

Psychology

Deanna Barch, PhD – *High-resolution structural, functional, and diffusion tensor imaging*

Todd Braver, PhD – *Integration of neuroimaging and computational neural modeling*

Jeffrey Zacks, PhD – *fMRI with behavioral studies and computational modeling*

Radiology

Samuel Achilefu, PhD – *Molecular probes and nanomaterials to image pathophysiologic processes*

Carolyn Anderson, PhD – *PET and optical imaging methods of molecular targets of disease*

Joseph Culver, PhD – *Optical measurements for functional and molecular bioimaging*

Jason Lewis, PhD – *Positron emission tomography (PET) radiopharmaceutical design*

Robert Mach, PhD – *Radiopharmaceuticals for imaging cell proliferation and apoptosis*

David Piwnica-Worms, MD, PhD – *Cellular/molecular imaging of biological processes*

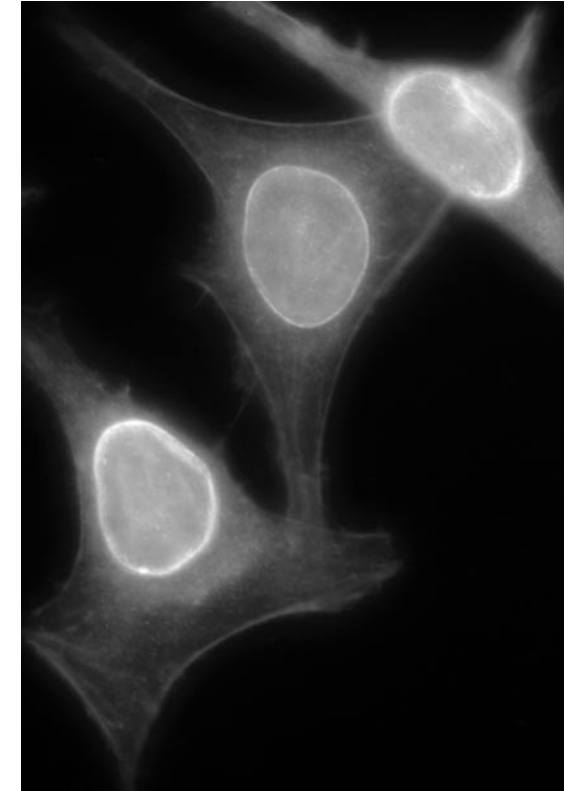
Marcus Raichle, MD – *Functional brain imaging with MRI and PET*

Kooresh Shoghi, PhD – *Quantification and simulation of biological processes*

Michael Welch, PhD – *Design of image-enhancement agents for use with PET*

Dimitriy Yablonskiy, PhD – *MRI techniques to quantify tissue structure and function*

 Washington University in St. Louis



**Imaging
Sciences Pathway
Mentors**


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Mentors

Anatomy & Neurobiology

Paul Bridgman, PhD – *Fluorescence, confocal, 2-photon microscopy in neurons*

Harold Burton, PhD – *fMRI to study neuronal changes related to blindness*

Tim Holy, PhD – *3D fluorescence microscopy to image neural activity*

Paul Taghert, PhD – *Real-time imaging in circadian physiology*

Biochemistry & Biophysics

Elliot Elson, PhD – *Fluorescence fluctuation measurements of molecules in cells*

Biology

Erik Herzog, PhD – *Real-time imaging of circadian gene expression*

Kathryn Miller, PhD – *In vivo imaging of actin cytoskeleton*

Ralph Quatrano, PhD – *Protein localization by fluorescence microscopy*

Biomedical Engineering

Dennis Barbour, MD, PhD – *Functional neuroimaging*

Igor Efimov, PhD – *Cardiac imaging, optical tomography, confocal microscopy*

Larry Taber, PhD – *Quantitative imaging of heart and brain development*

Lihong Wang, PhD – *Functional/molecular biophotonic imaging*

Cell Biology & Physiology

John Cooper, MD, PhD – *Cell motility, various light/electron microscopy modalities*

David Harris, MD, PhD – *Fluorescence imaging of prions*

John Heuser, MD – *Deep-etch cryo-electron microscopy*

Robert Mecham, PhD – *Live cell imaging of extracellular matrix assembly*

Helen Piwnica-Worms, PhD – *Molecular imaging in cell cycle control*

Paul Schlesinger, MD, PhD – *Live cell imaging of intracellular Ca⁺⁺ and H⁺*

Philip Stahl, PhD – *Endocytosis and cell signaling using confocal microscopy*

Robert Wilkinson, PhD – *Confocal and low-light deconvolution microscopy*

Chemistry

Joe Ackerman, PhD – *Magnetic resonance spectroscopy and imaging*

Dewey Holten, PhD – *Optical molecular spectroscopy and imaging*

Richard Mabbs, PhD – *Laser spectroscopy and photodetachment imaging*

John Stephen Taylor, PhD – *Optical and PET imaging, peptide nucleic acid labeling*

Amy Walker, PhD – *Time-of-flight secondary ion mass spectrometry (TOF SIMS)*

Karen Wooley, PhD – *Novel nanoscale imaging agents*

Developmental Biology

Raphael Kopan, PhD – *Real-time imaging of Notch signaling*

Computer Science

Cindy Grimm, PhD – *Surface reconstruction from 3D MRI and CT data*

Electrical & Systems Engineering

R. Martin Arthur, PhD – *Ultrasonic imaging and electrocardiographic imaging*

Arye Nehorai, PhD – *Microarray imaging*

Jody O'Sullivan, PhD – *Hyperspectral, PET-CT X-ray, and fluorescence imaging*

Mathematics

Victor Wickerhauser, PhD – *Image processing algorithms*

Mechanical Engineering

Philip Bayly, PhD – *MRI of brain deformation and function*

Medicine

Sándor Kovács, PhD, MD – *Cardiovascular physiology, imaging, mathematical modeling*

Gregory Lanza, MD, PhD – *Noninvasive molecular imaging and drug delivery*

Lee Ratner, MD, PhD – *Bioluminescent imaging of HTLV-1 Tax lymphomas*

Kathy Weilbaecher, MD – *PET, bioluminescence and MR imaging in bone metastasis*

Sam Wickline, MD – *Nanotechnology for molecular imaging and targeted therapeutics*

Neurology

Mark Goldberg, MD – *Ca and digital fluorescence imaging, multiphoton microscopy*

Jeffrey Neil, MD, PhD – *MRI, spectroscopy, diffusion tensor imaging*

Joel Perlmutter, MD – *PET in study of the pathophysiology of movement disorders*

Steve Petersen, PhD – *Behavioral and functional neuroimaging*

Pathology & Immunology

Mark Miller, PhD – *Immunofluorescence microscopy and multi-photon imaging*

Physics

Mark Conradi, PhD – *MRI in human lung*

Mark Holland, PhD – *Medical ultrasound applications*

James Miller, PhD – *Anisotropic properties of the heart, echocardiographic imaging*

Yan Mei Wang, PhD – *Real-time single-molecule and single-cell fluorescence imaging*

Psychiatry

Kevin Black, MD – *Pharmacologic neuroimaging in muscle disorders*

Tamara Hershey, PhD – *Neuroimaging studies of cognitive dysfunction*

Yvette Sheline, MD – *Neuroimaging studies of the physiology of depression*