I. Goals of the Residency Program
The goal of the residency program is to educate and train physicians to be skilled in the practice of Radiation Oncology, and to be caring and compassionate in the treatment of patients. Physicians completing the residency training program will be eligible to take the written and oral board examinations given by the American Board of Radiology (ABR) and will also be able to demonstrate proficiency in all six competencies.

A. The resident will be able to demonstrate clinical competence in clinical Radiation Oncology, including understanding the indications for irradiation and special therapeutic considerations unique to each site and stage of disease.

B. The resident will learn standard radiation techniques, including simulation and treatment planning and the use of standard treatment modalities including superficial, megavoltage, and electron beam radiation. The resident will also learn the technical aspects of radiosurgery, conformal therapy, three-dimensional treatment planning, total body irradiation, total skin irradiation, high dose rate brachytherapy, and strontium plaque therapy.

C. The resident will learn the principles of normal tissue tolerance to radiation, tumor dose response to radiation, altered fractionation schemes, and the use of combined modality therapy.

D. The resident will learn the basic principles of medical physics and the application to radiation treatment.

E. The resident will obtain competency to the level expected of a new practitioner in the 6 areas below. Competency of these six areas will be measured during end of rotation evaluations.
   1. Patient Care – Residents will be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health.
   2. Medical Knowledge – Residents will be able to demonstrate knowledge about established evolving biomedical, clinical, and cognate (e.g. epidemiological and social-behavioral) sciences and the application of this knowledge to patient care.
   3. Practice-Based Learning and Improvement – Residents will be able to investigate and evaluate their patient care practices, appraise and assimilate scientific evidence, and improve their patient care practices.
4. **Interpersonal and Communication Skills** – Residents will be able to demonstrate interpersonal and communication skills that result in effective information exchange and teaming with patients, their patients families, and professional associates.

5. **Professionalism** – Residents will demonstrate a commitment to carrying out professional responsibilities, adherence to ethical principles, and sensitivity to a diverse patient population.

6. **Systems-Based Practice** – Residents will demonstrate an awareness of and responsiveness to the larger context and system of health care and the ability to effectively call on system resources to provide care that is of optimal value.

II. **Objectives of the Residency Program**

   A. Residents should be able to demonstrate clinical competence in the following:

      1. Demonstrate the ability to perform an adequate history and physical.
      2. Demonstrate the ability to stage a patient with cancer and develop a management plan in conjunction with other disciplines.
      3. Demonstrate the ability to carry out a simulation including the treatment planning, field blocking, and anatomic data transcription.
      4. Demonstrate an understanding of dosimetry including the concepts of total dose, fractionation and overall time and understand the effects of different fractionation schedules on normal tissues.
      5. Demonstrate the ability to manage a patient during a course of radiation therapy.
      6. Demonstrate the ability to recognize and manage late complications of treatment.
      7. Demonstrate ethical and compassionate behavior in the care of cancer patients.
      8. Demonstrate organizational ability with respect to timeliness in clinic schedule and conferences.

   B. Residents should accomplish the following ACGME requirements:

      1. **Core Curriculum** – Residents will complete no fewer than 36 months of the 4 year program in clinical Radiation Oncology. Clinical exposure will include experience in gastrointestinal, gynecologic, genitourinary, breast, soft tissue and bone, skin, head and neck, lung, pediatric and central nervous system tumors. Requirements in Medical Oncology (adult and pediatric), Oncologic Pathology, and Diagnostic Imaging will be satisfied by participation in weekly/monthly multidisciplinary tumor conferences and integration of those topics into conference schedules. Each resident will also complete a one month rotation in
Diagnostic Imaging and Medical Oncology during their training. The remaining months of training must allow for advanced clinical training in areas applicable to clinical Radiation Oncology.

2. **Number of patients** – Residents will irradiate no fewer than 150 patients per year or a minimum of 450 patients during the clinical radiation oncology rotation. Residents should not treat more than 250 patients in any one year. They must also treat no fewer than 12 pediatric patients of whom a minimum of 9 have solid tumors during their residency.

3. **Number of implants** – Residents must perform at least 5 interstitial implants in at least 5 patients and assist in an additional 5 implants in at least 5 patients and perform 10 intracavitary implants in at least 5 patients plus assist in 10 implants in at least 5 patients.

4. **Radioimmunotherapy** – Residents must participate in the administration of no fewer that 6 procedures using radioimmunotherapy, other targeted therapeutic radiopharmaceuticals, or unsealed radioactive sources. Three of the cases must be involving oral administration and three must be involving parenteral administration.

### III. Didactic Curriculum of the Residency Program

A. **Chart Rounds** – All residents are required to attend weekly chart rounds held every Wednesday morning. They must be ready to discuss and answer questions regarding their patient's under treatment.

B. **Journal Club** – All residents are expected to keep up with the current oncology literature. Journal Club is held on the third Tuesday of each month and facilitates discussion of current articles.

C. **Tumor Boards** – All residents are expected to attend and actively participate in all general tumor boards as well as those appropriate to the service they are rotating on. (see Tumor Board Schedule)

D. **Lectures** – All residents are expected to attend Department of Radiation Oncology clinical lectures as well as the HCI seminar series and various departmental Grand Rounds given relating to topics in Oncology. A monthly schedule of these lectures and other events will be distributed by the chief resident.

E. **Radiobiology Lecture Series** – PGY-2, 3, & 4 residents are required to attend this lecture series delivered annually to gain an in-depth understanding of radiation biology, including normal tissue tolerance, tumor response to radiation and tumor biology.

F. **Physics Lecture Series** – PGY-2, 3, & 4 residents are required to attend the lecture series delivered annually to gain an in-depth understanding of medical physics and the application to radiation.

G. **Statistics** – All residents are required to attend the lecture series delivered annually every other academic year to gain in-depth understanding of medical statistics and the application to radiation.
H. Research – All residents shall be required to engage in an investigative research project under faculty supervision. Six months of research time may be allotted to each resident usually in their PGY-3 year. The project must be outlined in a research proposal with the mentor and Program Director’s approval before the beginning of the rotation. The results of such project should be suitable for publication in peer-reviewed scholarly journals or presentation at scientific meetings.

I. Resident Presentations – Each resident is required to give two oral presentations at Thursday conference during the academic year. The dates for these presentations will be distributed by the chief resident.

IV. Evaluation of Resident Performance
   A. Written Evaluations – (for a more detailed description see “Department of Radiation Oncology Evaluation Policy”).
      1. End of Rotation Evaluation – Each resident will be evaluated by the clinical faculty in writing at the end of each clinical rotation. The clinical faculty evaluates all aspects of the residents training including the six general competencies.
      2. Direct Observation Forms – Each resident will be directly observed by the clinical faculty at least twice during each clinical rotation. The clinical faculty will observe the performance of the residents during specific cases of simulation treatment process and brachytherapy procedures.
      3. Semi-Annual 360° Evaluation (December and June) – Each resident will undergo a 360° evaluation by the departments support staff, including nurses, therapists, physics staff, and other professional staff.
      4. Final Evaluation – The Program Director will provide a written final evaluation for each resident who completes the program, or changes to another program, whether at the University of Utah School of Medicine or another institution. This evaluation will verify that the resident has demonstrated sufficient professional ability to practice competently and independently.
      5. All evaluations will be placed in the resident’s program file and will be available for review by the resident upon request.

B. Semi-annual Review (January and July) – The Program Director will meet with each resident to discuss their written evaluations, the residents work hours and case logs, as well as their research in progress, plans, goals, and any areas of concern.

C. Resident case logs – As mandated by the ACGME the resident must keep a detailed, well-organized, and accurate log of all patients simulated, procedures performed and observed, and treatment modalities used.

D. Examinations
   1. ACR In-Training Exam – Annually in March a written examination is administered through the American College of Radiology. The exam covers physics, radiobiology and clinical
oncology questions. This exam is intended to prepare residents for the written board examinations. The exam results help residents identify areas that they need to improve their basic science or clinical knowledge. Exam scores are used as a performance measure. As of 1/31/01 departmental policy mandated a 50% pass rate on the in-service exam in order for the resident to qualify for the national ABR written exam.

2.  Physics Raphex Exam – Annually in June (at the end of the Physics lecture series) a written exam is administered to help residents evaluate their knowledge of radiation physics. The exam scores are not used as a performance measure but rather to help the resident prepare for written board examinations.

3.  Radiobiology Exam – Annually in June (at the end of the Radiobiology lecture series) a written exam is administered to help residents evaluate their knowledge in the area of radiobiology. The exam scores are not used as a performance measure but rather to help the resident prepare for written board examinations.

V. Criteria for Promotion, Corrective Action, Probation, and Dismissal

A.  Promotion – Residents must achieve an average rating of 4 or more on each area of their written evaluations to be promoted.

B.  Corrective Action, Probation, and Dismissal - Any area of the written evaluation that has an average rating of 3 or below constitutes automatic probation and must be rectified on re-evaluation within 2 months.

1.  The evaluation will be immediately discussed with the resident and specific recommendations for corrective action will be written and verbally discussed.

2.  The Radiation Oncology Graduate Education Committee (Chairman, Program Director, Medical Director, & Chief Resident) will be notified.

3.  Academic probation may be instituted if the resident has failed to show significant progress during the period of corrective action.

4.  The resident may appeal a probation decision that he or she deems inappropriate. The resident will be allowed to refute in writing any evaluation and this will be placed in their file. The resident can discuss the decision with the Radiation Oncology Graduate Education Committee.

5.  Any unethical behavior, incompetent, or poor academic performance that is not rectified after a probation period may result in the resident being dismissed from the program.

6.  Please see the “Department of Radiation Oncology Due Process Policy” for a more detailed description of this process.

VI. Work Hours, Call Protocol, and Supervision Policy
A. **Work Hours** - The residents are expected to be available during the routine clinic hours which are from 8:00 AM to 5:00 PM Monday through Friday. Conferences and tumor boards may require a presence prior to, or after, normal clinic hours (see “Works Hours Policy and Call Protocol” for a more detailed description).

B. **Call Protocol** - Call is for one week at a time every third or fourth week. The resident must be available by beeper when on call but call is taken from home. A faculty is always on call with the resident (see “Works Hours Policy and Call Protocol” for a more detailed description).

C. **Faculty Supervision** – Residents will always have faculty supervision when directly interacting with any patient. During clinic hours, the faculty assigned to a given patient supervises any resident interactions with that patient. After hours, the on-call faculty provides resident supervision for all patient related matters (see “Resident Supervision Policy” for a more detailed description).