Department of Radiation Oncology

The Department of Radiation Oncology ([http://radonc.wustl.edu/](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 graduate students, medical students, residents in radiation oncology, 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 March 2017, all of the Washington University in St. Louis/ Barnes-Jewish Hospital Radiation Oncology facilities achieved accreditation for the American Society for Radiation Oncology (ASTRO) Accreditation Program for Excellence (APex). The department provides radiation therapy treatment at Siteman Cancer Center at Barnes-Jewish Hospital and Washington University School of Medicine, Siteman Cancer Center-South County, Siteman Cancer Center at Barnes-Jewish West County Hospital, Siteman Cancer Center at Northwest HealthCare, Siteman Cancer Center at Barnes-Jewish St. Peters Hospital, Siteman Cancer Center at Memorial Hospital East, 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](http://radonc.wustl.edu)

**Faculty**

**Department Head**

Dennis Hallahan, MD ([https://radonc.wustl.edu/people/dennis-hallahan/](https://radonc.wustl.edu/people/dennis-hallahan/))

**Clerkship Director**

Maria Thomas, MD ([https://radonc.wustl.edu/people/maria-a-thomas-md-phd/](https://radonc.wustl.edu/people/maria-a-thomas-md-phd/))

**Director of Education in Medical Physics**

Rao Khan, PhD ([https://radonc.wustl.edu/people/rao-khan-phd/](https://radonc.wustl.edu/people/rao-khan-phd/))

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

**A**

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

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
PHD Washington Univ in St. Louis 2009
Abdelkareem Azab, PHD  
Associate Professor of Radiation Oncology (primary appointment)  
PHD Hebrew University 2007

B

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

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

Carmen Renee Bergom, MD, MS, PHD  
Associate Professor of Radiation Oncology (primary appointment)  
BS Mass Inst of Technology (MIT) 1998  
MD Medical College of Wisconsin 2008  
MS Cambridge University 1999  
PHD Medical College of Wisconsin 2006

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

C

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  
BS Mass Inst of Technology (MIT) 2004  
MD Stanford University 2013

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

D

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

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

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

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  
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  
BS Andhra University 1983  
MS Andhra University 1985

Olga Leonidovna Green, PHD, MS  
Associate 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, MBA, MS  
Professor of Radiation Oncology (primary appointment)  
Professor of Obstetrics and Gynecology  
Professor of Radiology  
MD University of Kentucky 1982  
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

H

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

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
MD Rush University 1984
BS University of Illinois 1980

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

Jiayi Huang, MD
Associate 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, MS, PHD
Assistant Professor of Radiation Oncology (primary appointment)
MS All-India Inst of Medical Sci 2008
PHD All-India Inst of Medical Sci 2013
BA Delhi University 2006

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

PHD Louisiana St University 2020

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

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

Taeho Kim, PHD
Associate Professor of Radiation Oncology (primary appointment)
PHD Washington Univ in St. Louis 2007

Nels C Knutson, PHD, MS
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
PHD Friedrich-Alexander Universität 2001
BS Huashong University of Science 1992

Alexander Justin Lin, MD, PHD, MA
Assistant Professor of Radiation Oncology (primary appointment)
MD University of CA Irvine 2016
BA University of Nebraska 2016
PHD University of CA Irvine 2016
MA University of CA Irvine 2016

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

Zhi Hong Lu, PHD
Assistant Professor of Radiation Oncology (Pending Dean's Approval) (primary appointment)
BS Fudan University 1990
PHD University of Mississippi Med 1999
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

Francisco Javier Reynoso, MS, PHD
Assistant Professor of Radiation Oncology (primary appointment)
MS Georgia Tech 2008
PHD Georgia Tech 2014

Clifford Grant Robinson, MD
Professor of Radiation Oncology (primary appointment)
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
MA Washington Univ in St. Louis 1991
PHD Washington Univ in St. Louis 1995
BS Loyola University Chicago 1989

Tapan Roy, MS
Instructor in Clinical Radiation Oncology (primary appointment)
MS Baroda Medical College 1974

Pamela Parker Samson, MA, MS, MD, MPH
Assistant Professor of Radiation Oncology (primary appointment)
BA University North Carolina 2001
MA University of Washington 2003
MS University of Cincinnati 2007
MD University of Cincinnati 2011
MPH Washington Univ in St. Louis 2020

Matthew Schmidt, MS
Instructor in Radiation Oncology (primary appointment)
BS Valdosta St College 2011
MS Duke University 2013

Julie K Schwarz, MD, PHD
Professor of Radiation Oncology (primary appointment)
Professor of Cell Biology and Physiology
Vice Chair of Research Department of Radiation Oncology
MD Washington Univ in St. Louis 2004
BS Duke University 1995
PHD Washington Univ in St. Louis 2004

Christopher Spencer, BAS, MD, MA
Adjunct Instructor in Radiation Oncology (primary appointment)
BAS Truman State University 2005
MD Saint Louis University 2010
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  
Associate Professor of Radiation Oncology (primary appointment)  
MEE Washington Univ in St. Louis 1992  
BS University of Illinois 1983

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

Maria A Thomas, MD, PhD  
Associate Professor of Radiation Oncology (primary appointment)  
BS Creighton University 2000  
MD Saint Louis University 2008  
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  
Associate 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, MD, PhD  
Assistant Professor of Radiation Oncology (primary appointment)  
MD University of Chicago 2009  
PHD University of Chicago 2007

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

Jeffrey F Williamson, PhD, MS  
Professor of Radiation Oncology (primary appointment)  
BA St Olaf College 1974

PHD University of Minnesota 1982  
MS University of Minnesota 1980

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

Joanna Chensi Yang, MD, M PH  
Assistant Professor of Radiation Oncology (Pending Executive Faculty Approval) (primary appointment)  
MD Mount Sinai School of Medicine 2013  
M PH Harvard University 2018

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

Tianyu Zhao, PhD, MS  
Associate 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

Research Electives  
Radiation Oncology Research Electives  
The Cancer Biology division provides opportunities for graduate students in the Division of Biology and Biomedical Sciences (http://dbbs.wustl.edu/Pages/) (DBBS) and the Medical Scientist Training Program (http://mstp.wustl.edu/Pages/) (MSTP) to train with faculty in the cancer biology research laboratories.
The Department of Radiation Oncology offers a clinical clerkship for medical students that can be selected as an elective through the medical school.

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

Courses

Post-PhD Graduate Certificate/ Masters of Science in Medical Physics

For course information, please visit the Medical Physics (http://bulletin.wustl.edu/medicine/areas-of-study/medical-physics/#courses) page of this Bulletin.

MD/MSTP Programs

The Department of Radiation Oncology offers two courses that are open to students in the MD and MSTP (MD/PhD) programs. For course information, please visit the online course listings (https://acadinfo.wustl.edu/CourseListings/Semester/Listing.aspx).

M92 RadOnc 740 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 the weeks of this clerkship, with the workday starting between 7:00 and 7:30 a.m. Students will also have the opportunity to attend the appropriate multidisciplinary clinics, follow-up clinics, and multidisciplinary conferences (such as pediatric neuro-oncology, cardiothoracic oncology, lymphoma, GYN tumor conferences, and so on) pertaining to their rotation schedule. Instructional materials are available for students on the rotation. (Students are not expected to purchase any curricular materials for the clerkship.) Student performance will be evaluated by both resident and faculty members who supervise the student over the course of the four-week clerkship. Credit 154 units.

M92 RadOnc 801 Clinical Radiation Oncology Subinternship

The Radiation Oncology clinical division offers an elective with emphasis on the evaluation, planning, and administration of radiation therapy in patients with malignant tumors. Students will have the opportunity to enhance their knowledge of the natural history of cancer as well as its pathological and biological features. Students will sharpen their clinical skills by participating in the management of cancer patients. Students will be mentored to prepare and lead a department noon conference on the management of a specific patient's care, including literature review and discussion. Students will be expected to prepare for clinical consultations by reviewing patient records and relevant literature, obtaining the patient's history, and performing a physical examination. This will be followed by presenting findings and a proposed care plan to the attending and resident physicians. This course is designed for MS4 students who are entering the Radiation Oncology Match. If a student is an MS4 applying in another specialty but interested in a radiation oncology elective, we encourage them to pursue a two-week special study elective in Radiation Oncology.