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
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)
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 (Pending Dean’s Approval)
(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
BA West Georgia College 1978
MD Emory University 1982
PHD University of Groningen 2000
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)
MS University of NC Charlotte 2011
PHD University of Pennsylvania 2015
BS University of Tehran 2004
MS Shahid Beheshti University 2007
PHD University of NC Charlotte 2013
Carl J. DeSelm, PHD, MD
Assistant Professor of Radiation Oncology (primary appointment)
BS Dartmouth College 2004
PHD Washington Univ in St. Louis 2016
MD Washington Univ in St. Louis 2012
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, MS, PHD
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, MS, MD, MBA
Professor of Radiation Oncology (primary appointment)
Professor of Obstetrics and Gynecology
Professor of Radiology
MS University of Kentucky 1978
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

Lannis Hall, MD, M PH
Assistant Professor of Clinical Radiation Oncology (primary appointment)
MD Howard University 1992
BA University of Michigan 1988
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
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, 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, MS, PHD
Instructor in Radiation Oncology (primary appointment)
BA Delhi University 2006
MS All-India Inst of Medical Sci 2008
PHD All-India Inst of Medical Sci 2013

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

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

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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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PHD Univ of Massachusetts Lowell 2016
MS Louisiana St University 2012
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)
BS Huashong University of Science 1992
MS Chinese Academy of Sciences 1995
PHD Friedrich-Alexander Universit 2001

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

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

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

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

Daniel F Mullen, DDENT, MS
Assistant Professor of Radiation Oncology (primary appointment)
DDENT University of Missouri 1977
BS University of Missouri 1972
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
BS Cameron University 1994
PHD University of MO Columbia 2011
MS University of Colorado Boulder 1996

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

P

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

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

R

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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, PHD, MA
Professor of Radiation Oncology (primary appointment)
Adjunct Professor of Chemistry (Courtesy Affiliation)
Professor of Radiology
PHD Washington Univ in St. Louis 1995
BS Loyola University Chicago 1989
MA Washington Univ in St. Louis 1991

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MS Baroda Medical College 1974

S

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Associate Professor of Cell Biology and Physiology
MD Washington Univ in St. Louis 2004
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BS Duke University 1995

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

Matthew Benjamin Spraker, MD
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BS University of Illinois 1983

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

Maria A Thomas, PHD, MD
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PHD Saint Louis University 2008
MD Saint Louis University 2008
BS Creighton University 2000

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

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

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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

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

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

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

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

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

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

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

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 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)