THERAPEUTIC MEDICAL PHYSICS RESIDENCY PROGRAM

AT DEPARTMENT OF RADIATION ONCOLOGY, UNIVERSITY OF FLORIDA

The Radiation Oncology Physics Residency program at Department of Radiation Oncology, University of Florida, is designed to provide two (2) years of comprehensive training in all aspects of clinical therapeutic medical physics to qualified applicants. The Program aims to prepare the graduate for board certification and a professional career in radiation oncology. The program is designed in accordance with the guidelines contained in AAPM Report No. 36 on Medical Physics Residencies. The training consists of full participation by the physics resident in the clinical physics service under the supervision of the Physics Residency Program faculty, formal course work in radiation physics and radiobiology, guided studies through literature review and oral presentation, and didactic lectures in clinical radiation oncology. Comprehensive training and experience is provided in the broad areas of clinical dosimetry, treatment planning, brachytherapy, machine calibration, quality assurance, and radiation safety. The residency program is accredited by the Commission on Accreditation of Medical Physics Education Programs, Inc. (CAMPEP).

- **Training Facilities:** The Physics section at Department of Radiation Oncology, University of Florida provides clinical medical physics services to the Radiation Oncology at Shands Hospital on both the Gainesville and the Jacksonville campuses. The department employs 7 physicists in Gainesville and 6 in Jacksonville and more than 10 radiation oncologists, with an additional 8 radiation oncology residents in training at this time.

- **Equipment Available:** The clinics served by the physics section utilize a variety of radiotherapy equipment, including Varian and Elekta linear accelerators, all equipped with multi-leaf collimators and electronic portal imaging devices, an orthovoltage unit, Varian Ximatron simulators, Philips Brilliance big bore multi-slice CT scanner and Pinnacle virtual simulation workstations. Cone beam computed tomography is available on most linear accelerators. Treatment planning is performed on Philips Pinnacle 3D Therapy Planning System (TPS) with 10 workstations. Nomos CORVUS
Inverse Treatment Planning System and Pinnacle are available for planning of Intensity Modulated Radiation Therapy (IMRT). High dose rate brachytherapy is performed using a Nucletron HDR Remote Afterloader unit and PLATO TPS. A VariSeed (formerly MMS) TPS is available for treatment planning of permanent prostate implant. Brainlab, VisionRT, and Sonarray patient positioning systems are used for optical-guided patient setup and stereotactic radiotherapy. A Sofamor Danek Stereotactic RadioSurgery System is used to deliver SRS treatments. IMPAC Facility Management System is used for patient scheduling, record and verify, charge capture, and other administrative functions. A complete set of physics equipment including Wellhoffer water phantoms, diode arrays, various chambers and electrometers, and radiation detection meters are available as well. The University of Florida Proton Therapy Institute (UFPTI) on the Jacksonville campus is home to the only proton therapy facility in the southeast region. An IBA cyclotron with three proton gantries is in operation since 2006. Dedicated CT, MRI, and PET/CT are housed within UFPTI. In addition, two Elekta linacs with MLC, EPID, and CBCT are used for photon beam radiotherapy.

- **Special Procedures Performed:** The clinics served by the physics section perform nearly all special procedures available in radiation oncology. These include 3-D Conformal and Intensity Modulated Radiation Therapy; Stereotactic Radiosurgery/Radiotherapy; Total Body Irradiation; Total Skin Electron Therapy; High Dose Rate Intraluminal, Intracavitary, Mold, and Interstitial Brachytherapy; Low Dose Rate Intracavitary, Interstitial temporary and permanent brachytherapy implants with or without CT-guidance; Intravascular Brachytherapy; and Radiopharmaceutical Therapy.

- **Qualification of Applicants:** Applicants to the program must hold a M.S. or Ph.D. degree in medical physics or a closely related field with an undergraduate degree in physics or a related field with coursework equivalent to a minor in physics (including at least three upper level undergraduate courses). Preferences will be given to graduates of a medical physics graduate education program accredited by the CAMPEP. Candidates for our residency program should have completed the didactic material detailed in the AAPM report 79 prior to the clinical training. The requirement will be strictly followed for residents starting July, 2010. This requirement follows the ABR new requirement that was initiated in 2007, that “Beginning in 2012, in order to take the American Board of Radiology Part 1 examination in Radiologic Physics, candidates must be enrolled in or have graduated from a CAMPEP accredited education program (e.g., MS, PhD, or residency). Beginning in 2014, in order to take the American Board of Radiology Part 1 examination in Radiologic Physics, candidates must be enrolled in or have completed a CAMPEP accredited residency program.” However, no prior clinical experience is necessary.
• **Resident Rotation Schedule**: The resident will be assigned various responsibilities throughout the two year residency program in accordance with the progress of the resident in the practice of clinical medical physics. The resident will rotate through the areas of clinical dosimetry and treatment planning, machine calibration and quality assurance, brachytherapy and radiation safety, stereotactic radiosurgery and radiotherapy, and other special procedures. A quarterly rotation schedule is composed at the beginning of each academic year for each resident.

• **Evaluation of Resident**: Residents are evaluated after each rotation by the supervising faculty physicist to determine whether the learning objectives are met through the rotation. Residents are given an annual oral examination in the format of ABMP Oral Board Exam, with contents appropriate for the training of the resident. Residents must pass the annual exam in order to continue or graduate from the resident program.

• **Physics Conferences**: A didactic physics conference is held weekly, in which a resident, a student in the medical physics graduate program at University of Florida, or a staff physicist will give an oral presentation on a topic in clinical radiation oncology physics. Handout materials with a complete list of bibliography will be distributed for each presentation. A conference schedule will be composed at the beginning of each academic year.

• **Other Responsibilities of the Resident**:

  - The resident will participate in courses on radiation oncology physics and radiobiology and pass the written exams given at the end of the courses.

  - The resident will participate in the weekly Wednesday Morning Chart Review Conferences.

  - The resident will participate in the weekly Thursday Night Teaching Conferences on clinical radiation oncology.

  - The resident will submit a weekly written report on the tasks accomplished and activities observed/participated/performed during the week by the resident to the director of the Medical Physics Residency Program.

  - The resident will observe and adhere to other rules and requirements of the department of Radiation Oncology at University of Florida and Shands Cancer Center.

**Disciplinary Actions**: Residents may be disciplined for inappropriate actions or failure to follow rules and requirements of University of Florida and Shands Cancer Center. The disciplinary actions may include warnings, probation, and up to dismissals from the program.