Department of Radiation Oncology

The Department of Radiation Oncology (http://radonc.wustl.edu/) was created in 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 our three divisions: Clinical, Medical Physics and Cancer Biology; and teaching graduate students, medical students, residents in both radiation oncology and medical physics, 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 and at Siteman Cancer Center facilities throughout the St. Louis regional area. Our faculty have gained international recognition for innovative technological advances in physics and treatment planning, biological research, computer applications and clinical investigation.

We have advanced treatment planning computer systems for 3D conformal and intensity-modulated radiation therapy as well as the latest Gamma Knife, the ICON unit. We have six linear accelerators with on-board CT imaging capability. The brachytherapy suite includes capabilities for high dose rate remote after-loading and for image-guided permanent prostate seed implants. Interstitial and external hyperthermia treatments are also available.

Recent Highlights

- 2013: Implemented the world’s first compact proton beam accelerator that involves the use of a superconducting synchrocyclotron mounted on a gantry
- 2014: Implemented the world’s first MRI-guided radiation therapy treatment program. (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.)
- 2017: Achieved accreditation within all of the Washington University in St. Louis/Barnes-Jewish Hospital Radiation Oncology facilities for the American Society for Radiation Oncology (ASTRO) Accreditation Program for Excellence (APex). The department provides radiation therapy treatment at Siteman Cancer Center locations throughout the St. Louis regional area.
- 2018: Advanced our Image-Guided Radiation Therapy (IGRT) program with the installation of the ViewRay MRIdian Linac System
- 2019: Spearheaded collaboration with Liga Nacional Contra el Cáncer/Instituto Nacional de Cancerología (LIGA/INCAN) to help modernize radiation therapy by installing state-of-the-art radiation therapy equipment in Guatemala City. We continue working with our collaborators to help bring life-saving therapies to the only cancer center serving the poor of Guatemala.
- 2020: Installed an additional Mevion Proton unit equipped with pencil beam scanning technology
- 2020: Installed an ETHOS (Halcyon) radiotherapy system with adaptive treatment workflow

The department supports a four-year Accreditation Council for Graduate Medical Education (ACGME (https://www.acgme.org/))-accredited Radiation Oncology Residency Training Program (established 1971) as well as a two-year Commission on Accreditation of Medical Physics Education Programs (CAMPEP (https://www.campep.org/))-accredited Medical Physics Residency Training Program (established 1993; accredited 1997).

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