

## **RADIATION ONCOLOGY MEDICAL PHYSICS RESIDENCY PROGRAM**

### **Program Overview**

The radiation oncology medical physics residency program is a two-year clinical training program at The University of Texas M. D. Anderson Cancer Center for medical physicists who intend to work in Radiation Oncology Physics and are in need of experience to qualify for examination by the American Board of Radiology (ABR). The program is accredited by the Commission of Accreditation of Medical Physics Education Programs, Inc. (CAMPEP).

### **Program Objectives**

The objective of the residency program is to provide structured clinical radiation oncology physics training and experience to individuals wishing to practice professional radiation oncology physics. Residents, under the supervision of Board Certified medical physicists, will participate in the breadth of routine clinical duties of a radiation oncology physicist. The resident will gain experience with the full range of state-of-the-art radiation oncology procedures, techniques, and equipment. At the conclusion of the program the resident will demonstrate competency in:

- Evaluation of treatment equipment performance
- Planning for purchase of equipment and site preparation
- Acceptance and commissioning of new equipment
- Performance of regularly scheduled quality assurance on treatment and simulation equipment
- Designing and monitoring a quality assurance program for equipment
- External beam treatment planning, treatment delivery, and quality assurance
- Brachytherapy treatment planning, treatment delivery, and quality assurance
- Operating a radioactive source radiation safety program
- Commissioning and quality assurance of treatment planning and simulation workstations
- Special dosimetry techniques, procedures, and equipment
- Special treatment procedures, techniques and equipment
- Technical aspects of equipment purchase
- Providing in-service instruction on radiation oncology physics procedures, techniques, and equipment and
- Performing clinical investigation in radiation oncology physics

### **First Year Training**

In parallel with didactic course work offered through the University of Texas Graduate School of Biomedical Sciences (GSBS), the following broad areas will be covered during the first year of residency.

- External beam (including proton) treatment equipment performance, acceptance testing, commissioning, and quality assurance
- External beam (including proton) treatment planning, treatment delivery, and quality assurance
- Brachytherapy treatment equipment performance, acceptance testing, commissioning, and quality assurance
- Brachytherapy treatment planning, treatment delivery, and quality assurance
- Development and monitoring of quality assurance programs
- In-vivo patient dose measurement
- 3-D treatment planning and treatment
- IMRT treatment planning, treatment, and quality assurance

- Patient positioning procedures, techniques, and devices
- Ultrasound equipment performance evaluation

Additional experience such as simulator, CT, and ultrasound QA, protective barrier shielding calculations, machine and patient radiation protection surveys, design of QA and radiation safety programs, fetal dose and pacemaker dose calculations, and in-service presentations. Residents also participate in seminars, colloquia, clinical rounds, and other educational opportunity

**Second Year Training**

During the second year of residency the resident will be assigned duties to be carried out under the direction of medical physics faculty and staff. The resident will be involved in the same types of experiences as the first year, but will work more independently. In addition, the resident will learn special treatment procedures of stereotactic radiosurgery and stereotactic radiation therapy, ultrasound-guided prostate seed implants, and IMRT commissioning and QA. Independent practice experience will be obtained at a nearby off-site facility.

**Admissions**

Candidates must have an M. S. or a Ph.D. degree in medical physics or in another area of physics. Between two and three residents will be recruited each year. The successful candidate must obtain a temporary license to practice professional medical physics from the State of Texas during their first 120 days of residency.

**Application and Selection Process**

Sept 1 through December 31 Acceptance of Applications  
 December 31.....Deadline for Applications  
 February 1 .....Candidate Selection Commences  
 March 15 ..... Candidate(s) Identified  
 July 1 ..... Program Commences

**Inquiries**

Inquiries for application should be directed to:

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All applications are processed through the on-line application program, Discover System. An electronic application packet is available by contacting Melivna Hackett at [mkimball@mdanderson.org](mailto:mkimball@mdanderson.org)

Applicants will be required to meet all visa and documentation requirements. The University of Texas M. D. Anderson Cancer Center is a smoke-free EEO/AA environment.