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

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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

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BS Princeton University 1999
PHD Washington Univ in St. Louis 2009
MD Washington Univ in St. Louis 2009

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MD University of Texas Austin 2009
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BS University of Puerto Rico 1995
MS Finch Univ of Health Sciences 1997

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M PH Saint Louis University 1995

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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
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MD Rush University 1984

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Instructor in Radiation Oncology (Pending Dean's Approval) (primary appointment)
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MSCI Washington Univ in St. Louis 2018
MD Washington Univ in St. Louis 2014
BS St Olaf College 2010

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Geoffrey Douglas Hugo, PHD
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BS University of Montana Missoula 2009
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MS Chinese Academy of Sciences 1995
PHD Friedrich-Alexander Universit 2001
BS Huashong University of Science 1992

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MD National Taiwan University 1960
PHD University of Chicago 1968

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M
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PHD Washington Univ in St. Louis 2011
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MS University of Missouri 1984
DDENT University of Missouri 1977
BS University of Missouri 1972

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Vice Chair Medical Physics and Clinical Strategy in Radiation Oncology
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MD University of Miami 1980
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P
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BE Hanyang University Hospital 2007
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ME The Catholic Univ of Korea 2009

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BS Lamar University 1967
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MA University of Texas Austin 1969

R
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MS Georgia Tech 2008

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MA Truman State University 2006

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**V**  

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**BS Nankai University 1993**  
**PHD Tufts University 2000**  

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BA St Olaf College 1974  
MS University of Minnesota 1980  
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**Y**  

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BS Tsinghua University, China 1992  
PHD Univ of Wisconsin Madison 2005  
MS Illinois Institute of Technol 2001  

**Z**  

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BS Tianjin University 2005  
PHD University of Connecticut 2012  
MS Tianjin Polytech University 2008  

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PHD Univ of Wisconsin Madison 2004  
BS Jilin Medical University 1994  
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**Tianyu Zhao, MS, PHD**  
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MS Shanghai Jiao Tong University 2001  
PHD Washington Univ in St. Louis 1998  

**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  

**Courses**

**Post-PhD Graduate Certificate in Medical Physics**

For course information, please visit the Biomedical Engineering page of this *Bulletin*. 

[http://bulletin.wustl.edu/grad/engineering/biomedical/#courses]
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)