scheduling

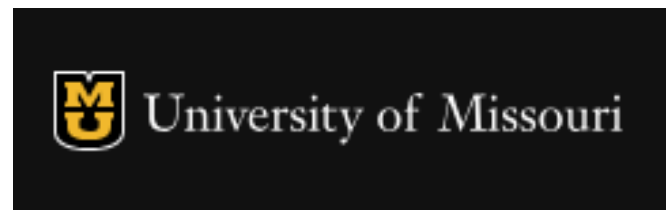
"Alexa, I'll have a HOA meeting in 2 days at 3pm."

Function: bookkeeping      Function: reminder setup

Prototype Demo



# PILOT IN THE SPOTLIGHT:



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

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

Our goal is to use measurements from an inexpensive and portable cognitive-motor function assessment platform and artificial intelligence (AI) to identify mild cognitive impairment (MCI), frailty, and fall risk in older adults. We have previously developed a measurement platform (Mizzou Point-of-care Assessment System or MPASS) that assesses motor function using a force plate, depth camera, and interface board. A phenotypic marker shared by MCI, falls, and frailty is a decline in motor function, especially under conditions of dual tasking (combining motor tasks with cognitive tasks). Preliminary work from our team has demonstrated the ability of the MPASS to distinguish individuals with MCI from cognitively unimpaired older adults. For this a2 pilot study, we will expand on previous work and collect data (motor function, cognitive scores, frailty, fall history, and demographics) on 30 older adults with MCI and 50 healthy older adults. We will then use AI to classify individuals based on motor function measures and demographics. To date, data collection is 90% complete and we have begun development of AI prediction algorithms.



Trent Guess demonstrating the MPASS on day 1 and poster presentation on day 2 at the a2 National Symposium in Boston, MA.





**PI: Trent M. Guess, PhD**  
Associate Professor  
University of Missouri



**Andrew Kiselica, PhD,  
ABPP-CN**  
Associate Professor  
University of Georgia



**Praveen Rao, PhD**  
Associate Professor  
University of Missouri



**Jamie Hall, PT, DPT, PhD**  
Associate Teaching  
Professor  
University of Missouri

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

Our a2 pilot goal is to integrate the MPASS with AI approaches to produce a clinically effective tool that quickly, affordably, and accurately assesses risk for falling, MCI, and frailty, in real-world clinical and community settings. Next steps include placing the MPASS in assisted and independent living facilities for longitudinal health monitoring. Our long-term goal is to commercialize the MPASS platform.

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

MCI, falls, and frailty is prevalent in older adults. MCI is the first clinical diagnosis in the Alzheimer's disease continuum and early intervention is essential for treatment. Currently, only 8% of older Americans expected to have MCI receive a clinical diagnosis. Motor function changes associated with MCI can be subtle. Approaches that use multiple aspects of motor function (e.g. static balance and gait) and that combine cognitive and motor tasks (e.g. walking while solving math problems) provide more sensitive data for detecting motor function changes associate with cognitive decline. AI can learn intricate relationships on large, diverse data sets generated during motor function assessment, enabling accurate and instantaneous diagnosis of MCI, frailty, and fall risk. Highly deployable sensor technologies combined with AI will empower precision medicine in aging by enabling low-cost, next-generation diagnostics.



On April 3–4, 2025, the a2 Collective hosted its third annual a2 National Symposium at the Harvard Club in Boston, convening nearly 200 in-person and over 50 virtual participants. The event brought together researchers, innovators, clinicians, and funders to explore the intersection of artificial intelligence (AI), emerging technologies, and healthy aging, with a focus on supporting older adults and caregivers.



Members of The Penn AI and Tech Collaboratory for Healthy Aging team at this year's a2 Collective | a2PilotAwards.ai Annual Symposium "Empowering Innovation in AI/ Tech + Aging" hosted by MassAITC in Boston. The first day was filled with great presentations and productive discussions!

Day two offered opportunities for the team to engage with awardees during poster sessions and informal chats.





Click photo below to link to online posters.



Throughout the 2 day symposium our Year 3 Pilot Awardees had opportunities to demonstrate their products, engage in speed mentoring with funders, and present to participants during poster sessions.

They also had opportunities to connect with PennAITech team members for 1:1 mentorship.

In addition to Year 3 awardees, the team had the opportunity to connect with past awardees and current applicants in attendance. We look forward to more connections at the 2026 symposium.



The event underscored the growing role of AI and technology in addressing the challenges of aging, emphasizing the importance of collaboration between academia, industry, and healthcare to drive meaningful advancements in this field.

Thank you again for joining us for the 3rd annual a2 National Symposium in Boston, MA and virtually across the world.

Please checkout the a2Collective blog for more details and highlights about the event:

<https://www.a2collective.ai/blog-posts/ai-for-aging-innovation-shaping-the-future-of-diagnostics-support-and-care>

A poster for the 4th Annual a2 National Symposium. The poster features a stylized head made of a network of lines and dots. The text on the poster includes: "a2 COLLECTIVE PRESENTS", "FOURTH ANNUAL", "a2 NATIONAL SYMPOSIUM", "Empowering Innovation in AI/Tech + Aging", "MARCH 19-20, 2026", "WASHINGTON, D.C.", "HOSTED BY: a2 COLLECTIVE COORDINATING CENTER", "CO-HOSTED BY: JOHNS HOPKINS AI &amp; TECHNOLOGY COLLABORATORY for AGING RESEARCH, PennAITech, MassAITC", a QR code, and "SAVE THE DATE a2collective.ai/symposium".



# NEWS FROM THE FIELD

## WHAT'S HAPPENING IN AI?

### AI-Powered Sports and Health Analytics at the University of Pittsburgh

The University of Pittsburgh, in collaboration with Amazon Web Services, has launched the Health Sciences and Sports Analytics Cloud Innovation Center. This pioneering facility integrates AI into sports science to enhance athlete performance and health monitoring. By leveraging real-time performance analysis and predictive health monitoring, the center aims to prevent injuries and improve gameplay strategies.

Additionally, Pitt has partnered with Leidos in a \$10 million initiative to utilize AI for early detection of cancer and heart disease, focusing on underserved communities.

To learn more, click here:

<https://www.axios.com/local/pittsburgh/2025/04/18/pitt-leidos-use-ai-to-fight-cancer-and-health-disparities>

### NHS Trials AI-Based Blood Test for Early Cancer Detection

The UK's National Health Service is set to trial miONCO-Dx, an AI-driven blood test developed by the University of Southampton and startup Xgenera. This test analyzes microRNA in blood samples to detect 12 common cancers, including bowel, lung, breast, and pancreatic cancers, with 99% accuracy in initial studies involving 20,000 patients. The trial will involve 8,000 NHS patients and aims to facilitate earlier cancer detection, reducing reliance on invasive procedures and improving survival rates.

More information can be found here:

<https://www.thetimes.com/uk/healthcare/article/blood-test-for-bowel-cancer-to-be-trialled-on-nhs-8kz5h9rx5>

### Cera Care's AI Enhances Home Healthcare in the UK

Cera Care, the UK's largest HealthTech company, employs AI to revolutionize home healthcare services. Their AI-backed tools predict and prevent hospitalizations among older and vulnerable individuals, reportedly reducing hospital admissions by up to 70% and saving the NHS approximately £1 million daily. With nearly 10,000 carers and nurses, Cera delivers around 2 million home healthcare visits per month, providing services across the UK and Germany. Their technology includes predictive algorithms for health deterioration and falls, as well as tools to expedite hospital discharges.

Read more here:

<https://www.telegraph.co.uk/news/2024/05/03/app-cut-hospitalisation-rates-among-elderly-save-1bn-year/>

### First clinical trial of AI therapy chatbot shows benefits

Researchers at the University of Dartmouth conducted the first-ever clinical trial of a generative AI-powered therapy chatbot. Findings demonstrated that the Gener resulted in significant improvements in participants' symptoms, according to a study published in the New England Journal of Medicine Artificial Intelligence. To learn more, click here:

<https://home.dartmouth.edu/news/2025/03/first-therapy-chatbot-trial-yields-mental-health-benefits>

# SELECTED PUBLICATIONS

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## WORK BY OUR TEAM

01.

Making the leap from idea generation to implementation: Ten steps every geriatrics specialist should know.

Agarwal N, Pagali SR, Sharma KD, **Walke LM**. J Am Geriatr Soc. 2025 Jan;73(1):12-19. doi: 10.1111/jgs.19139. Epub 2024 Aug 12. PMID: 39135348

02.

Challenges and Opportunities in Implementing a Multicomponent Dementia Caregiver Program in a Complex Healthcare System.

Warren CM, Ashcraft LE, Peeples A, Piazza KM, Goodman O, Gitlin LN, Long JA, Burke RE, Werner RM, **Brown RT**. Inquiry. 2025 Jan-Dec;62:469580251322364. doi: 10.1177/00469580251322364. Epub 2025 Mar 12. PMID: 40070359

03.

High-dimensional mediation analysis reveals the mediating role of physical activity patterns in genetic pathways leading to AD-like brain atrophy.

Xu H, Mu S, Bao J, Davatzikos C, Shou H, **Shen L**. BioData Min. 2025 Mar 24;18(1):24. doi: 10.1186/s13040-025-00432-1. PMID: 40128806

04.

AI as an accelerator for defining new problems that transcends boundaries.

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 <p><b>Understanding Functional Status Among Older Adults</b> with Dr. Rebecca Brown</p>  <p>08:24</p> <p>Understanding Functional Status Among Older Adults</p>	 <p><b>Generative AI and Aging</b> with Dr. George Demiris</p>  <p>06:10</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>
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