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, MS, MD
Assistant Professor of Radiation Oncology (primary appointment)
Assistant Professor of Medicine
MS Washington Univ in St. Louis 2011
BS Medical College Georgia 2005
Michael Bernard Altman, PHD  
Assistant Professor of Radiation Oncology (primary appointment)  
PHD University of Chicago 2010

Anthony John Apicelli III, MD, PHD  
Assistant Professor of Radiation Oncology (primary appointment)  
MD Washington Univ in St. Louis 2009  
BS Princeton University 1999  
PHD 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)  
MD University of Texas Austin 2009  
BS University of Texas Austin 2005

Kathy Baglan  
Instructor in Clinical Radiation Oncology (primary appointment)

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

Walter R Bosch, BE, MS, PHS  
Associate Professor of Radiation Oncology (primary appointment)  
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  
MD Stanford University 2013  
BS Mass Inst of Technology (MIT) 2004

David T Curiel, PHD, MD  
Distinguished Professor of Radiation Oncology (primary appointment)  
Professor of Medicine  
Professor of Obstetrics and Gynecology  
PHD University of Groningen 2000  
MD Emory University 1982  
BA West Georgia College 1978

Mackenzie Daly, MD  
Assistant Professor of Radiation Oncology (primary appointment)  
MD University of MO Kansas City 2005

Arash Darafsheh, MS, PHD, MS, PHD  
Assistant Professor of Radiation Oncology (primary appointment)  
BS University of Tehran 2004  
MS University of NC Charlotte 2011  
PHD University of Pennsylvania 2015  
MS Shahid Beheshti University 2007  
PDH University of NC Charlotte 2013

Carl J. DeSelm, MD, PHD  
Assistant Professor of Radiation Oncology (primary appointment)  
BS Dartmouth College 2004  
MD Washington Univ in St. Louis 2012  
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)  
BS University of Puerto Rico 1995  
MS Finch Univ of Health Sciences 1997

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

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

**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)
PHD Univ of Massachusetts Lowell 2016
BS Shanxi Medical University 2004

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

**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)
MS Louisiana St University 2011
BS University of Saint Thomas 2008

**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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Assistant Professor of Radiation Oncology (primary appointment)
MD University of Pittsburgh 2012
BS University of California 2006

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PHD Washington Univ in St. Louis 2007

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Assistant Professor of Radiation Oncology (primary appointment)
BS University of Montana Missoula 2011
PHD Univ of Massachusetts Lowell 2016
MS Louisiana St University 2012

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

**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
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
PHD Washington Univ in St. Louis 2011
BS John Carroll University 2005

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

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

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

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)
MD University of South Carolina 1989
BS Citadel 1985

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

R

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

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
PHD Washington Univ in St. Louis 1995

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MS Baroda Medical College 1974

S

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

Christopher Spencer, BAS, MA, MD
Adjunct Instructor in Radiation Oncology (primary appointment)
BAS Truman State University 2005
MA Truman State University 2006
MD Saint Louis University 2010

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Assistant Professor of Radiation Oncology (primary appointment)
MD University of Illinois 2013

William L Straube, MEE
Associate Professor of Radiation Oncology (primary appointment)
BS University of Illinois 1983
MEE Washington Univ in St. Louis 1992

Baozhuo Sun, MS, PHD
Assistant Professor of Radiation Oncology (primary appointment)
MS College of William and Mary 2002
BS Jilin Medical University 2000
PHD College of William and Mary 2005

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

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

Dinesh Thotala, MS, PHD
Assistant Professor of Radiation Oncology (primary appointment)
MS Bangalore University 1993
BS Bangalore University 1990
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, MS, PHD
Professor of Radiation Oncology (primary appointment)
MS University of Minnesota 1980
BA St Olaf College 1974

PHD University of Minnesota 1982

Y

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

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

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

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

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

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

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 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)