PET-RTRC

The latest news from the PET Radiotracer Translation and Resource Center

Washington University in St. Louis
School of Medicine

Letter from the Program Director

Dear Colleagues,

Welcome to the Fall/Winter 2025 edition of the PET-RTRC newsletter. We have had an active summer and fall since our last newsletter. We had booths at both the SNMMI meeting in New Orleans in June and the WMIC meeting in Anchorage in September, as well as a poster at the iSRS meeting in Gold Coast, Australia. Thanks to everyone who stopped by, it is always great to talk to you and tell you about the great things happening with the Center. In addition, a P41 Symposium was held at the WMIC meeting entitled "P41 Centers and the Art of Collaboration Driving Scientific Innovation". This symposium was well attended, and the session was chaired by myself. Presentations were given by Drs. El Fakhri (MGH), Sharma (WashU), Sinusas (Yale), Bulte (Johns Hopkins), and Gale (MGH). This session focused on the various TR&D and Collaborative Project (CP) relationships in the P41 Centers. We also had outstanding seminars by Dr. Carolyn Anderson from the University of Missouri in September and Dr. Henry Vanbrocklin as the Michael J. Welch Memorial lecturer in November.

In this issue, the Spotlight section focuses on the exciting work of Dr. Albert Sinusas, MD- CP for TR&D 3. This CP utilizes the Galuminox developed in TR&D 3 by Dr. Sharma for imaging of reactive oxygen species (ROS) in a porcine model of myocardial reperfusion injury. In particular, Dr. Sinusas shows that SPECT imaging with ^{67}Ga-Galuminox can detect the site of injury and these results were validated by ex vivo imaging and tissue gamma well counting.

Our 2026 Workshop and Scientific Session are set for February 17-19. The Workshops will focus on Inflammation and Infectious Disease Imaging and will include a hands-on session for image analysis procedures. There will also be a short session on FDA regulatory updates. The Scientific Session will feature a plenary lecture by Dr. Sruti Shiva from the University of Pittsburgh. These sessions will be conducted in a hybrid manner, and those that can attend in person can tour our facilities on the morning of February 19.

Please visit our website to learn more about the PET-RTRC and our upcoming activities. To stay up to date with our most recent developments or to be added to our mailing list, please contact Lisa Detering at lisa.moore@wustl.edu

Best Regards,

Robert J Gropler, MD
PET-RTRC Program Director

Fall/Winter 2025

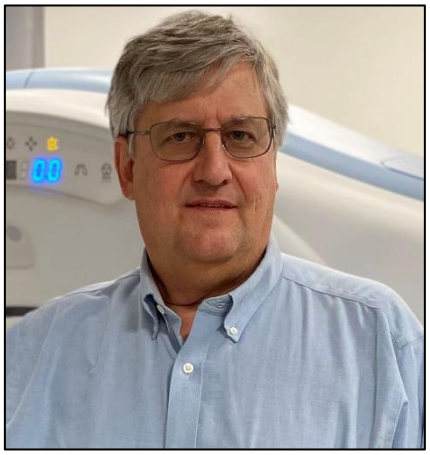
A Look Inside

The PET-RTRC is the U.S. innovation hub for the development of novel PET radiotracers. Leading the way for a nationwide network of collaborators, the center seeks to expand the understanding of diseases and advance the mission of precision imaging.

MIR Mallinckrodt Institute of Radiology

NIH National Institute of Biomedical Imaging and Bioengineering

The PET-RTRC is supported by the NIH NIBIB Grant # P41 EB025815



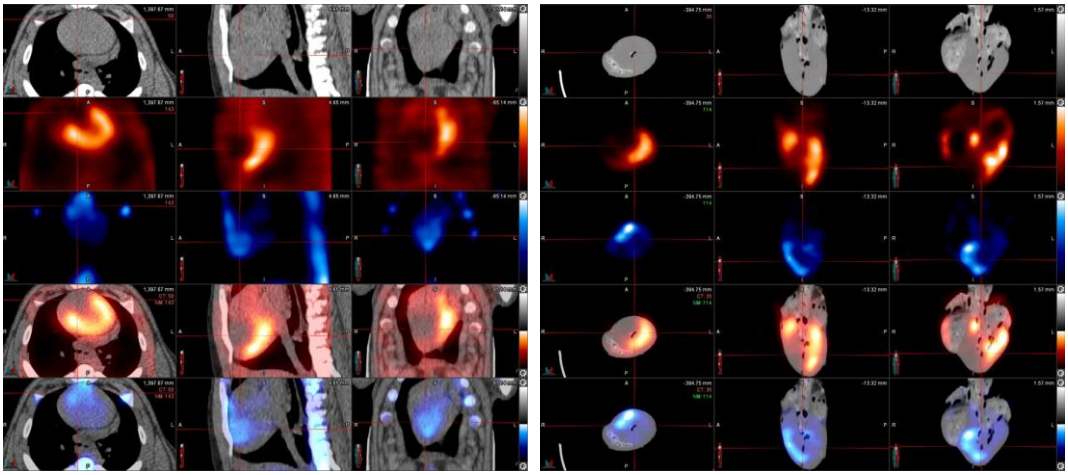
Spotlight

The NIBIB funded P41 PET-RTRC program at WashU and MIR aims to develop new PET radiotracers to deliver accurate diagnosis and personalized treatment of human disease. In the current funding cycle, the PET-RTRC program is centered on the development of PET radiotracers for imaging inflammation and inflammatory responses. With 14 Collaborative Projects (CPs), 17 Service Projects (SPs), three TR&Ds, and dedicated cores for informatics, training, and dissemination, the PET-RTRC is the largest grant in Radiology at Washington University. Among the three Translational Research and Development (TR&D) projects, **TR&D 3** (Led by Dr. Vijay Sharma, Professor of Radiology, and Co-leader Dr. Andrew Gelman, Professor of Surgery) is focused on the design and development of several novel PET and SPECT radiotracers to detect the presence of reactive oxygen species (ROS). The organizational foundation for scientific innovation within a P41 Center is the "push-pull" relationship between its TR&D projects and Collaborative Projects (CPs). In this newsletter, we highlight this partnership through the work of **Dr. Albert Sinusas, MD- above**, whose collaboration with TR&D 3 is propelling new PET-related research with the potential to transform biomedical research and precision medicine.

Dr. Sinusas, Professor of Medicine and Radiology at Yale University, evaluated several ^{67}Ga-labeled radiotracers targeted at activation of mitochondrial ROS for SPECT imaging of reperfusion injury of the heart, and ischemic injury of lower extremities and lungs. His lab focused their evaluation on ^{67}Ga-Galuminox, the first-in-class mitochondrial-targeted molecular imaging SPECT probe that specifically detects superoxide and its downstream product, hydrogen peroxide. SPECT imaging studies were performed in a clinically relevant porcine model of ischemia/reperfusion injury with injection of radiotracer at different time points post reperfusion. They performed dual-isotope SPECT imaging with ^{99m}Tc-labeled agents and ^{67}Ga-Galuminox both early post injection and at 4 days post injection with favorable imaging results at both timepoints. Selected images are shown demonstrating ROS activation in the area of reperfused infarction as defined by ^{99m}Tc-Tetrofosmin. Regional myocardial radiotracer uptake was validated with gamma well counting of tissues. This work was presented at the P41 session at the World Molecular Imaging Conference (WMIC) in Anchorage Alaska on October 1, 2025.

^{99m}Tc-Tetrofosmin and ^{67}Ga-Galuminox
Cardiac Imaging – Acute Imaging Post-Reflow (5 Min)

In Vivo SPECT/CT **Ex Vivo SPECT/CT**



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Collaborative Projects

ALABAMA
University of Alabama at Birmingham
- Cancer Inflammation

ARIZONA
BNI Phoenix
- Multiple Sclerosis

CALIFORNIA
Stanford University
- Multiple Sclerosis
- Pancreatic Cancer

CONNECTICUT
Yale University
- Abdominal Aortic Aneurysm
- Acute Respiratory Distress Syndrome

GEORGIA
Emory University
- Bacterial Infection

LOUISIANA
Louisiana State University
- Ischemic Vascular Remodeling

MISSOURI
Washington University School of Medicine
- Abdominal Aortic Aneurysm
- Cardiac Inflammation
- Neuroinflammation
- Neuroinflammation in Nigrostriatal Injury

NEW YORK
Memorial Sloan Kettering Cancer Center
- Cancer Biology

NORTH CAROLINA
University of North Carolina at Chapel Hill
- Bladder Cancer

Service Projects

CALIFORNIA
University of California San Diego
- Metastatic Cancer

University of Southern California
- Myeloma Bone Disease

CONNECTICUT
Yale University
- Mitochondrial Diseases
- Neuroinflammation

MISSOURI
Saint Louis University
- Cardiac Inflammation

Washington University School of Medicine
- Multiple Sclerosis
- Osteoarthritis
- Pulmonary Fibrosis

NEW YORK
Icahn School of Medicine at Mount Sinai
- Myocardial Infarction

PENNSYLVANIA
University of Pittsburgh Medical Center
- Atherosclerosis

TEXAS
University of Texas Southwestern
- Kidney Injury

UTAH
University of Utah
- Atherosclerosis

WASHINGTON DC
Howard University
- Traumatic Brain Injury

GERMANY
Hannover University
- Cardiac Inflammation and Fibrosis

Interested in becoming a member of the Center?

Please fill out the Collaborative Project or Service Project application and send to lisa.moore@wustl.edu

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Seminar Speaker | September 9, 2025

Carolyn Anderson, PhD- University of Missouri, Columbia

In September, we welcomed Dr. Carolyn Anderson from the University of Missouri-Columbia to give a Seminar titled "*Next Generation Theranostics Incorporating Alpha, Beta and Low-Energy Electron Emitters*." This lecture was offered both in person and via Zoom and was attended by over 130 participants across both platforms. Watch the Seminar here!

The Michael J. Welch Memorial Lecture November 18, 2025

Henry VanBrocklin, PhD- University of California, San Francisco

This November, in collaboration with the Oncologic Imaging Program at the Siteman Cancer Center, the PET-RTRC co-hosted the Michael J. Welch Memorial Lecture. Dr. Welch was a pioneering leader in radiology and PET imaging whose work helped shape the field. This year's speaker was Dr. Henry VanBrocklin from UCSF, who presented "*New Molecules, New Targets: Passive and Active Delivery of Tumor-Homing Agents for Imaging and Therapy.*" The lecture series has been held annually since Dr. Welch's passing in 2012, and Dr. VanBrocklin was the 14th distinguished lecturer. Watch the Seminar here!

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SNMMI 2025

New Orleans, Louisiana

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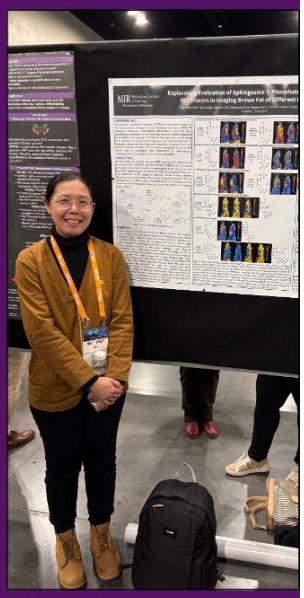

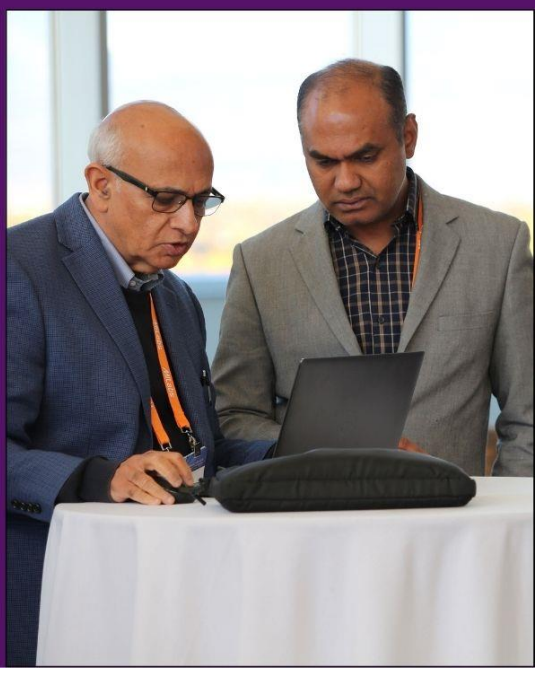

The PET-RTRC is supported by the NIH NIBIB Grant # P41 EB025815

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TR&D 3:

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Upcoming Events

REGISTRATION OPEN | February 17-19, 2026

Register here! This event provides informative presentations from experts in the field on **Imaging of Inflammation and Infectious Disease**. We will also be offering hands-on training and demonstrations of preclinical imaging software. The overall focus of the Scientific Session will be on *Inflammation-Oxidative Stress*, with Plenary Lectures from **Dr. Sruti Shiva and Dr. Vijay Sharma**.

Look for Us

PET-RTRC BOOTH #1330 @ **SNMMI May 31-June 3, 2026** | Los Angeles, CA

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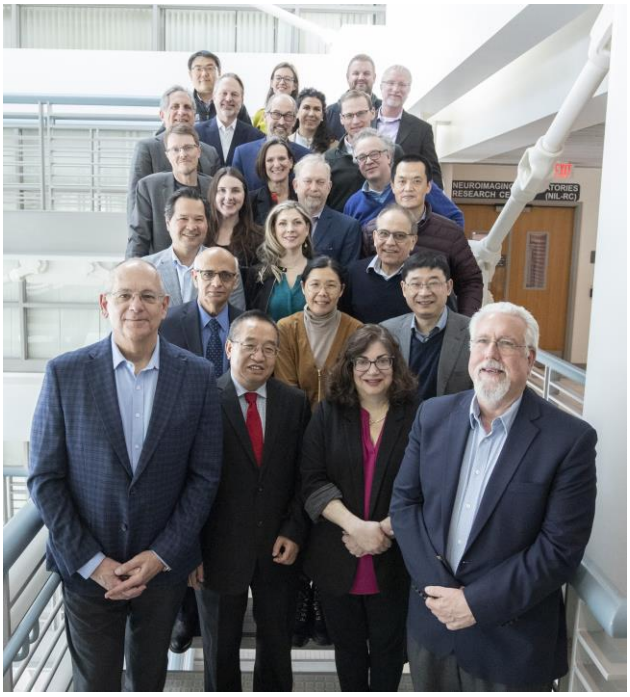

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