Prerequisites

- Satisfactory completion of a PGY-1 level Internship year in the Department of Medicine at Hospital of University of Pennsylvania
- Passing score on USMLE Steps 1 and 2 or equivalent
- Resident must sit for the USMLE Step 3 exam during the PGY-1 year. Note that results may not be available until after the PGY-2 year has begun. Residents must receive a passing score on the USMLE Step 3 exam before completion of their PGY-2 years, or they cannot advance to the PGY-3 level
- Valid PA State training license
- Fulfillment of all general criteria set forth for housestaff at University of Pennsylvania facilities
- Current ECFMG certificate (applies to Foreign Medical Graduates only)
- BLS Certification at a minimum, but ideally ACLS Certification

Objectives for Satisfactory Completion of PGY-2 Year

Basic

- Knowledge of procedures and policies for residents in radiation oncology training at the University of Pennsylvania
- Attendance at key lecture series in clinical radiation oncology, radiation physics, radiobiology, tumor biology, and biostatistics (offered alternate years)
- Passing score on USMLE Step 3 or equivalent examination, in accordance with PA State requirements
- Satisfactory performance review by program director
- BLS Certification

Clinical

- Satisfactory completion and evaluations on all clinical rotations at UPHS
- Understanding of general and basic principles of Radiation Oncology
- Ability to present concise and astute summaries of service patients in clinic as well as during chart rounds or other departmental/multidisciplinary conferences
- Ability to identify basic relevant clinical data that are important in the evaluation and management of general oncology patients
Completion of online patient log files demonstrating care\(^1\) of approximately 150 cases/year with various oncologic diagnoses

Acquisition of a basic understanding of quality assurance processes as they apply to radiation oncology

**Academic**

- Satisfactory development of presentation skills focused on general topics
  - Experience with use of PowerPoint or equivalent presentation media
  - Ability to organize and present introductory lectures
- Facility with use of biomedical informatics tools including MEDLINE, ProCLIPS (departmental clinical database), hospital wide information systems, and the biomedical library
  - Understanding of patient’s rights and privacy issues as they relate to the specialty and to medicine as a whole
- Active self-learning with textbook reading, supplemented with classic literature and important new clinical trials.
- Acquisition of basic knowledge of clinical radiation physics and achievement of satisfactory scores on internal examinations
- Acquisition of basic knowledge of radiobiologic principles as they apply to clinical situations and achievement of satisfactory scores on internal examinations
- Presentation of resident seminar on research topic of interest (see specific guidelines for resident seminars)
- Demonstration of a beginning ability to critically read, evaluate, and review the medical literature.

### Objectives for Satisfactory Completion of PGY-3 Year

**Basic**

- Attendance of key lecture series in clinical radiotherapy, physics, biostatistics (offered alternate years) and radiobiology with an increased role in participation and teaching
- Ability to deliver general presentations on basic clinical topics

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\(^1\) “Care” refers to consultation on patients who may or may not ultimately require simulation plus simulation and treatment of patients for whom you may not have performed initial consultation.
Satisfactory performance review by program director

BLS Certification

Clinical

- Ability to handle on-call emergency situations under faculty supervision
- Beginning ability to manage general clinical situations on an autonomous basis
- Mastery of basic clinical radiotherapy with a knowledge base that is commensurate with level of training
- Completion of online patient log files demonstrating care of approximately 150 cases/year focused on general and moderately complex oncologic entities
- Basic experience in clinical brachytherapy, with at least 5 – 10 observed cases
- Successful completion of rotations on more complex services than PGY-2 residents, as demonstrated by satisfactory evaluations by relevant faculty and support staff
- Assumption of greater responsibility on more general radiotherapy services, as supported by satisfactory evaluations by faculty as well as support staff
- Demonstration of an increased understanding of technical aspects of radiotherapy via full participation in the treatment planning processes, including set-up and portal film review, as well as satisfactory completion of a clinical dosimetry elective
- Satisfactory completion of one-month nuclear medicine/radiology elective
- Basic understanding of quality assurance processes as they apply to radiation oncology

Academic

- Demonstration of ability to self-learn by identifying and citing pertinent primary literature in common oncologic diseases.
- Demonstration of ability to critically evaluate and review medical literature.
- Presentation of resident seminar with satisfactory evaluations from resident and faculty attendees
- Initiation of research projects focusing mainly on one, or encompassing one or more, of the following: clinical radiation oncology, radiation physics, tumor biology/radiobiology
  - Quantity of research projects in accordance with departmental policy on resident research
  - Begin preliminary work under faculty supervision
Objectives for Satisfactory Completion of PGY-4 Year

**Basic**

- Attendance at lecture series, with a greatly increased role in teaching junior colleagues and an emphasis on the Socratic method
- Ability to give thorough presentations on general or focused oncologic topics
- Increased understanding of more complex treatment planning
- Greater responsibility in directing CT simulations
- Independent evaluation and critique of treatment plans and portal films
- Acquisition of more clinical brachytherapy and treatment planning experience
- Satisfactory performance review by program director
- BLS Certification

**Clinical**

- Ability to handle on-call emergency situations under faculty supervision in a more autonomous manner
- Ability to manage general clinical situations on an autonomous basis
- Participation in rotations with a variety of complexity, with an emphasis on problem solving and decision making
  - Residents at this level should be able to fully assess a patient situation, determine the appropriate course of treatment, and then develop and implement the treatment plan, with attending supervision as needed.
- Satisfactory performance as a senior resident, including rotations as the VA senior, pediatrics resident, gynecologic resident, and lymphoma resident
- Pursuit of elective courses and research, including other areas of oncology
- Completion of online patient log files demonstrating care of approximately 150 cases/year focused on moderately complex oncologic entities
- Accumulation of experience in brachytherapy, with at least 5 – 10 observed cases, and 5 – 10 cases performed
- Accumulation of clinical experience and technical facility with more complicated treatments including stereotactic radiotherapy, 3-D IMRT treatment planning, and brachytherapy
- Beginning ability to formulate valid critique of treatment and treatment plans for quality assurance purposes
Academic

- Self-learning that focuses on developing in-depth understanding of pertinent clinical, biological, and technical literature
- Ability to be conversant in important clinical literature and to understand the appropriate application of studies to treatment decision-making
- Completion of research project(s), with written and submitted abstracts and/or manuscripts for publication, with faculty supervision
- Submission of publication and presentation at national meeting

Objectives for Satisfactory Completion of PGY-5 Year

Basic

- Attendance at lecture series, acting as leader or moderator along with faculty, and taking an active teaching role with students and fellow residents
- Ability to give thorough presentations on general or specific aspects of radiobiology, physics, or clinical medicine at a level of quality that is appropriate for meetings or multidisciplinary audiences
- Satisfactory performance review by program director
- BLS Certification

Clinical

- Ability to handle on-call emergency situations under faculty supervision autonomously
- Ability to manage moderately complex clinical situations on an autonomous basis
- Successful completion of required clinical rotations while continuing to develop independent skills in clinical decision-making, treatment planning and technical aspects
- Demonstration of competency to act as a general practitioner in Radiation Oncology in either an academic or community setting
- Successful completion of electives in areas of interest or subspecialty training
- Completion of online patient log files demonstrating care of approximately 150 cases/year focused on more complex oncologic entities
- Satisfactory performance as a senior resident, including all services listed under the PGY-4 year, as well as Pennsylvania Hospital and a variety of satellite facilities (Chestnut Hill, Chester County, Capital Health at Mercy)
Sufficient experience in the delivery of brachytherapy to assure that the resident can autonomously plan and perform such procedures (as per the ABR rules, which presently stipulate a total accumulated experience of no fewer than five interstitial implants performed in at least five patients and ten intracavitary implants performed in at least ten patients)

Experience and facility with complex treatments including stereotactic radiotherapy, 3D treatment planning, and treatment planning for brachytherapy to assure that the resident can autonomously plan and perform these procedures

Ability to formulate valid critique of treatment and treatment plans for quality assurance purposes

**Academic**

Self-learning focusing on areas of interest or where experience may be lacking, with more in-depth reading on all aspects of academic oncology.

Demonstrable ability to design, either in theoretical or actual form, clinical studies pertinent to the field.
  - Understanding of Institutional Review Board and Human Subjects protection-related issues

Satisfactory completion of research project(s) (quantity of projects in accordance with departmental policy on resident research) sufficient to assure that the resident:
  - Has submitted abstracts and manuscripts to peer reviews journals
  - Has presented research at national meetings
  - Has a level of comfort with such research to assure that he/she can continue autonomously in the future.

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\(^2\) In some instances, it may be considered premature to expect that a research project will be at a point sufficient to warrant presentation or manuscript submission. These exceptions will be taken into account.

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