Department of Radiation Oncology

The Department of Radiation Oncology (http://radonc.wustl.edu) was created on July 1, 2001, after having been part of the Mallinckrodt Institute of Radiology for many decades. The department has a broad academic program that focuses on excellence in patient care and the development of new treatment paradigms; innovative research in each of the three divisions of clinical, physics and biology; and teaching for residents in radiation oncology, medical students and allied health personnel. The department is one of the largest, most academically balanced, and best equipped in the country, and it is responsible for all radiation therapy procedures at Washington University Medical Center. Our faculty have gained international recognition for innovative technological advances in physics and treatment planning, biological research, computer applications and clinical investigation.

Milestones

- Implementation of novel respiratory gating algorithms
- Development of biomarkers of DNA repair capacity of tumors
- Demonstrated the use of proton therapy
- Implementation of first Mevion S250 single-room proton therapy system
- Implementation of real-time MRI guidance for radiation therapy treatment with the ViewRay system (Real-time MRI guidance provides the ability to see tumors move in real time during a patient’s entire treatment process. This helps to ensure that tumor targets are hit and that healthy tissue is spared.)
- Acquisition of high-intensity focused ultrasound with MRI thermometry mapping

The Department of Radiation Oncology currently occupies a large and convenient clinical facility on the lower level of the Center for Advanced Medicine. The downtown clinical facility includes nine treatment rooms, three simulator rooms, and a brachytherapy center with two high dose rate treatment units. Furthermore, the facility houses the latest Gamma Knife, the ICON unit. We have advanced treatment planning computer systems for 3D conformal and intensity-modulated radiation therapy. We have six linear accelerators with on-board CT imaging capability. The brachytherapy suite includes capabilities for high dose rate remote afterloading and for image-guided permanent prostate seed implants. Interstitial and external hyperthermia treatments are also available. In 2013, we implemented a new type of proton treatment facility that involves the use of a superconducting synchrocyclotron mounted on a gantry. In addition, we implemented the world’s first MRI-guided radiation therapy treatment program in 2014. The department provides radiation therapy treatment at Siteman Cancer Center-South County, Siteman Cancer Center at Barnes-Jewish West County Hospital, Siteman Cancer Center at Christian Hospital, Siteman Cancer Center at Barnes-Jewish St. Peters Hospital, Siteman Cancer Center at Swansea and Alton Memorial Hospital.

Physics faculty have research laboratories and offices on the fourth floor of the Clinical Sciences Research Building plus designated areas adjacent to the clinical facility in the Center for Advanced Medicine building. The Radiation Biology laboratory and faculty offices are housed at the 4511 Forest Park Building, the Wohl Hospital Building and the BJC Institute of Health Building.

Website: http://radonc.wustl.edu

Degrees & Requirements

The Department of Radiation Oncology offers a Postdoctoral Medical Physics Certificate (http://bulletin.wustl.edu/grad/engineering/biomedical/certificate-medical-physics). Starting in fall 2019, the physics division of the Department of Radiation Oncology is offering a Master's of Science in Medical Physics (http://bulletin.wustl.edu/medicine/departments/medical-physics).

In addition, the Department of Radiation Oncology offers two courses that are open to students in the MD and MSTP (MD/PhD) programs and one course for first-year medical students.

Research

Please visit the Department of Radiation Oncology website (http://radonc.wustl.edu/research) for more information about current research in the department.

Faculty

Department Head
Dennis Hallahan, MD

Clerkship Director
Maria Thomas, MD

Director of Education in Medical Physics
Rao Khan, PhD

Visit our website for more information about our faculty (https://radonc.wustl.edu/faculty) and their appointments.

A

Christopher Abraham, MD, MS
Assistant Professor of Radiation Oncology (primary appointment)
Assistant Professor of Medicine
MD Saint Louis University 2006
BS Medical College Georgia 2005
MS Washington Univ in St. Louis 2011

Michael Bernard Altman, PHD
Assistant Professor of Radiation Oncology (primary appointment)
PHD University of Chicago 2010

Anthony John Apicelli III, PHD, MD
Assistant Professor of Radiation Oncology (primary appointment)
PHD Washington Univ in St. Louis 2009
BS Princeton University 1999
MD Washington Univ in St. Louis 2009

Abdelkareem Azab, PHD
Assistant Professor of Radiation Oncology (primary appointment)
PHD Hebrew University 2007

Shahed Nicolas Badiyan, MD
Assistant Professor of Radiation Oncology (primary appointment)
BS University of Texas Austin 2005
MD University of Texas Austin 2009

Kathy Baglan
Instructor in Clinical Radiation Oncology (primary appointment)

Brian Christopher Baumann, MD
Assistant Professor of Radiation Oncology (primary appointment)
BA Princeton University 2003
MD University of Pennsylvania 2012

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BE Washington Univ in St. Louis 1980
MS Washington Univ in St. Louis 1983
PHS Washington Univ in St. Louis 1990

Bin Cai, PHD
Assistant Professor of Radiation Oncology (primary appointment)
PHD Ohio University 2011

Jochen Cammin, PHD
Instructor in Radiation Oncology (primary appointment)
PHD University of Bonn 2004

Douglas Ford Caruthers, MS
Instructor in Radiation Oncology (primary appointment)
MS Univ Texas Health Science Ctr 2010

Aadel Ahmed Chaudhuri, MD
Assistant Professor of Radiation Oncology (primary appointment)
Assistant Professor of Computer Science and Engineering
Assistant Professor of Genetics
MD Stanford University 2013
BS Mass Inst of Technology (MIT) 2004

David T Curiel, MD, PHD
Distinguished Professor of Radiation Oncology (primary appointment)

Professor of Medicine
Professor of Obstetrics and Gynecology
MD Emory University 1982
PHD University of Groningen 2000
BA West Georgia College 1978

Mackenzie Daly, MD
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MD University of MO Kansas City 2005

Arash Darafsheh, MS, PHD, PHD, MS
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BS University of Tehran 2004
MS Shahid Beheshti University 2007
PHD University of Pennsylvania 2015
PHD University of NC Charlotte 2013
MS University of NC Charlotte 2011

Carl J. DeSelm, MD, PHD
Assistant Professor of Radiation Oncology (primary appointment)
MD Washington Univ in St. Louis 2012
BS Dartmouth College 2004
PHD Washington Univ in St. Louis 2016

Venkata Rao Devineni, MD
Associate Professor of Clinical Radiation Oncology (primary appointment)
MD Osmania Medical College 1973

Igor Dmitriev, PHD
Assistant Professor of Radiation Oncology (primary appointment)
PHD SRC Vector 1994

H Michael Gach, PHD
Associate Professor of Radiation Oncology (primary appointment)
Associate Professor of Radiology
PHD University of Pittsburgh 1998

Jose L Garcia, MS
Assistant Professor of Radiation Oncology (primary appointment)
MS Finch Univ of Health Sciences 1997
BS University of Puerto Rico 1995

Hiram Alberto Gay, MD
Associate Professor of Radiation Oncology (primary appointment)
BS University of Puerto Rico 1996
MD University of Puerto Rico 2000

Sreekrishna M Goddu, PHD, MS
Professor of Radiation Oncology (primary appointment)
PHD Andhra University 1991

Olga Leonidovna Green, MS, PHD
Assistant Professor of Radiation Oncology (primary appointment)
MS Washington Univ in St. Louis 2004
PHD Washington Univ in St. Louis 2008
BS Washington Univ in St. Louis 2002

Perry W Grigsby, MD, MBA, MS
Professor of Radiation Oncology (primary appointment)
Professor of Obstetrics and Gynecology
Professor of Radiology
BS University of Kentucky 1974
MD University of Kentucky 1982
MBA Washington Univ in St. Louis 1990
MS University of Kentucky 1978

Yuxing Gu, PHD
Assistant Professor of Radiation Oncology (primary appointment)
PHD University of MO St Louis 2014

Lannis Hall, M PH, MD
Assistant Professor of Clinical Radiation Oncology (primary appointment)
M PH Saint Louis University 1995
BA University of Michigan 1988
MD Howard University 1992

Dennis E Hallahan, MD
Professor of Radiation Oncology (primary appointment)
Elizabeth H and James S McDonnell III Distinguished Professor of Medicine
Head of the Department of Radiation Oncology
Professor of Biomedical Engineering
Professor of Cell Biology and Physiology
Professor of Molecular Microbiology
Professor of Pathology and Immunology
BS University of Illinois 1980
MD Rush University 1984

Yao Hao, PHD
Instructor in Radiation Oncology (Pending Dean’s Approval) (primary appointment)
BS Shanxi Medical University 2004
PHD Univ of Massachusetts Lowell 2016

Lauren Elizabeth Henke, MSCI, MD
Assistant Professor of Radiation Oncology (Pending Executive Faculty Approval) (primary appointment)
BS St Olaf College 2010
MSCI Washington Univ in St. Louis 2018
MD Washington Univ in St. Louis 2014

Jiayi Huang, MD
Assistant Professor of Radiation Oncology (primary appointment)
MD University of Massachusetts 2007

Geoffrey Douglas Hugo, PHD
Professor of Radiation Oncology (primary appointment)
Professor of Computer Science and Engineering
PHD University of CA Los Angeles 2003

K

Vaishali Kapoor, PHD, MS
Instructor in Radiation Oncology (primary appointment)
BA Delhi University 2006
PHD All-India Inst of Medical Sci 2013
MS All-India Inst of Medical Sci 2008

James Alexander Kavanaugh, MS
Instructor in Radiation Oncology (primary appointment)
BS University of Saint Thomas 2008
MS Louisiana St University 2011

Rao Fawwad Khan, PHD, MD
Associate Professor of Radiation Oncology (primary appointment)
Associate Professor of Biomedical Engineering
PHD McMaster University 2003
MD Quaid-Azam University 1997

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BS University of California 2006
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MS Louisiana St University 2012
PHD Univ of Massachusetts Lowell 2016
BS University of Montana Missoula 2009

L

Susan Joy Laduzinsky, MD
Assistant Professor of Radiation Oncology (primary appointment)
MD University of Illinois 1983

Jason Dole Lee, MD, PHD
Assistant Professor of Radiation Oncology (primary appointment)
MD Duke University 2010
PHD Duke University 2009

Hui Li, MS, PHD
Professor of Radiation Oncology (primary appointment)
MS Chinese Academy of Sciences 1995
BS Huashong University of Science 1992
PHD Friedrich-Alexander Universit 2001

Hsiu-San Lin, MD, PHD
Professor Emeritus of Radiation Oncology (primary appointment)
MD National Taiwan University 1960
PHD University of Chicago 1968

Zhi Hong Lu, PHD
Assistant Professor of Radiation Oncology (Pending Dean’s Approval) (primary appointment)
**M**

**Stephanie Markovina, MD**  
Assistant Professor of Radiation Oncology (primary appointment)  
MD University of Wisconsin-Madison 2010

**Thomas Rolf Mazur, PHD**  
Instructor in Radiation Oncology (primary appointment)  
PHD University of Texas Austin 2014  
BS Union College New York 2007

**Jeff Michael Michalski, MD, MBA**  
Carlos Perez Distinguished Professor of Radiation Oncology (primary appointment)  
Vice Chairman of Radiation Oncology  
MD Univ of Wisconsin Madison 1986  
BS Univ of Wisconsin Madison 1982  
MBA Washington Univ in St. Louis 2001

**Timothy John Mitchell, PHD, MS, PHD**  
Instructor in Radiation Oncology (primary appointment)  
PHD University of MO St Louis 2014  
MS Washington Univ in St. Louis 2007  
BS John Carroll University 2005  
PHD Washington Univ in St. Louis 2011

**Daniel F Mullen, MS, DDENT**  
Assistant Professor of Radiation Oncology (primary appointment)  
BS University of Missouri 1972  
MS University of Missouri 1984  
DDENT University of Missouri 1977

**Sasa Matic, MS, PHD**  
Professor of Radiation Oncology (primary appointment)  
Vice Chair Medical Physics and Clinical Strategy in Radiation Oncology  
BS Cameron University 1994  
MS University of Colorado Boulder 1996  
PHD University of MO Columbia 2011

**Robert J Myerson, PHD, MD**  
Professor Emeritus of Radiation Oncology (primary appointment)  
PHD University of California 1974  
MD University of Miami 1980  
BA Princeton University 1969

**P**

**Chunjoo Park, ME, BE, PHD**  
Assistant Professor of Radiation Oncology (primary appointment)  
ME The Catholic Univ of Korea 2009  
BE Hanyang University Hospital 2007  
PHD University of CA Berkeley 2013

**Stephanie Mabry Perkins, MD**  
Associate Professor of Radiation Oncology (primary appointment)  
MD University of Tenn Memphis 2005  
BS Union University 2001

**James Vernon Piephoff, MD**  
Instructor in Clinical Radiation Oncology (primary appointment)  
BS Citadel 1985  
MD University of South Carolina 1989

**James A Purdy, PHD, MA**  
Emeritus Professor of Radiation Oncology (primary appointment)  
PHD University of Texas Austin 1971  
BS Lamar University 1967  
MA University of Texas Austin 1969

**R**

**Francisco Javier Reynoso, PHD, MS**  
Instructor in Radiation Oncology (primary appointment)  
PHD Georgia Tech 2014  
MS Georgia Tech 2008

**Clifford Grant Robinson, MD**  
Associate Professor of Radiation Oncology (primary appointment)  
Associate Professor of Medicine  
MD Case Western Reserve Univ 2004  
BS University of Pittsburgh 2000

**Buck Edward Rogers, MA, PHD**  
Professor of Radiation Oncology (primary appointment)  
Adjunct Professor of Chemistry (Courtesy Affiliation)  
Professor of Radiology  
BS Loyola University Chicago 1989  
MA Washington Univ in St. Louis 1991  
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**Tapas Tondla, MS**  
Instructor in Clinical Radiation Oncology (primary appointment)  
MS Baroda Medical College 1974

**S**

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Associate Professor of Radiation Oncology (primary appointment)  
Associate Professor of Cell Biology and Physiology  
PHD Washington Univ in St. Louis 2004  
BS Duke University 1995  
MD Washington Univ in St. Louis 2004

**Christopher Spencer, MD, BAS, MA**  
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MD Saint Louis University 2010  
BAS Truman State University 2005  
MA Truman State University 2006

**Matthew Benjamin Spraker, MD**  
Assistant Professor of Radiation Oncology (primary appointment)  
MD University of Illinois 2013

**William L Straube, MEE**
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BS University of Illinois 1983
MEE Washington Univ in St. Louis 1992

Baozhuo Sun, PHD, MS
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BS Jilin Medical University 2000
PHD College of William and Mary 2005
MS College of William and Mary 2002

Maria A Thomas, PHD, MD
Assistant Professor of Radiation Oncology (primary appointment)
BS Creighton University 2000
PHD Saint Louis University 2006
MD Saint Louis University 2008

Wade L Thorstad, MD
Professor of Radiation Oncology (primary appointment)
MD University of Texas Austin 1991
BS Trinity University 1986

Dinesh Thotala, MS, PHD
Assistant Professor of Radiation Oncology (primary appointment)
BS Bangalore University 1990
MS Bangalore University 1993
PHD Bangalore University 1998

Amaris Renee Tippey, PHD
Assistant Professor of Clinical Radiation Oncology (primary appointment)
PHD East Carolina University 2014

Gregory Riccardo Vlacich, PHD, MD
Assistant Professor of Radiation Oncology (primary appointment)
PHD University of Chicago 2007
MD University of Chicago 2009

Bruce J Walz, MD
Associate Professor of Clinical Radiation Oncology (primary appointment)
MD Washington Univ in St. Louis 1966
BA Washington Univ in St. Louis 1962

Xiaowei Wang, PHD
Associate Professor of Radiation Oncology (primary appointment)
PHD Tufts University 2000
BS Nankai University 1993

Jeffrey F Williamson, PHD, MS
Professor of Radiation Oncology (primary appointment)
PHD University of Minnesota 1982
MS University of Minnesota 1980

BA St Olaf College 1974

Y

Deshan Yang, PHD, MS
Associate Professor of Radiation Oncology (primary appointment)
BS Tsinghua University, China 1992
PHD Univ of Wisconsin Madison 2005
MS Illinois Institute of Technol 2001

Z

Jin Zhang, MS, PHD
Instructor in Radiation Oncology (primary appointment)
MS Tianjin Polytech University 2008
BS Tianjin University 2005
PHD University of Connecticut 2012

Tiezhi Zhang, PHD, MS
Assistant Professor of Radiation Oncology (primary appointment)
BS Jilin Medical University 1994
PHD Univ of Wisconsin Madison 2004
MS Drexel University 1999

Tianyu Zhao, PHD, MD
Assistant Professor of Radiation Oncology (primary appointment)
BS Shanghai Jiao Tong University 1998
PHD Washington Univ in St. Louis 2010
MS Shanghai Jiao Tong University 2001

Imran Zoberi, MD
Professor of Radiation Oncology (primary appointment)
BS University of South Dakota 1992
MD Washington Univ in St. Louis 1996

Jacqueline Esthappan Zoberi, PHD
Professor of Radiation Oncology (primary appointment)
BA University of Chicago 1995
PHD University of Chicago 2000

Courses

Post-PhD Graduate Certificate in Medical Physics

For course information, please visit the Biomedical Engineering (http://bulletin.wustl.edu/grad/engineering/biomedical/#courses) page of this Bulletin.

MD/MSTP Programs

For course information, please visit the Radiology (http://bulletin.wustl.edu/medicine/departments/radiology/#courses) page of this Bulletin.

M90 Radiol 740 Clinical Radiation Oncology Clerkship
The four-week clerkship in radiation oncology will provide students with the opportunity to participate in the evaluation and management of a broad range of patients referred for
consideration of radiation therapy. Clerkship activities will take place at the Barnes-Jewish Hospital/Siteman Cancer Center complex and at our satellite facilities. Students will conduct patient evaluations under the supervision of radiation oncology department residents and faculty. Students will attend many conferences throughout this clerkship, with the workday starting between 7:00 a.m. and 7:30 a.m. Students will also have the opportunity to attend the appropriate multidisciplinary clinics, follow-up clinics, and conferences (e.g., pediatric neuro-oncology, cardiothoracic oncology, lymphoma, gynecological tumors) that pertain to their rotation schedule. Instructional materials are available for students on the rotation. (Students are not expected to purchase any curricular materials for this clerkship.) Student performance will be evaluated by both residents and faculty members who supervise the student over the course of the four-week clerkship. (Level: MS3)

M90 Radiol 840 Clinical Radiation Oncology Subinternship
The clinical division offers a four-week elective with emphasis on the evaluation, planning and administration of radiation therapy in patients with malignant tumors. The students have the opportunity to enhance their knowledge of the natural history of cancer and its pathological and biological features of cancer as well as to sharpen their clinical skills by participating in the management of patients. Applications from visiting students are accepted via VSAS only; these students should visit the School of Medicine website (https://md.wustl.edu/academics/visiting-students/how-to-apply) for instructions on how to apply. (Level: MS4)