# Department of Radiology

The Edward Mallinckrodt Institute of Radiology — more commonly known as Mallinckrodt Institute of Radiology or MIR — serves as the Department of Radiology for Washington University School of Medicine in St. Louis, helping to guide the consulting physician in the discovery, the treatment, and, ultimately, the healing of disease. Established in 1930, MIR is one of the largest and most scientifically sophisticated radiology centers worldwide.

Internationally recognized for its groundbreaking research, the Institute continues to pioneer new radiological techniques for better patient

# **Milestones**

- · Development of the first diagnostic test for gallbladder disease
- Design and construction of the first cross-sectional X-ray laminagraph
- Collaboration on design and installation of the first cyclotron located in a U.S. medical center
- Development of positron emission tomography (PET)
- Installation of one of the world's first computed tomography (CT) and magnetic resonance (MR) scanners
- Interfacing of a minicomputer with a gamma camera to improve the accuracy and efficiency of nuclear medicine procedures
- Establishment of the first mobile mammography van west of the Mississippi River
- Integration of CT and MR scans with a three-dimensional technology application of organic chemistry to the preparation of radiopharmaceuticals used in medical imaging
- Measurement of cerebral blood flow and metabolism
- Establishment of one of the largest and most comprehensive interventional radiology services in the United States
- Application of PET for measuring metabolic activity in relation to cardiac blood flow
- Early adoption of sequential PET/MR imaging

The Institute occupies more than 400,000 total square feet and comprises its own 12-story building, with satellite facilities in Barnes-Jewish and St. Louis Children's hospitals; the Clinical Sciences Research and East buildings; the Scott Avenue Imaging Center; the Center for Advanced Medicine; the Knight Emergency and Trauma Center; and the South County Siteman Cancer Center. The department provides diagnostic radiology, nuclear medicine and radiation physics services for all hospitals in the Washington University Medical Center, Barnes-Jewish West County and Barnes-Jewish St. Peters hospitals. The Institute also provides diagnostic radiology for the Washington University Orthopedic and Barnes-Jewish Hospital Outpatient Orthopedic center.

MIR clinical facilities are on several floors of the Institute, with general diagnostic radiology on the second floor; neuroradiology on the third floor; gastrointestinal and genitourinary radiology and ultrasonography on the fourth floor; and MRI on the fifth floor. A comprehensive interventional radiology center occupies the eighth floor. Nuclear medicine is on the ninth floor of the Barnes-Jewish Hospital West Pavilion. Orthopedic imaging and musculoskeletal radiology services are on the sixth floor of the Center for Advanced Medicine. The Breast Health Center, on the fifth floor of the Center for Advanced Medicine, is a multidisciplinary facility that provides a full range of breast imaging services and interventional procedures. In the north wing of St. Louis Children's Hospital is a complete pediatric radiology facility, offering ultrasound, nuclear medicine, CT and MRI, and interventional radiology.

The Institute has 102 examination rooms used for diagnostic radiology. Clinical and research equipment includes two PET/CT scanners, 13 CT scanners, two PET scanners, one PET/MR scanner, 15 MR scanners (including an 11.7-Tesla research scanner), 12 high-end ultrasound machines (plus seven portable units), nine interventional radiology systems, five digital chest units, 10 computer radiography units, two neurointerventional radiology systems and six mammography units. In addition, as part of the department's community outreach effort, the Institute co-sponsors with the Alvin J. Siteman Cancer Center a mobile mammography van that provides screening services at corporate and public sites in the St. Louis area.

MIR has approximately 200,000 square feet devoted to research, with facilities in the Clinical Sciences Research Building (radiological sciences), in the East Building (electronic radiology), in the Scott Avenue Imaging Center (neurological PET, molecular pharmacology, biomedical MR imaging, optical imaging and cardiovascular imaging), and in the Center for Clinical Imaging Research (a bioimaging facility for basic and translational inpatient and outpatient clinical research).

Administrative, teaching and support functions occupy the sixth floor and the ninth through the 12th floors of the Institute. Information and training related to the use of radioactive materials is handled by Environmental Health and Safety; for more information, contact the department's director Daniel Doenges, CHP, at 314-362-2988 or daniel.doenges@wustl.edu.

Website: https://www.mir.wustl.edu

# **Faculty**

#### Richard L. Wahl, MD

Department Chair

Visit our website for more information about our faculty and their appointments.



#### Diane S Abou, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, University of Montpellier II, 2003 Master of Science, Faculté des sciences d'Orsay, 2005



Doctor of Philosophy, Delft University of Technology, 2010

# Joseph J.H. Ackerman, Ph.D.

Professor of Radiology (primary appointment)
William Greenleaf Eliot Professor Emeritus of Chemistry
Bachelor of Arts, Boston University, 1972
Doctor of Philosophy, Colorado State University, 1977

#### **Ankita Aggarwal**

Assistant Professor of Radiology (Pending Dean Approval) (primary appointment)

# Tabassum Ahmad, M.D.

Associate Professor of Radiology (primary appointment) Doctor of Medicine, Aga Khan University, 1996

#### Mercy Iyabode Akerele, Ph.D.

Assistant Professor of Radiology (primary appointment)
Doctor of Philosophy, University of Leeds, 2019

#### Houman Alizadeh, M.D.

Voluntary Clinical Associate Professor of Radiology Doctor of Medicine, Babol University of Medical Sciences, 1995

#### Hongyu An, M.S., Ph.D.

Professor of Radiology (primary appointment)
Professor of Neurology
Bachelor of Science, Tianjin University (####), 1993
Master of Science, Washington University in St Louis, 1999
Doctor of Philosophy, Washington University in St Louis, 2001

# Trevor John Andrews, Ph.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, University of Texas Austin, 1994
Doctor of Philosophy, University of Texas Health Sciences at San
Antonio, 2005

# B

#### Jonathan C Baker, M.D.

Professor of Radiology (primary appointment)
Bachelor of Science, Saint Louis University, 2000
Doctor of Medicine, Washington University in St Louis, 2004

# Edwin J Baldelomar, Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, University of Texas Arlington, 2011
Doctor of Philosophy, University of Hawaii at Manoa, 2019

# Dennis M Balfe, M.D.

Professor Emeritus of Radiology Bachelor of Science, Santa Clara University, 1968 Doctor of Medicine, Medical College of Wisconsin, 1975

#### David Hilton Ballard, M.S., M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, McNeese State University, 2008
Master of Science, McNeese State University, 2011
Doctor of Medicine, Louisiana State University Health Sciences Center at New Orleans, 2015

# Krystle G. Barhaghi, M.D.

Assistant Professor of Radiology (primary appointment)

Doctor of Medicine, Tulane University, 2014

# Remco Bastiaannet, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Twente, 2011
Master of Science, University of Twente, 2013
Doctor of Philosophy, University of Utrecht, 2020

#### Adam Quentin Bauer, M.S., Ph.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Truman State University (Formerly Northeast
Missouri State University), 2001
Master of Science, Washington University in St Louis, 2005
Doctor of Philosophy, Washington University in St Louis, 2009

#### Michael Beal, M.D.

Assistant Professor of Radiology (primary appointment) Assistant Professor of Medicine Doctor of Medicine, Saint Louis University, 2014

#### Debbie Lee Bennett, M.D.

Professor of Radiology (primary appointment)
Section Chief - Breast Imaging
Ronald and Hanna Evens Professor of Women's Health
Bachelor of Science, Princeton University, 2003
Doctor of Medicine, Harvard University, 2008

#### Kevin Michael Bennett, Ph.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Milwaukee School of Engineering, 1998
Doctor of Philosophy, Medical College of Wisconsin, 2003

#### Tammie Lee Smith Benzinger, Ph.D., M.D.

Professor of Radiology (primary appointment)
Professor of Neurological Surgery
Hugh Monroe Wilson Professor of Radiology
Bachelor of Arts, Williams College, 1993
Doctor of Philosophy, University of Chicago, 1998
Doctor of Medicine, University of Chicago, 2000

# Mikhail Y Berezin, M.S., Ph.D.

Associate Professor of Radiology (primary appointment)
Master of Science, Moscow Institute of Oil & Gas, 1987
Doctor of Philosophy, Moscow Institute of Oil & Gas, 1991

# Sagine Audra Berry-Tony, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Stony Brook University, 2008
Doctor of Medicine, George Washington University, 2013

#### Sanjeev Bhalla, M.D.

Section Chief - Cardiothoracic
Professor of Medicine
Bachelor of Science, Yale University, 1990
Doctor of Medicine, Columbia College of Physicians and Surgeons, 1994

# Andrew J Bierhals, M.P.H., M.D.

Professor of Radiology (primary appointment) Professor of Medicine Professor of Pediatrics

Professor of Radiology (primary appointment)



Bachelor of Science, University of Pittsburgh, 1993 Master of Public Health, University of Pittsburgh, 1996 Doctor of Medicine, University of Pittsburgh, 2000

#### Joelle Biernacki, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Arts, University of Missouri Kansas City, 1988
Doctor of Medicine, University of Missouri Kansas City, 1989

#### Janine Diane Bijsterbosch, M.S., Ph.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Maastricht University, 2006
Master of Science, University of Sheffield, 2007
Doctor of Philosophy, University of Sheffield, 2011

#### Tyler M Blazey, Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, University of Minnesota Twin Cities, 2010
Doctor of Philosophy, Washington University in St Louis, 2019

#### Mitra Bill Boodram, M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, McMaster University, 1983 Doctor of Medicine, Rosalind Franklin University of Medicine and Science (Formerly Finch University of Health Sciences), 1989

#### Daniel Braga, M.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, Florida State University, 2012 Doctor of Medicine, Saint George's University, 2018

#### Jennie Esther Brodsky, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, New York University, 2003
Doctor of Medicine, New York University School of Medicine, 2007

#### Arianna Cloe Buckley, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Southern Methodist University, 2011
Doctor of Medicine, Southern Illinois University Carbondale, 2015

#### Scott Michael Bugenhagen, Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Milwaukee School of Engineering, 2007
Doctor of Philosophy, Medical College of Wisconsin, 2014
Doctor of Medicine, Medical College of Wisconsin, 2016



#### Runnan Cao, Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, Shandong Normal University (######), 2012
Doctor of Philosophy, Chinese Academy of Sciences, 2018

# Daniel Charles Castro, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Washington, 2011
Master of Science, University of Michigan Ann Arbor, 2013
Doctor of Philosophy, University of Michigan Ann Arbor, 2016

# Karen A Caudill, M.D.

Assistant Professor of Radiology (primary appointment)

Assistant Professor of Pediatrics

Bachelor of Science, University of Missouri Kansas City, 1996 Doctor of Medicine, University of Missouri Kansas City, 1996

#### Ganesh B Chand, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Tribhuvan University, 2003
Master of Science, Tribhuvan University, 2007
Doctor of Philosophy, Georgia State University, 2015

#### Aisling M. Chaney, Ph.D., MSBI

Assistant Professor of Radiology (Pending Executive Faculty Approval) (primary appointment)
MSBI-Masters in Bioimaging, Imperial College, 2012
Doctor of Philosophy, University of Manchester, 2016

#### Jodie Chang, M.D.

Voluntary Clinical Assistant Professor of Radiology Doctor of Medicine, Washington University in St Louis, null

#### Arindam Rano Chatterjee, M.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Columbia University, 2000
Doctor of Medicine, University of Tennessee at Memphis, 2006

#### Sadaf Summer Chaudhry, M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, Boston University, 2003 Doctor of Medicine, Boston University, 2007

# Sherwin Chiu, M.D.

Assistant Professor of Radiology (primary appointment)
Doctor of Medicine, University of Alabama at Birmingham School of
Medicine, 2018

# Wenhua Chu, M.S., Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, Ocean University of China (######), 1982
Master of Science, Academia Sinica China, 1985
Doctor of Philosophy, Academia Sinica China, 1988

#### Marc F. Clemente, M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, University of California Davis, 1993 Doctor of Medicine, Saint Louis University, 1997

#### Paul Kevin Commean, B.E.E.

Assistant Professor of Radiology (primary appointment)
Assistant Professor of Physical Therapy
Bachelor of Electrical Engineering, Georgia Institute of TechnologyMain Campus, 1982

#### Thomas E Conturo, Ph.D., M.D.

Associate Professor of Radiology (primary appointment) Bachelor of Arts, University of Pennsylvania, 1981 Doctor of Philosophy, Vanderbilt University, 1989 Doctor of Medicine, Vanderbilt University, 1989

# Constance Stone Courtois, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Wofford College, 1980
Doctor of Medicine, Medical University of South Carolina, 1985



#### **Dewitte T Cross**

Professor Emeritus of Radiology

#### Joseph P Culver, Ph.D.

Professor of Radiology (primary appointment)
Sherwood Moore Professor of Radiology
Professor of Physics (Courtesy)
Professor of Electrical and Systems Engineering
Bachelor of Arts, Whitman College, 1985
Bachelor of Science, University of Washington, 1988
Doctor of Philosophy, University of Pennsylvania, 1997

#### Douglas J Curry, M.D.

Voluntary Clinical Instructor in Radiology Doctor of Medicine, University of Texas Southwest, 1997

#### Brian Cusworth, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Arts, Harvard University, 2007
Doctor of Medicine, Washington University in St Louis, 2019



#### Michael D Darcy, M.D.

Professor of Radiology (primary appointment)
Bachelor of Science, Ohio State University-Main Campus, 1976
Doctor of Medicine, Ohio State University-Main Campus, 1979

#### Farrokh Dehdashti, M.D.

Professor of Radiology (primary appointment)
Barry A and Marilyn J Siegel Professor of Radiology
Senior Vice Chair - Division of Nuclear Medicine
Doctor of Medicine, Pahlavi University, 1977

#### Christina Doherty, M.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Truman State University (Formerly Northeast
Missouri State University), 1997
Doctor of Medicine, Southern Illinois University Carbondale, 2001

#### Steven Don, M.D.

Professor of Radiology (primary appointment) Bachelor of Arts, Johns Hopkins University, 1981 Doctor of Medicine, Vanderbilt University, 1985

# James R Duncan, Ph.D., M.D.

Professor of Radiology (primary appointment)
Bachelor of Science, University of Michigan Ann Arbor, 1982
Doctor of Philosophy, Washington University in St Louis, 1988
Doctor of Medicine, Washington University in St Louis, 1988



# Adam Thomas Eggebrecht, M.S., Ph.D.

Associate Professor of Radiology (primary appointment)
Master of Science, Washington University in St Louis, 2005
Doctor of Philosophy, Washington University in St Louis, 2009

# Cihat Eldeniz, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, Bogazici University, 2006 Master of Science, Duke University, 2008 Doctor of Philosophy, University of North Carolina at Chapel Hill, 2014

# Allen Devaney Elster, M.A., M.B.A., M.D., B.Eng

Professor of Radiology (primary appointment)
Bachelor of Engineering, Vanderbilt University, 1976
Master of Arts, University of Oxford, 1978
Doctor of Medicine, Baylor College of Medicine, 1980
Master of Business Administration, Wake Forest University, 1999

#### Azadeh Eslambolchi, M.D.

Instructor in Radiology (Pending Dean Approval) (primary appointment)

Doctor of Medicine, Tehran University of Medical Sciences, 2008

#### Ronald G Evens, M.D.

Professor Emeritus of Radiology Bachelor of Arts, Washington University in St Louis, 1961 Doctor of Medicine, Washington University in St Louis, 1964



#### Katharina Franziska Feister, M.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, Suffolk University, 2013 Doctor of Medicine, University of Miami, 2018

#### Keith C Fischer, M.D.

Emeritus Associate Professor of Radiology Bachelor of Arts, Oberlin College, 1967 Doctor of Medicine, Johns Hopkns University Medical (Duplicate of Johns Hopkins University), 1971

#### Shaney Flores, M.S.

Instructor in Radiology (primary appointment)
Bachelor of Science, University of Texas Pan American, 2011
Master of Science, University of Missouri in St Louis, 2023

#### Tyler Jacob Fraum, M.D.

Associate Professor of Radiology (primary appointment) Bachelor of Science, University of Chicago, 2008 Doctor of Medicine, Duke University, 2012

#### Nelly Friedrichsen, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment) Martinique, 2002

Master of Science, Université Paris 6 Pierre and Marie Curie, 2008 Doctor of Philosophy, University of Paris, 2012



# Joel Richard Garbow, Ph.D.

Professor of Radiology (primary appointment)
Bachelor of Science, University of Illinois at Urbana-Champaign, 1978
Doctor of Philosophy, University of California Berkeley, 1983

# ${\bf Heather\ Vallhonrat\ Garrett,\ M.D.}$

Associate Professor of Radiology (primary appointment)
Bachelor of Arts, University of Virginia, 1996
Doctor of Medicine, Washington University in St Louis, 2002

#### Aimilia Gastounioti, Ph.D.



Assistant Professor of Radiology (primary appointment)
Doctor of Philosophy, National Technical University of Athens, 2014

#### Joseph Giardina, M.D.

Associate Professor of Radiology (primary appointment) Associate Professor of Surgery (General Surgery) Bachelor of Arts, Williams College, 2004 Doctor of Medicine, New York Medical College, 2010

#### David S Gierada, M.D.

Professor of Radiology (primary appointment) Bachelor of Science, Davenport University, 1983 Doctor of Medicine, Wayne State University, 1988

#### Matthew F. Glasser, Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Assistant Professor of Neuroscience
Bachelor of Science, Emory University, 2006
Doctor of Philosophy, Washington University in St Louis, 2017
Doctor of Medicine, Washington University in St Louis, 2017

#### Harvey S Glazer, M.D.

Professor of Radiology (primary appointment)
Bachelor of Arts, Washington University in St Louis, 1971
Doctor of Medicine, Washington University in St Louis, 1976

#### Brian A Gordon, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Assistant Professor of Psychological & Brain Sciences
Bachelor of Science, University of Illinois at Urbana-Champaign, 2003
Master of Science, University of Illinois at Urbana-Champaign, 2006
Doctor of Philosophy, University of Illinois at Urbana-Champaign, 2010

# Evan Moss Gordon, Ph.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, Duke University, 2004 Doctor of Philosophy, Georgetown University, 2012

#### Jennifer E Gould, M.D.

Professor of Radiology (primary appointment)
Bachelor of Arts, Cornell University, 1993
Doctor of Medicine, Washington University in St Louis, 1997

#### Manu Shri Goyal, M.S., M.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Neuroscience
Associate Professor of Neurology
Bachelor of Science, University of Illinois at Chicago, 2000
Master of Science, University of Oxford, 2001
Doctor of Medicine, University of Chicago, 2005

# Andrew Greer, M.S., M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Missouri Columbia, 2006
Master of Science, Georgetown University, 2010
Doctor of Medicine, University of Nebraska Medical Center, 2015

#### Perry W Grigsby, M.B.A., M.S., M.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, University of Kentucky, 1974
Master of Science, University of Kentucky, 1978
Doctor of Medicine, University of Kentucky, 1982

Master of Business Administration, Washington University in St Louis,  $1990\,$ 

#### Robert John Gropler, M.D.

Professor of Radiology (primary appointment)
Senior Vice Chair - Division of Radiological Sciences, Research
Laboratories

Associate Professor of Medicine Professor of Biomedical Engineering Bachelor of Science, Allegheny College, 1977 Doctor of Medicine, University of Cincinnati-Main Campus, 1981

#### Lin Gu

Assistant Professor of Radiology (Pending Dean Approval) (primary appointment)

#### Carlos J Guevara, M.D.

Associate Professor of Radiology (primary appointment) Associate Professor of Surgery (General Surgery) Bachelor of Science, University South Carolina, 2002 Doctor of Medicine, Duke University, 2006

#### Caroline Guglielmetti, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, Universite Paul Sabatier, 2008 Master of Science, Universite Paul Sabatier, 2010 Doctor of Philosophy, University of Antwerp, 2016

#### Punita Gupta, M.P.H., M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Arts, Washington University in St Louis, 1995
Master of Public Health, Saint Louis University, 1996
Doctor of Medicine, University of Illinois at Urbana-Champaign, 2000

#### Fernando R Gutierrez, M.D.

Professor of Radiology (primary appointment)
Professor of Medicine
Doctor of Medicine, University of Valladolid, 1974

#### Jordan M Gutovich, M.D.

Voluntary Clinical Instructor in Radiology Doctor of Medicine, Drexel University, 2013

# Gloria J. Guzman Perez-Carrillo, M.B.A., M.P.H., M.S., M.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Arts, Johns Hopkins University, 1999
Doctor of Medicine, University of Puerto Rico, 2004
Master of Science, University of Granada, 2011
Master of Public Health, University of Arizona, 2019
Master of Business Administration, University of Arizona, 2023

# H

#### Paul Wayne Hargan, M.D.

Voluntary Clinical Instructor in Radiology Doctor of Medicine, Southern Illinois University Carbondale, 1977

#### Daniel Paul Harwood, M.D.

Assistant Professor of Radiology (primary appointment) Doctor of Medicine, Creighton University, 2015

#### Bruce L Hedgepeth, M.D.



Voluntary Clinical Instructor in Radiology Bachelor of Science, Arizona State University, 1986 Doctor of Medicine, University of Arizona, 1990

#### Gyu Seong Heo, M.S., Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, Sogang University, 2006
Master of Science, Sogang University, 2008
Doctor of Philosophy, Texas A&M University, 2016

#### Thomas Eugene Herman, M.D.

Instructor in Radiology (primary appointment)
Bachelor of Arts, Dartmouth College, 1971
Doctor of Medicine, Johns Hopkins University, 1975

#### Mark Jeffrey Hoegger, Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Wisconsin Madison, 2007
Doctor of Philosophy, University of Iowa, 2015
Doctor of Medicine, University of Iowa, 2015

#### Rebecca L Hulett, M.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Pediatrics
Baccalaureatus, Mount Holyoke College, 1977
Doctor of Medicine, University of Michigan Ann Arbor, 1981

# Ι

#### Resten Imaoka, M.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, University of California Davis, 2008 Doctor of Medicine, Saint George's University, 2013

#### Masatoshi Inoue, M.M.Sc., D.M.Sc.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Tokyo, 2007
Master of Medical Science, University of Tokyo, 2009
DMSc-Doctor of Medical Science, University of Tokyo, 2013

# Joseph Edward Ippolito, Ph.D., M.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Biochemistry and Molecular Biophysics
Bachelor of Science, Cornell University, 1998
Doctor of Philosophy, Washington University in St Louis, 2007
Doctor of Medicine, Washington University in St Louis, 2007

#### Malak Itani, M.D.

Associate Professor of Radiology (primary appointment) Bachelor of Science, American University of Beirut, 2003 Doctor of Medicine, American University of Beirut, 2007



#### Amin Haghighat Jahromi, M.D.

Assistant Professor of Radiology (primary appointment)
Doctor of Medicine, Tehran University of Medical Sciences, 2007

# William P James, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Arts, Washington University in St Louis, 1989

Doctor of Medicine, University of Missouri Columbia, 1993

# Cylen Javidan, M.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Medicine
Associate Professor of Pediatrics
Doctor of Medicine, Iran University of Medical Sciences, 1994

#### Jack W Jennings, M.S., Ph.D., M.D.

Professor of Radiology (primary appointment)

Section Chief - Musculoskeletal Professor of Orthopedic Surgery Bachelor of Science, Wheaton College Illinois, 1992 Master of Science, Ohio State University-Main Campus, 1995 Doctor of Philosophy, University of South Florida, 1999 Doctor of Medicine, University of South Florida, 2002

# Hao Jiang, M.S., Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, Gandhi Memorial Science College (G.G.M. Science College), 2006

Master of Science, Murray State University, 2009 Doctor of Philosophy, Virginia Polytechnic Institute and State University, 2014

#### R. Gilbert Jost, M.D.

Professor Emeritus of Radiology Bachelor of Arts, Harvard University, 1964 Doctor of Medicine, Yale University, 1969



# Pavan Kumar Kavali, M.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Surgery (General Surgery)
Bachelor of Science, Georgia Institute of Technology-Main Campus,
2003

Doctor of Medicine, Morehouse School of Medicine, 2010

# Jason A Kayser, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Missouri Kansas City, 1995
Doctor of Medicine, University of Missouri Columbia, 2002

# James E. Kelly, M.A., M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Notre Dame, 1999
Master of Arts, Washington University in St Louis, 2005
Doctor of Medicine, Washington University in St Louis, 2005

#### Stacy Juyeh Kim, M.D.

Assistant Professor of Radiology (primary appointment)
Assistant Professor of Medicine
Bachelor of Arts, University of Illinois at Chicago, 2009
Doctor of Medicine, University of Illinois at Chicago, 2013

#### Stephanie Hewon Kim, Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Massachusetts Institute of Technology, 2006
Doctor of Philosophy, University of Chicago, 2013
Doctor of Medicine, University of Chicago, 2015



#### Thomas Kim, M.B.A., M.D.

Assistant Professor of Radiology (primary appointment)
Doctor of Medicine, Washington University in St Louis, 1988
Master of Business Administration, Northwestern University, 2013

#### Katerina Sunn Konstantinoff, M.D.

Assistant Professor of Radiology (primary appointment)

Doctor of Medicine, Washington University in St Louis, 2018

# Veera Venkata Satyanarayana Kothapalli, M.S., Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, Andhra University, 2005
Master of Science, Royal Institute of Technology, 2010
Doctor of Philosophy, Royal Institute of Technology, 2015

#### Lawrence M Kotner, M.D.

Associate Professor Emeritus of Radiology Bachelor of Arts, Washington University in St Louis, 1965 Doctor of Medicine, Washington University in St Louis, 1968

#### Shinjini Kundu, M.S., Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Assistant Professor of Electrical & System Engineering
Bachelor of Science, Stanford University, 2011
Master of Science, Stanford University, 2011
Doctor of Philosophy, Carnegie Mellon University, 2016
Doctor of Medicine, University of Pittsburgh Medical Center-Health
System, 2017

#### Kacie Kuykendall, M.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Arts, Vanderbilt University, 2013 Doctor of Medicine, Rush University, 2017

# L

#### Richard Laforest, M.S., Ph.D.

Professor of Radiology (primary appointment) Bachelor of Arts, University of Laval, 1989 Master of Science, University of Laval, 1991 Doctor of Philosophy, University of Laval, 1994

# Michael H Lanier, Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Baccalaureatus, Washington University in St Louis, 2006
Doctor of Philosophy, Washington University in St Louis, 2017
Doctor of Medicine, Washington University in St Louis, 2017

#### John Joowon Lee, Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Brown University, 1990
Doctor of Philosophy, University of Illinois at Urbana-Champaign, 1998
Doctor of Medicine, University of Illinois at Urbana-Champaign, 2002

#### Michelle Lee, M.D.

Professor of Radiology (primary appointment)
Bachelor of Science, University of Wisconsin Madison, 1993
Doctor of Medicine, Northwestern University, 2001

#### David Alan Leitman, M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, Lindenwood University, 2006 Doctor of Medicine, A T Still University of Health Sciences, 2010

# Paula M Leiva, M.D.

Assistant Professor of Radiology (primary appointment)
Doctor of Medicine, Univ Nacional de Cuyo, 2000

#### Yongjian Liu, M.S., Ph.D.

Professor of Radiology (primary appointment)
Bachelor of Science, Henan Normal University #######, 1997
Master of Science, Zhejiang University (National Che Kiang University)
(####), 2000

Doctor of Philosophy, University of Missouri Columbia, 2007

#### **David Loy**

Voluntary Clinical Associate Professor of Radiology

#### David Loy

Voluntary Clinical Instructor in Radiology

#### Daniel Ryder Ludwig, M.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, Brown University, 2009 Doctor of Medicine, University of Pittsburgh, 2014

#### Jose Marcio Luna, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Universidad Distrital Francisco José de Caldas,
2004

Master of Science, University of New Mexico-Main Campus, 2009 Doctor of Philosophy, University of New Mexico-Main Campus, 2014

# M

# Carlos Andres Mahia, M.D.

Assistant Professor of Radiology (primary appointment)

Doctor of Medicine, Universidad Nacional de Cuyo Mendoza, 2001

# Mariam Akbar Malik, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Minnesota Twin Cities, 2007
Doctor of Medicine, Saint Louis University, 2013

# Christopher Devin Malone, M.D.

Associate Professor of Radiology (primary appointment) Associate Professor of Surgery Bachelor of Science, Bucknell University, 2005 Doctor of Medicine, Tulane University, 2011

#### Naganathan B Mani, M.S., MBBS

Associate Professor of Radiology (primary appointment)
Associate Professor of Surgery (General Surgery)
Foreign MD equivalent, Tamilnadu Medical University, 1995
Master of Science, PGIMER, 1999

# Jaimee Elizabeth Mannix, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, William Jewell College, 2011
Doctor of Medicine, Creighton University, 2015

#### Daniel Scott Marcus, Ph.D.

Professor of Radiology (primary appointment)
Bachelor of Arts, Washington University in St Louis, 1995
Bachelor of Science, Washington University in St Louis, 1995



Doctor of Philosophy, Washington University in St Louis, 2001

# Scott Allen Marek, Ph.D.

Assistant Professor of Radiology (primary appointment) Assistant Professor of Psychiatry Bachelor of Science, John Carroll University, 2012 Doctor of Philosophy, University of Pittsburgh, 2017

#### Parisa Mazaheri, M.D.

Assistant Professor of Radiology (primary appointment) Doctor of Medicine, Tehran University, 2012

#### William H McAlister, M.D.

Professor of Radiology (primary appointment) Professor of Pediatrics Bachelor of Science, Wayne State University, 1950 Doctor of Medicine, Wayne State University, 1954

#### Elizabeth G. McFarland, M.D.

Professor of Radiology (primary appointment) Doctor of Medicine, University of San Diego, 1987

#### Nicole S McKay, M.S., Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Arts, University of Auckland, 2008
Bachelor of Science, University of Auckland, 2010
Master of Science, University of Auckland, 2013
Doctor of Philosophy, University of Auckland, 2019

#### Robert Carolin McKinstry, M.S., Ph.D., M.D.

Professor of Radiology (primary appointment)
William R. Orthwein, Jr. and Laura Rand Orthwein Chair in Radiology
and Pediatrics

Senior Vice Chair - Division of Diagnostic Imaging at MIR Professor of Pediatrics

Bachelor of Science, Boston University, 1984

Master of Science, Massachusetts Institute of Technology, 1986 Doctor of Philosophy, Massachusetts Institute of Technology, 1991 Doctor of Medicine, Harvard University, 1992

# Amanda Laleh Mehrsheikh

Assistant Professor of Radiology (primary appointment)

#### Vincent Michael Mellnick, M.D.

Professor of Radiology (primary appointment)
Section Chief - Abdominal
Bachelor of Arts, University of Notre Dame, 2002
Doctor of Medicine, University of Texas Houston, 2006

# Christine Onsy Menias, M.D.

Voluntary Research Professor of Radiology Bachelor of Science, Marquette University, 1990 Doctor of Medicine, George Washington University, 1995

# Joyce Chipo Mhlanga, M.D.

Associate Professor of Radiology (primary appointment) Doctor of Medicine, University of Liverpool, 2000

# Ali Yusuf Mian, M.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Colby College, 1999
Doctor of Medicine, Virginia Commonwealth University, 2008

null, Yale University, null

# William D Middleton, M.D.

Professor of Radiology (primary appointment) Bachelor of Science, Duke University, 1977 Doctor of Medicine, Duke University, 1981

#### Mikhail V Milchenko, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment) Master of Science, Moscow State University, 1999 Doctor of Philosophy, Louisiana Tech University, 2005

#### Michelle M Miller-Thomas, M.D.

Professor of Radiology (primary appointment)
Vice Chair of Faculty Development
Bachelor of Science, California Institute of Technology, 1998
Doctor of Medicine, Saint Louis University, 2002

#### Aaron Joseph Mintz, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Stanford University, 2005
Doctor of Medicine, Washington University in St Louis, 2013

#### Stephen M Moerlein, M.A., Pharm.D., Ph.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Biochemistry and Molecular Biophysics
Bachelor of Science, University of Illinois at Chicago, 1976
Master of Arts, Washington University in St Louis, 1979
Doctor of Philosophy, Washington University in St Louis, 1982
Doctor of Pharmacy, University of Florida, 2008

# Lisa B Mogil, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Columbia University, 2012
Doctor of Medicine, State University of New York at Buffalo, 2017

#### Barbara S Monsees, M.D.

Professor Emeritus of Radiology Bachelor of Arts, Brandeis University, 1971 Doctor of Medicine, Washington University in St Louis, 1975

#### Stephen M Moore, M.E.E.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Washington University in St Louis, 1981
Master of Electrical Engineering, Washington University in St Louis, 1984

# Christopher J Moran, M.D.

Professor of Radiology (primary appointment) Professor of Neurological Surgery Bachelor of Science, University of Notre Dame, 1970 Doctor of Medicine, Saint Louis University, 1974

# Carrie Christina Morrison, M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, University of Missouri Columbia, 1982 Doctor of Medicine, University of Iowa, 1991



#### Ayman Nada, M.M.Sc., M.D., MBChB

Assistant Professor of Radiology (primary appointment)

Washington University in St. Louis

Bachelor of Medicine and Bachelor of Surgery, Cairo University, 2010 Master of Medical Science, Cairo University, 2014 Doctor of Medicine, Cairo University, 2017

#### Ying Hwey Nai, Ph.D., B.Eng

Assistant Professor of Radiology (primary appointment)
Bachelor of Engineering, Nanyang Technological University, 2008
Doctor of Philosophy, Tohoku University, 2017

#### Kelby Brett Napier, Ph.D., M.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Eastern Kentucky University, 2001
Doctor of Philosophy, University of Louisville, 2006
Doctor of Medicine, University of Louisville, 2008

#### Vamsi R. Narra, M.B.A., M.D.

Professor of Radiology (primary appointment)
Senior Vice Chair for Clinical Imaging Informatics and New Clinical
Business Development
Poster of Medicine, Osmania Medical College, 1990

Doctor of Medicine, Osmania Medical College, 1990 Master of Business Administration, Washington University in St Louis, 2015

#### Adam David Naylor, M.D., B.Eng

Assistant Professor of Radiology (primary appointment)
Bachelor of Engineering, University of Michigan Ann Arbor, 2013
Doctor of Medicine, Washington University in St Louis, 2018

#### Arash Nazeri, M.D.

Assistant Professor of Radiology (primary appointment)

Doctor of Medicine, Tehran University of Medical Sciences, 2013

#### Michael Lee Nickels, Ph.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Northern Kentucky University, 2001
Doctor of Philosophy, University of Illinois at Urbana-Champaign, 2007

#### Benjamin Edward Northrup, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Arts, Truman State University (Formerly Northeast Missouri
State University), 2004

Doctor of Medicine, Dartmouth College, 2009



#### Megan O'Brien

Voluntary Clinical Instructor in Radiology

#### Lisa M Oakley, M.D.

Assistant Professor of Radiology (Pending Executive Faculty Approval) (primary appointment)

Bachelor of Science, Stanford University, 1988 Doctor of Medicine, Duke University, 1992



#### Ashwin Singh Parihar, M.D., MBBS

Assistant Professor of Radiology (primary appointment)
Foreign MD equivalent, Uttarakhand Technical University, 2014
Doctor of Medicine, PGIMER, 2019

#### Matthew S Parsons, M.D.

Professor of Radiology (primary appointment)
Bachelor of Arts, Miami University-Oxford, 1995
Doctor of Medicine, University of Cincinnati-Main Campus, 2000

#### Daniel D Picus, M.D.

Professor of Radiology (primary appointment)
Senior Vice Chair - Special Projects
Professor of Surgery (General Surgery)
Bachelor of Science, University of Illinois at Urbana-Champaign, 1977
Doctor of Medicine, University of Chicago, 1981

#### Maria Rosana Ponisio, M.D.

Associate Professor of Radiology (primary appointment) Doctor of Medicine, La Plata University, 1990

#### Vikas Prasad, MBBS

Associate Professor of Radiology (primary appointment)
Foreign MD equivalent, Gandhi Memorial Science College (G.G.M.
Science College), 2001

#### Hilton I Price, M.D.

Voluntary Clinical Instructor in Radiology Doctor of Medicine, University of the Witwatersrand, 1972

#### Linda Ruth Proctor, M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, University of Pennsylvania, 1985 Doctor of Medicine, University of Pennsylvania, 1989



#### Lin Qiu, Ph.D.

Instructor in Radiology (primary appointment)
Doctor of Philosophy, East China Normal University (######), 2014

# James D Quirk, M.A., Ph.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Massachusetts Institute of Technology, 1994
Master of Arts, Washington University in St Louis, 1998
Doctor of Philosophy, Washington University in St Louis, 2001



#### Amir Ata Rahnemai Azar

Assistant Professor of Radiology (primary appointment)

#### Marcus E Raichle, M.D.

Professor of Radiology (primary appointment)
Alan A and Edith L Wolff Distinguished Professor of Medicine
Professor of Neuroscience
Professor of Neurology
Professor of Psychological & Brain Sciences

Professor of Psychological & Brain Sciences
Professor of Biomedical Engineering
Bachelor of Science, University of Washington, 1960
Doctor of Medicine, University of Washington, 1964

#### Cyrus A Raji, Ph.D., M.D.

Associate Professor of Radiology (primary appointment) Associate Professor of Neurology Bachelor of Arts, University of Pittsburgh, 2004 Bachelor of Science, University of Pittsburgh, 2004



Doctor of Philosophy, University of Pittsburgh, 2009 Doctor of Medicine, University of Pittsburgh, 2010

# Mohamed Zakariya Rajput, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Augustana College Illinois, 2009
Doctor of Medicine, Loyola University Chicago, 2013

#### Constantine A Raptis, M.D.

Professor of Radiology (primary appointment)
Associate Professor of Medicine
Bachelor of Science, University of Chicago, 1999
Doctor of Medicine, University of Pennsylvania, 2004

# Demetrios Andreas Raptis, M.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Medicine
Associate Professor of Pediatrics
Bachelor of Science, University of Chicago, 2005
Doctor of Medicine, Case Western Reserve University, 2011

#### Ryan Vittal Raut, Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, University of Wisconsin, 2016
Doctor of Philosophy, Washington University in St Louis, 2021

#### Nanette Rahee Reed, M.D.

Assistant Professor of Radiology Bachelor of Science, University of Notre Dame, 2000 Doctor of Medicine, Baylor College of Medicine, 2004

#### David E Reichert, Ph.D.

Voluntary Research Associate Professor of Radiology Voluntary Teaching Associate Professor Bachelor of Science, Roanoke College, 1986 Doctor of Philosophy, University of Illinois at Urbana-Champaign, 1994

#### Martin Nicholas Reis, M.D.

Associate Professor of Radiology (primary appointment) Bachelor of Science, Princeton University, 1994 Doctor of Medicine, Columbia University, 2000

# Michael Patrick Reiter, M.D., B.Eng

Instructor in Radiology (primary appointment)
Bachelor of Engineering, Villanova University, 1998
Doctor of Medicine, Rust College, 2002

# Patricia Manuela Ribeiro Pereira, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, Universidade de Aveiro, 2010 Master of Science, Universidade de Aveiro, 2012 Doctor of Philosophy, Universidade de Aveiro, 2016

# Nassir Rostambeigi, M.S., M.D.

Associate Professor of Radiology (primary appointment) Associate Professor of Surgery (General Surgery) Doctor of Medicine, Tehran University, 2005 Master of Science, Monash University, 2008

#### Henry D Royal, M.D.

Professor of Radiology (primary appointment) Bachelor of Science, Providence College, 1970 Doctor of Medicine, Saint Louis University, 1974



#### Steven Sauk, M.S., M.D.

Associate Professor of Radiology (primary appointment)
Section Chief - Interventional
Bachelor of Science, Yale University, 2004
Master of Science, Yale University, 2004
Doctor of Medicine, University of California Los Angeles, 2008

#### Floyd E Scales, M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, University of Texas Austin, 1974 Doctor of Medicine, University of Texas Southwest, 1979

# Thomas Hellmut Schindler, Ph.D., M.D.

Professor of Radiology (primary appointment)
Professor of Medicine
Doctor of Medicine, University of Leipzig, 1995
Doctor of Philosophy, University of Geneva, 2009

# Sally J Schwarz, M.S.

Professor Emerita of Radiology Bachelor of Science, University of Iowa, 1971 Master of Science, University of Southern California, 1976

#### Janice Semenkovich, M.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Yale University, 1977
Doctor of Medicine, Washington University in St Louis, 1981

# Ikbal Sencan Egilmez, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Fatih University, 2007
Master of Science, University of California Los Angeles, 2010
Doctor of Philosophy, University of California Los Angeles, 2013

#### Noah McKimmey Seymore, M.D.

Voluntary Clinical Assistant Professor of Radiology Bachelor of Science, University of North Carolina at Chapel Hill, 2011 Doctor of Medicine, East Carolina University, 2015

#### Gary D Shackelford, M.D.

Professor Emeritus of Radiology Bachelor of Arts, Northwestern University, 1964 Doctor of Medicine, Washington University in St Louis, 1968

#### Vijay Sharma, M.S., Ph.D.

Professor of Radiology (primary appointment) Bachelor of Science, Panjab University, 1980 Master of Science, Panjab University, 1983 Doctor of Philosophy, Panjab University, 1987

# Anup Shashindra Shetty, M.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Arts, Duke University, 2003
Doctor of Medicine, University of Texas Southwest, 2007

#### Elizabeth Sheybani, M.D.

Instructor in Radiology (primary appointment)
Doctor of Medicine, Washington University in St Louis, 2008



# Joshua S Shimony, Ph.D., M.D.

Professor of Radiology (primary appointment)
Bachelor of Science, Technion Israel Institute of Technology, 1982
Doctor of Philosophy, University of Tennessee, 1988
Doctor of Medicine, University of Illinois at Urbana-Champaign, 1995

#### Kooresh Isaac Shoghi, M.S., Ph.D.

Professor of Radiology (primary appointment)
Bachelor of Science, University of California Los Angeles, 1996
Master of Science, University of California Los Angeles, 2000
Doctor of Philosophy, University of California Los Angeles, 2005

#### Monica Shokeen, Ph.D.

Associate Professor of Radiology (primary appointment)
Vice Chair of Diversity, Equity, and Justice
Associate Professor of Medicine
Doctor of Philosophy, Washington University in St Louis, 2006

#### Ryan Gregory Short, M.D.

Associate Professor of Radiology (primary appointment)
Assistant Professor of Medicine
Bachelor of Science, Cedarville University, 2008
Doctor of Medicine, Ohio State University-Main Campus, 2013

#### Hui Hua Shu, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Arts, University of Missouri Kansas City, 1986
Doctor of Medicine, University of Missouri Kansas City, 1987

# Barry Alan Siegel, M.D.

Professor of Radiology (primary appointment)
Professor of Medicine
Bachelor of Arts, Washington University in St Louis, 1966
Doctor of Medicine, Washington University in St Louis, 1969

# Cary Lynn Siegel, M.D.

Professor of Radiology (primary appointment) Bachelor of Science, Davenport University, 1983 Doctor of Medicine, Davenport University, 1987

# Marilyn J Siegel, M.D.

Professor of Radiology (primary appointment)
Professor of Radiology in Pediatrics
Bachelor of Arts, Washington University in St Louis, 1965
Doctor of Medicine, State University of New York, 1969

#### Jothilingam Sivapackiam, M.S., Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, Madurai Kamaraj University, 1996
Master of Science, Madurai Kamaraj University, 1998
Doctor of Philosophy, Pondicherry University, 2004

# Emily Louise Smith, M.D.

Assistant Professor Emeritus of Radiology Bachelor of Arts, Washington University in St Louis, 1964 Doctor of Medicine, Washington University in St Louis, 1968

# Abraham Z Snyder, Ph.D., M.D.

Professor of Radiology (primary appointment)
Associate Professor of Neurology
Bachelor of Arts, Columbia University, 1970
Doctor of Philosophy, Rockefeller University, 1977

Doctor of Medicine, State University of New York, 1981

# Sheng-Kwei Song, M.S., Ph.D.

Professor of Radiology (primary appointment)
Bachelor of Science, Tamkang University, 1981
Master of Science, University of Alabama in Tuscaloosa, 1986
Doctor of Philosophy, Washington University in St Louis, 1990

#### Aristeidis Sotiras, M.E.E., M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Assistant Professor of Electrical and Systems Engineering
Master of Electrical Engineering, National Technical University of
Athens, 2006

Master of Science, Ecole Polytechnique, 2007 Doctor of Philosophy, Ecole Centrale Paris, 2011

#### **Richard Southard**

Instructor in Radiology (primary appointment)

# Robert Peter Stachecki, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of Notre Dame, 2003
Doctor of Medicine, Georgetown University, 2007

#### James G Stewart, M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, University of Wisconsin, 1980 Doctor of Medicine, Mayo Clinic College of Medicine and Science, 1984

#### Benjamin S Strnad, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Arts, University of Texas Austin, 2010
Doctor of Medicine, University of Texas Medical School Houston, 2014

#### Alexander L Sukstansky, M.S., D.Sc., Ph.D.

Associate Professor of Radiology (primary appointment) Master of Science, Kharkov State University, 1971 Doctor of Philosophy, Donetsk State University, 1980 Doctor of Science, Donetsk State University, 1991

# Noah Susman, M.D.

Professor Emeritus of Clinical Radiology Bachelor of Arts, Washington University in St Louis, 1948 Doctor of Medicine, Washington University in St Louis, 1952

# Christopher A. Swingle, M.B.A., D.O.

Assistant Professor of Radiology (primary appointment)
Bachelor of Arts, University of Kansas, 1996
Doctor of Osteopathic Medicine, Kansas City University of Medicine and
Biosciences. 2000

 ${\it Master of Business Administration, Washington University in St Louis, } \\ 2023$ 

# $\mathbf{T}$

#### Yuan-Chuan Tai, M.E.E., Ph.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Electrical and Systems Engineering
Senior Vice Chair of Radiology
Bachelor of Science, National Tsing Hua University, 1988
Master of Electrical Engineering, University of Texas Arlington, 1992



Doctor of Philosophy, University of California Los Angeles, 1998

# Rui Tang, M.A., Ph.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, University of Science and Technology of China (##
######), 2002

Master of Arts, Washington University in St Louis, 2004 Doctor of Philosophy, Washington University in St Louis, 2009

#### Ting Y Tao, Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Section Chief - Pediatrics
Bachelor of Science, Washington University in St Louis, 2

Bachelor of Science, Washington University in St Louis, 2000 Doctor of Philosophy, Washington University in St Louis, 2008 Doctor of Medicine, Washington University in St Louis, 2008

#### Sharlene A Teefey, M.D.

Professor Emeritus of Radiology Doctor of Medicine, University of Hawaii at Manoa, 1980

#### Matthew Allan Thomas, Ph.D.

Assistant Professor of Radiology (primary appointment)

Doctor of Philosophy, University of Arkansas at Little Rock, 2012

#### Daniel Lyndon Jaffe Thorek, Ph.D.

Associate Professor of Radiology (primary appointment) Bachelor of Science, University of Toronto, 2004 Doctor of Philosophy, University of Pennsylvania, 2010

#### Christopher O Thornton, M.B.A., M.D.

Voluntary Clinical Instructor in Radiology Bachelor of Science, University of Missouri Kansas City, 1992 Doctor of Medicine, University of Missouri Kansas City, 1994 Master of Business Administration, Washington University in St Louis, 2019

#### Richard Tsai, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of California San Diego, 2008
Doctor of Medicine, Saint Louis University, 2012

#### Zhude Tu, M.S., Ph.D.

Professor of Radiology (primary appointment)
Bachelor of Science, Beijing Normal University (######), 1988
Doctor of Philosophy, Beijing Normal University (######), 1995
Master of Science, University of Saint Thomas, 2000



#### Alexander Ushinsky, M.D.

Assistant Professor of Radiology (primary appointment)
Assistant Professor of Surgery (General Surgery)
Bachelor of Science, University of California San Diego, 2010
Doctor of Medicine, University of California San Diego, 2014



#### Theodore Louis Vander Velde, M.D.

Assistant Professor of Radiology (primary appointment) Bachelor of Science, Calvin College, 1989 Doctor of Medicine, Wayne State University, 1993

#### Wenzel G Vas, M.D.

Voluntary Clinical Instructor in Radiology Doctor of Medicine, St. John's Medical College, 1973

#### Suresh Vedantham, M.D.

Professor of Radiology (primary appointment) Professor of Surgery (General Surgery) Bachelor of Arts, Northwestern University, 1988 Doctor of Medicine, University of Chicago, 1992

#### Andrei G Vlassenko, Ph.D., M.D.

Associate Professor of Radiology (primary appointment)
Doctor of Medicine, Moscow Med Stomatology Inst, 1987
Doctor of Philosophy, Institute of Neurology, 1991

#### Katie Dieu Thu Vo, M.D.

Professor of Radiology (primary appointment)
Section Chief - Neuroradiology
Bachelor of Arts, Wellesley College, 1986
Bachelor of Science, Massachusetts Institute of Technology, 1986
Doctor of Medicine, Cornell University, 1991

#### Cornelius Jan von Morze, Ph.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, University of California Berkeley, 2001
Doctor of Philosophy, University of California San Francisco, 2008



#### Richard L Wahl, M.D.

Professor of Radiology (primary appointment)
Professor of Radiation Oncology
Bachelor of Arts, Wartburg College, 1974
Doctor of Medicine, Washington University in St Louis, 1978

# Jerold W Wallis, M.S., M.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Biomedical Engineering
Bachelor of Science, Yale University, 1976
Master of Science, Stanford University, 1981
Doctor of Medicine, Stanford University, 1981

# Liang Wang, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Tianjin Medical University (######), 1994
Doctor of Medicine, Tianjin Medical University (######), 1994

#### Qing Wang, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Changsha University of Science and Technology (######), 1999

Master of Science, Northeast Electrical University or Northeast Dianli University (######), 2002

Doctor of Philosophy, Washington University in St Louis, 2011

#### Shuo Wang, Ph.D.

Associate Professor of Radiology (primary appointment)
Associate Professor of Neurological Surgery
Doctor of Philosophy, California Institute of Technology, 2014

#### Wei Wang, M.S., Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)



Doctor of Medicine, Peking University Health Science Center (#######), 1999

Master of Science, University of Tennessee, 2002 Doctor of Philosophy, Washington University in St Louis, 2006

#### Danielle Marie Weems, M.S., M.D.

Instructor in Radiology (primary appointment)
Bachelor of Science, University of Mississippi, 1994
Master of Science, Washington University in St Louis, 1996
Doctor of Medicine, Washington University in St Louis, 2003

#### Muriah Dawn Wheelock, Ph.D.

Assistant Professor of Radiology (primary appointment)
Assistant Professor of Statistics and Data Science (Courtesy Affiliation)
Bachelor of Arts, University of Alabama in Tuscaloosa, 2010
Doctor of Philosophy, University of Alabama in Tuscaloosa, 2016

#### Kimberly N Wiele, M.D.

Professor of Radiology (primary appointment)
Bachelor of Arts, University of Missouri Kansas City, 1981
Doctor of Medicine, University of Missouri Kansas City, 1981

#### Franz J Wippold, M.D.

Professor Emeritus of Radiology Bachelor of Arts, Westminster College, 1973 Doctor of Medicine, Saint Louis University, 1977

#### Jonathan Rodger Wood, M.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Northwestern University, 2004
Doctor of Medicine, University of Rochester, 2009

#### Pamela K Woodard, M.D.

Professor of Radiology (primary appointment)
Elizabeth E Mallinckrodt Professor of Radiology
Head of the Department of Radiology
Director of The Edward Mallinckrodt Institute of Radiology
Professor of Medicine
Professor of Pediatrics
Professor of Biomedical Engineering
Bachelor of Arts, Duke University, 1986
Doctor of Medicine, Duke University, 1990



#### Jinbin Xu, M.Eng., Ph.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Taiyuan University of Technology (######), 1991
Master of Engineering, Taiyuan University of Technology (######), 1994
Doctor of Philosophy, Taiyuan University of Technology (######), 1998



# Dmitriy A Yablonskiy, M.S., D.Sc., Ph.D.

Professor of Radiology (primary appointment)
Master of Science, Kharkov State University, 1970
Doctor of Philosophy, Institute for Physics and Eng, 1973
Doctor of Science, Institute for Physics and Eng, 1981



#### Hanwen Zhang, M.S., Ph.D.

Associate Professor of Radiology (primary appointment)
Bachelor of Science, Lanzhou University (####), 1993
Master of Science, China Institute of Atomic Energy, 2000
Doctor of Philosophy, University of Basel, 2005

#### Zhongwei Zhang, Ph.D., M.D.

Assistant Professor of Radiology (primary appointment)
Doctor of Medicine, Rowan College at Burlington County, 2000
Doctor of Philosophy, Sun Yat-Sen University (####), 2009

#### Alexander Zheleznyak, M.S.

Instructor in Radiology (Pending Dean Approval) (primary appointment)

Bachelor of Arts, Washington University in St Louis, 1983 Master of Science, University of Missouri in St Louis, 1997

#### Jie Zheng, M.S., Ph.D.

Professor of Radiology (primary appointment)
Bachelor of Science, Beijing University, 1986
Master of Science, University of Cincinnati-Main Campus, 1992
Doctor of Philosophy, University of Cincinnati-Main Campus, 1994

#### Dong Zhou, M.S., Ph.D.

Assistant Professor of Radiology (primary appointment)
Bachelor of Science, Shandong University (####), 1990
Master of Science, Shandong University (####), 1995
Doctor of Philosophy, Washington University in St Louis, 2004

# **Research Electives**

# **Radiology Research Electives**

During the fourth year, opportunities exist for many varieties of advanced clinical or research experiences.

Interested students should contact the appropriate individual in each division regarding the types of research projects available.

# David Ballard, MD

Abdominal Imaging Section, Mallinckrodt Institute Radiology Phone: 314-362-2928 davidballard@wustl.edu

Dr. Ballard's lab is engaged in clinical and translation 3D printing research with 3D-printed models for procedural planning, medical devices, and medical devices/implants impregnated with bioactive compounds. He is also active in clinical research in a broad scope of abdominal malignancies and infectious processes. Dr. Ballard is willing to mentor trainees and students at all levels for research in clinical 3D printing, translational 3D printing, clinical radiology, and radiology education.

# Washington University in St. Louis

# Tom Conturo, MD, PhD

East Building, 2nd Floor, Rm 2120

Phone: 314-362-8421

Magnetic resonance (MR) imaging is a noninvasive means of providing images of the human body at high spatial resolution and contrast sensitivity. The contrast can be manipulated to depend on different properties of tissue water, enabling the study of a variety of biological processes. In some cases, endogenous or exogenous paramagnetic MR contrast agents are used to alter the MRI contrast by perturbing the tissue water environment. Recently, new MRI hardware has also enabled techniques having high temporal resolution. Using the unique contrast properties of MRI and the higher spatial/temporal resolution, noninvasive techniques can be devised to study neuronal activity, tissue perfusion, water mobility (diffusion), and neuronal fiber pathways in the human brain. The goals of Dr. Conturo's research lab are to develop and apply MR imaging techniques for quantitative imaging of cerebral perfusion, brain function, water diffusion, and neuronal fiber pathways. These techniques utilize the MR signal effects of exogenous bolus-injected contrast agents, endogenous hemoglobin, and microscopic water diffusion. Long-term goals are to apply these methodologies toward imaging and understanding tissue structure, function, and physiology in the brain and other organs in normal and abnormal conditions. The approaches that are used in this laboratory cover a broad range of areas, including MRI physics, MRI pulse sequence development, theoretical derivations, computer simulations, image-processing, computer graphics, custom contrast agent design and syntheois, phantom studies, animal models, human studies, clinical patient studies, and comparison with other imaging modalities.

# Farrokh Dehdashti, MD

Nuclear Medicine PET Facility, 10th Floor, Mallinckrodt Institute of Radiology

Phone: 314-362-1474

Positron emission tomography (PET) is an imaging technique that produces images reflective of biochemical processes of normal and abnormal tissues. PET is complementary to anatomic imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI). The ability of PET to quantify fundamental processes, such as blood flow, oxygen metabolism, glucose metabolism, and receptor density, makes this technique very desirable to both investigators and clinicians. Dr. Dehdashti's research utilizes the conventional PET radiopharmaceutical, F-18 fluorodeoxyglucose (FDG), as well as a variety of unique PET radiopharmaceuticals such as Cu-64-diacetyl-bis(N4-methylthiosemicarbazone) (Cu-64 ATSM), a hypoxic imaging tracer, and 18F-labeled 3'-deoxy-3'fluorothymidine (FLT), a proliferative imaging tracer. Below is a partial list of the research projects relating to PET: (1) PET assessment of progesterone receptors in patients with newly diagnosed breast cancer with a new progesterone-receptor imaging tracer, 21-[18F]Fluoro-16,17-[(R)-1'-furylmethylidene)dioxy]-19-norpregn-4-ene-3,20 dione (FFNP); (2) assessment of cell proliferation with a new tracer, N-(4-(6,7-dimethoxy-3,4-dihydroisoquinolin-2(1H)-yl)butyl)-2 (2-[18F]fluoroethoxy)-5-methylbenzamide ([18F]3c), also called [18F]ISO-1 by

imaging sigma receptors in patients with various solid cancers; (3) PET assessment of tumor hypoxia using 64Cu-ATSM in patients with cervical cancer (the major goal of this project is to predict prognosis); (4) FDG-PET/CT study in cervical cancer to evaluate the change in tumor FDG heterogeneity and SUVmax during chemoradiation and whether these changes are predictive of response to therapy; (5) PET using [18F]FHBG (9-[4-fluoro-3-hydroxymethyl-butyl]guanine), analog of Penciclovir, an acycloguanosine derivative and antiviral drug, for possible tracking of GvHD in patients who were prior recipients of unrelated allogeneic bone marrow transplant for any hematologic malignancy; and (6) FLT-PET/CT to assess tumor cell proliferation in patient must have histologically or cytologically confirmed ER+ stage IV or metastatic invasive breast cancer.

#### Rob J. Gropler, MD

East Building, Room 1307 Phone: 314-747-3878

The focus of our lab is on cardiovascular imaging research. The research in the Cardiovascular Imaging Laboratory is designed to better understand the relationship between myocardial perfusion, intermediary metabolism and mechanical function in both normal and abnormal cardiac states. The research involves the integration of several imaging techniques with diverse strengths such as PET, MRI, CT and echocardiography. The success of the research requires several paths of investigation to be pursued in parallel. For example, in order to image the biologic processes of interest requires continued technical developments for each of the imaging methods listed above. There are ongoing efforts to permit more accurate PET measurements of myocardial substrate metabolism. They include the development of novel tracers of extracted substrates, the development of acquisition schemes to assess endogenous substrate metabolism, and the validation of mathematical approaches to correlate the tracer kinetics with the underlying metabolic processes. These studies are being pursued in small and large animal models and then in humans. Another example includes the current efforts to develop approaches to image the coronary arteries noninvasively by MRI using novel contrast agents and acquisition schemes. In addition, techniques are being developed to permit MR guided interventions on the coronary arteries. This undertaking includes the development of novel guide-wire tracking and catheter tracking schemes using both passive and active approaches. Finally, to permit assessments of myocardial oxygenation and thus, perfusion, techniques are being developed to permit BOLD imaging the myocardium. Another path of the research is to determine how this perfusional-metabolic-functional relation is altered by normal life changes and then determine how disease states alter the relationship. For example, both PET and echocardiography are being used to characterize the age- and gender-related changes on myocardial perfusion, substrate metabolism and function. To study the relationship in disease states, similar studies are being performed in patients with diabetes and obesity. A third path is to determine the mechanisms responsible for these changes in this metabolic-functional relation and identify potential interventions that may reverse or ameliorate them. In this regard, similar imaging studies are being performed to determine the importance of nitric oxide and the PPARa system in defining this metabolic-functional relation.

# Washington University in St. Louis

#### Stephen M. Moerlein, PharmD, PhD

East Building, 1st Floor Phone: 314-362-8466

Our research interests lie in the general area of labeled tracer development for nuclear medicine imaging, especially positronemission tomography (PET). Developmental effort begins with synthesis of target structures, preclinical screening that involves in vitro biochemistry and pharmacological testing, and ex vivo biodistribution studies in small animals. Promising tracers are then examined by in vivo imaging of animal subjects and tracer kinetic modeling. The final step in the transition of a radiochemical into a labeled drug takes into account radiation dosimetry, pharmaceutical quality, and the development of automated production and GMP production processes to streamline delivery to human subjects. Each of these aspects of radiopharmaceutical development are investigated, with a primary emphasis in novel agents for evaluation of pathological processes in neurology and oncology.

#### Marc Raichle, MD

East Building, 2nd Floor Phone: 314-362-6907

We use functional imaging techniques — both positron emission tomography and functional magnetic resonance imaging — to study the normal organization of the human brain and the effect of selected diseases. The research focuses on both the methodology (imaging and experimental) and specific questions in cognitive neuroscience.

# Courses

For more information, contact Michelle Miller-Thomas, MD, Coordinator of Radiology Medical Student Education, at miller-thomasm@wustl.edu or 314-362-5949.

# **RADIOL 8005 General Radiology (Clinical Elective)**

This four-week Radiology elective allows students to rotate through four of the following Radiology services: Pediatrics, Abdomen, Musculoskeletal, Neuroradiology, Nuclear Medicine, Emergency Radiology, Mammography, Chest, and Interventional Radiology. The primary course objectives are to familiarize students with the scope of diagnostic and interventional radiology, including the consulting role radiologists provide to primary care and specialty providers; risks/ benefits and cost effectiveness of radiologic examinations; guidelines for ordering common studies; and the radiologic appearance and workup of specific disease entities. Students spend most of each day in the Radiology reading rooms with residents, fellows, and faculty for interactive teaching at the workstation, driven by daily clinical cases. Students will attend morning and noon didactic conferences with the residents. The students will have a primarily observational role in conferences and in the clinical setting. On Thursday afternoons, students will participate in an interactive conference led by a Radiology resident on a scheduled topic in Radiology. Prior to each Thursday conference, students are expected to view assigned lectures from the course material available online (WUSTL Box). On Friday afternoons, students will present an interesting case from the week in the format

of a PowerPoint presentation. All of the PowerPoint presentations will be submitted at the end of the rotation for grading. Students will also be evaluated on their preparedness and participation in the afternoon conferences.

Credit 4 units.

Typical periods offered: Medicine Year

#### RADIOL 8015 Clinical Nuclear Medicine (Clinical Elective)

The clinical service in Nuclear Medicine (NM) is divided into five sections: outpatient general NM, inpatient general NM, Positron Emission Tomography (PET), Pediatric NM studies, NM Cardiac studies, and radionuclide therapy. The recommended schedule will be to spend weeks 1 and 3 in the Center for Advanced Medicine/BJH North Campus (second floor), where the emphasis will be on outpatient general and pediatric Nuclear Medicine with some time in the PET reading room. Week 2 will be in South Campus (West Pavilion 9th floor) and split between inpatient general nuclear medicine, outside PET facilities (morning), cardiac NM services (afternoon), and radionuclide therapy. The schedule for Week 4 will be Monday to Wednesday Center for Advanced Medicine/BJH North Campus and Thursday to Friday on South Campus. This rotation's primary objective is to provide exposure to the full range of clinical nuclear medicine studies. Under the direct supervision of the NM attendings, the student in person (or via Zoom when in-person training is unavailable) will participate in planning and interpreting imaging studies for patients referred to the Division. An opportunity also exists to explore instrumentation techniques, including dedicated computer applications utilized to interpret NM studies. In addition to the clinical experience, the student will attend the NM daily morning conference, held via Zoom or in person from 8-9:00 am. Also, the student may attend the daily diagnostic radiology resident noon conference via Zoom or in-person from 12-1:00 pm. The student will also be able to participate in any conferences within the Department of Radiology and case management conferences where NM studies are discussed. The students are encouraged to prepare a case for the Friday follow-up conference under an NM faculty member's supervision during their rotation.

Credit 2 units.

Typical periods offered: Medicine Year

# RADIOL 8020 Interventional Radiology (Clinical Elective)

This elective is designed to give students in-depth exposure to and experience in all clinical and procedural aspects of interventional radiology including: patient evaluation and consultation, preparation of patients for procedures, performance of a wide range of vascular and non-vascular procedures, post-procedure patient management, and longitudinal patient follow-up. Students will actively participate in interventional procedures. Students will attend the departmental noon conference (daily) and morning section conferences including didactic lectures, Quality and Safety conference, Journal club, Interventional oncology conference, multidisciplinary liver tumor conference, and case conferences.

Credit 4 units.

Typical periods offered: Medicine Year

#### **RADIOL 8030 Cardiothoracic Radiology (Clinical Elective)**

A four-week elective emphasizing the interactions between cardiothoracic radiologists and the various clinical services, to include thoracic surgery, thoracic oncology, pediatric and adult cardiology, and pulmonary medicine. Learn to read chest radiographs at the viewing console while providing liaison with the clinical teams. This active elective will include the daily chest teaching conference and participation in weekly pulmonary case conference, thoracic surgery, thoracic oncology conferences, as well as the imaging of the heart using CT and MR. Students spend most of each day in the Radiology reading rooms with residents, fellows, and faculty for interactive teaching at the workstation, driven by daily clinical cases. The students will



have a primarily observational role in conferences and in the clinical setting and will attend morning and noon didactic conferences with the residents. The student will be expected to present a single case from what they have seen during the rotation at a 7AM teaching conference. Credit 4 units.

Typical periods offered: Medicine Year

# RADIOL 9100 Diagnostic Radiology Advanced Clinical Rotation (ACR)

As part of this 4 week Advanced Clinical Rotation in Diagnostic Radiology (DR-ACR), trainees will participate in interpretation and communicating results of various imaging modalities, such as radiography, CT, and ultrasound. Students will perform duties similar to a radiology resident dictating preliminary reports with an attending radiologist, determining most appropriate imaging examinations for patients, and communicating time-dependent results and alternative imaging strategies with ordering providers. There will be opportunity to observe the read out sessions of other residents to enhance the medical students exposure to numerous cases and familiarize them with the process of image interpretation. While the course material will be most applicable to students interested in Diagnostic Radiology, the resulting knowledge, skills and abilities in image interpretation and appropriateness will prove useful for students in any specialty who routinely order imaging examinations. All students will gain experience in interpretation of chest radiographs and based on their future residency of interest, the rotation will be customized to allow rotations in the various areas of diagnostic imaging to help set them up for success in their future residencies (for example neuroimaging). The DR-ACR will include image interpretation and performing examinations for adult patients at Barnes-Jewish Hospital in diagnostic reading rooms including inpatient, outpatient and emergency department. Credit 4 units.

Typical periods offered: Medicine Year

# RADIOL 9150 Interventional Radiology Advanced Clinical Rotation (ACR)

As part of this 4 week Advanced Clinical Rotation in Interventional Radiology (IR-ACR), trainees will participate in image-guided procedures as well as the care of patients before and after those procedures. The opportunities include participating in the care of patients requiring innovative IR treatments for their uterine fibroids, prostatic hypertrophy, peripheral arterial disease, venous disease, portal hypertension and numerous types of cancer. In addition, the increasing use of ultrasound, fluoroscopy and computer tomography to guide an ever increasing array of minimally invasive procedures means that trainees preparing for a broad array of specialties may benefit from this course. While the experiences will be most applicable to students interested in Interventional and Diagnostic Radiology, the resulting knowledge, skills and abilities will also likely prove useful for students interested in Critical Care, Emergency Medicine, Anesthesiology and multiple surgical specialties. The IR-ACR will include caring for adult and pediatric patients at Barnes-Jewish Hospital, Barnes-Jewish West County Hospital and St Louis Children's Hospital. The course will include inpatient as well as outpatient experiences.

Typical periods offered: Medicine Year