# Dean's Research Scholar

A distinguished faculty member at Wake Forest University School of Medicine recognized for their exceptional research accomplishments and potential for future impact.

## Kiran K. Solingapuram Sai, PhD

**Associate Professor, Department of Radiology**
**Director, Radiochemistry and Cyclotron Operations**

Kiran K. Solingapuram Sai, PhD is a tenured Associate Professor of Radiology at Wake Forest School of Medicine. He also serves as the Director of Radiochemistry and Cyclotron Operations for the Atrium Wake Forest Research Enterprise. He earned his doctorate in Organic Chemistry from Northern Illinois University from Dr. Klumpp's lab (2009) and subsequently completed post-doctoral training in Radiochemistry and Molecular Imaging from Washington University in St. Louis from Dr. Mach's lab (2010-2013). In 2014, he joined Wake Forest as a Research Instructor, where he established and currently oversees a fully-functional, GMP-complaint radiochemistry facility that supports animal and human PET imaging across the Atrium Wake Forest Research community.

Dr. Sai's research is highly innovative, translational, and fully NIH-funded. His lab has successfully translated multiple PET radiotracers from bench-to-bedside, including pioneering first-in-human and patient trials. He serves as a principal investigator on NIH grants focusing on developing and evaluating first-in-class PET radiotracers for imaging microtubules to facilitate the early detection of Alzheimer's disease and related dementia. His work on microtubule PET radiotracers is currently being evaluated in larger Alzheimer's patient populations.

Dr. Sai's lab investigated the differential nicotine deposition between electronic and combustible cigarettes using PET imaging for the first time in smokers and now exploring the effects of flavors in electronic cigarettes. In the preclinical to clinical realm, his lab also demonstrated brain penetration of intranasally administered insulin and demonstrated the brain penetration of insulin, opening new avenues for therapeutic applications in treating dementia.

Throughout his career, Dr. Sai has authored over 80 peer-reviewed articles and more than 150 scientific abstracts and holds three patent applications. He has mentored many graduate, undergraduate students, postdoctoral researchers, high school students, and clinical fellows. His expertise is recognized through his service on the boards of several national and international Societies of Nuclear Medicine and Molecular Imaging (SNMMI). In 2023, he was honored as a Distinguished Investigator by the Academy for Radiology and Biomedical Imaging Research, and in 2025, he received the SNMMI Mars Shot Innovation Award underscoring his significant contributions to the field.

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For additional information about Dr. Sai's research and how philanthropic support can assist, please contact **Ed Crowder** in the Office of Philanthropy and Alumni Relations at **edward.crowder@advocatehealth.org or 336-716-4718.**

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## Mariana Murea, MD

**Associate Professor, Department of Internal Medicine**
**Section on Nephrology**

Dr. Mariana Murea's research focuses on advancing personalized, evidence-based hemodialysis strategies to improve patient outcomes, preserve residual kidney function, and optimize vascular access selection. Using a multidisciplinary approach that integrates clinical trials, qualitative research, implementation science, and mechanistic studies, her work aims to develop tailored dialysis treatments that enhance quality of life while minimizing complications in kidney dysfunction requiring dialysis.

A critical component of Dr. Murea's research is the investigation of patient-centered vascular access selection to improve long-term outcomes for patients on hemodialysis. Understanding the outcomes associated with different types of arteriovenous (AV) access is essential for reducing catheter dependence, minimizing infection risks, and optimizing long-term access patency. Her work in this area aims to refine clinical decision-making by identifying strategies that align with individual patient needs and comorbidities, ultimately improving vascular access management in older adults.

One of Dr. Murea's major ongoing projects is the AV Access Trial (R01 AG071803), a multicenter randomized controlled trial comparing the use of arteriovenous fistula versus arteriovenous grafts for vascular access in older adults with significant comorbidities. This study is designed to provide data-driven guidance on vascular access selection, with the goal of reducing complications and improving patient outcomes.

Conventional hemodialysis follows a rigid three-times-per-week schedule, regardless of a patient's residual kidney function. Dr. Murea's research challenges this paradigm by evaluating incremental hemodialysis regimens that adapt to a patient's remaining kidney function. By implementing individualized treatment approaches, this work aims to reduce the physiological burden of dialysis while preserving kidney function for as long as possible. The goal is to shift clinical practice toward a more flexible model that optimizes treatment initiation based on patient-specific needs.

Another major research initiative is the TwoPlus Trial (PCORI CER-2022C1-26300), a nationwide hybrid effectiveness-implementation trial comparing an incremental-start hemodialysis regimen—beginning with twice-weekly treatments and adjuvant pharmacotherapy, with subsequent transition to thrice-weekly hemodialysis according to each individual's medical needs—to the conventional thrice-weekly start schedule. This study aims to generate evidence that supports the integration of incremental hemodialysis into clinical practice guidelines, thereby promoting more personalized and less physiologically taxing treatment strategies.

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For additional information about Dr. Murea's research and how philanthropic support can assist, please contact **Geoff Taylor** in the Office of Philanthropy and Alumni Relations at **david.taylor@advocatehealth.org or 336-716-4504.**

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## Tina Brinkley, PhD

**Associate Professor, Department of Internal Medicine**
**Section on Gerontology and Geriatric Medicine**

Tina Brinkley, PhD is an Associate Professor in the Department of Internal Medicine, Section on Gerontology and Geriatric Medicine at Wake Forest University School of Medicine (WFUSM). Her education and training is in exercise physiology and aging. Her research is focused on investigating the effects of exercise, diet and weight loss on body fat distribution, cardiovascular function, cardiometabolic risk factors, and brain health in older adults. She is also interested in understanding the role of obesity in the development and progression of Alzheimer's disease and related dementias. Dr. Brinkley has had leadership roles as the Principal Investigator or Co-Investigator of several studies funded by the NIA, NHLBI, American Heart Association, and Alzheimer's Association, and in the past six years has received three major NIH grants totaling over $15.5 million. These research activities have led to nearly 55 publications and 1 book chapter, documenting her expertise in conducting randomized clinical trials and publishing high impact results.

Dr. Brinkley also supports scientific advancement at both the national and local level. She has served on the Program Committee for the North American Artery Society since 2014, and she regularly reviews grants, manuscripts, and abstracts for a variety of funding agencies, scientific organizations, and cardiovascular, aging, and physiology journals. At WFUSM she actively participates on the Graduate Faculty and on several institutional training grants and research training programs, and she is an active member of the Sticht Center for Healthy Aging and Alzheimer's Prevention, the Alzheimer's Disease Research Center, the Cardiovascular Sciences Center, the Center for Diabetes, Obesity and Metabolism, and the Maya Angelou Research Center for Healthy Communities.

Dr. Brinkley is committed to providing strong scientific exposure and mentorship to individuals across the educational spectrum, while maintaining a vibrant research program with multidisciplinary collaborations, sustained productivity, and national recognition. She hopes that her work not only highlights the importance of food and exercise as medicine, but also empowers communities to promote healthy aging and inspires future scientists to explore careers in biomedical research.

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For additional information about Dr. Brinkley's research and how philanthropic support can assist, please contact **Leigh Mcilwain** in the Office of Philanthropy and Alumni Relations at **leigh.mcilwain@advocatehealth.org or 336-716-7894.**