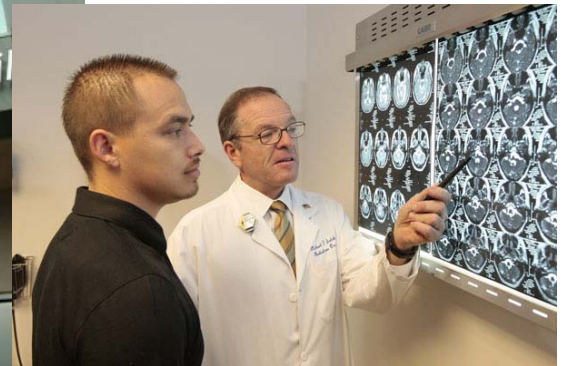




DAVID GEFFEN SCHOOL OF MEDICINE AT UCLA RESIDENCY TRAINING PROGRAM MANUAL DEPARTMENT OF RADIATION ONCOLOGY



David Geffen School of Medicine at the
University of California, Los Angeles
Ronald Reagan University Medical Center

Last Updated: March 2009

Compiled and Maintained by Kathy Rose, Residency Administrator.

Program information, policies, and procedures are subject to continuous review and the contents of this manual may be updated at any time.

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UCLA Department of Radiation Oncology Residency Training Program General Description

Basic Information

The UCLA Department of Radiation Oncology Residency Training Program is an educational program accredited by the Accreditation Council for Graduate Medical Education (ACGME). It offers a four-year long residency training in the specialty of radiation oncology, after the trainee (resident) has satisfactorily completed one year of clinical training (internship) in medicine, surgery, or a transitional program at any institute accredited by the ACGME. The Program has general objectives in accordance with the Institutional, Common and Specific Program Requirements for Residency Education as specified by the ACGME, and specific objectives issued by the Program Director and approved by the Residency Review Committee (RRC) for Radiation Oncology. The Program's curriculum and goals and objectives are designed by the Residency Curriculum Review Committee (RCRC) under the direction of the Program Director, and its administration is conducted with the assistance of the designated Residency Administrator. The Program is run under the joint supervision of the Chair of the Department of Radiation Oncology and the UCLA Graduate Medical Education Council (GMEC) through its Institutional Program Review mechanism.

Overall Goals

The overall goal of the Program is to train residents to acquire the necessary skills for their future practice of radiation oncology, as well as to help them excel in developing the professionalism of a compassionate and responsible physician. Furthermore, since radiation oncology is a specialty involving multidisciplinary collaboration, residents are expected to learn the art of interacting with other specialists in a collegial and professional manner as well as assuming professional leadership specifically in radiation oncology and more broadly in a general health-care environment. Because the specialty is founded on sound scientific principles, academic research in the field is highly encouraged. To fulfill such goals, the Program has specific learning objectives for each training year, with increasing level of expectation and responsibility for residents as they advance in training. As far as technical competency is concerned, the Program aims to prepare residents for the certification examination in radiation oncology by satisfying the requirements of the American Board of Radiology (ABR). Ultimately, the Program intends to train each resident to be an independent practitioner of a specific art of medical healing based on proven scientific knowledge, acquired clinical wisdoms, and high ethical standards.

Program Description

The Program faculty consists of 6 radiation oncologists, as well as 6 medical physicists and 4 radiation biologists. The Department houses 4 megavoltage linear accelerators (LINAC) and one CT Simulator. Brachytherapy techniques with either high-dose-rate (HDR) after-loading or low-dose-rate (LDR) – both interstitial and intracavitary – are available. The Department is an integral part of an interdepartmental graduate program (UCLA Graduate Division of Biomedical Physics) training professional medical physicists, and thus is very active in the academic research and development in the state-of-art radiation therapy technology. Furthermore, the Department also houses a world-renowned cancer biology research division (UCLA Division of Molecular and Cellular Biology), and can provide any interested resident superb training in bench-type cancer biology research. As part of the NCI-accredited UCLA Jonsson Comprehensive Cancer Center, the Department provides the residents an excellent training atmosphere for multi-disciplinary cancer research and care.

The overall length of the residency training in Radiation Oncology is 48 months. In accordance with the Program Requirements for Residency Education specified by the ACGME, at least 36 months will be spent by the resident in clinical radiation oncology at the UCLA Medical Center (Westwood campus) and its integrated program at the Veteran's Administration, West Los Angeles (VAWLA). Specific guidelines for rotations are detailed in another section of the Goals & Objectives.

Required rotations may be instituted as needed to provide residents with the required cases for their training, including pediatric oncology at Children's Hospital of Los Angeles (CHLA). Similarly, arrangement can be made for residents to take electives at other academic institutes and affiliated programs, but only with prior approval from the Program Director and under the auspice of the Residency Curriculum Review Committee.

The required training in medical oncology, oncologic pathology, and diagnostic imaging will be fulfilled either by attending regular multidisciplinary cancer conferences, or by rotating through the respective specialty departments for full-time training.

Scholarly activity is a requirement for all residents, regardless whether one is interested in a career in academic medicine or private practice. Presentation of a submission-ready manuscript is required to obtain a certificate of completion, and may be clinical, health services, translational or basic laboratory research. All are encouraged to submit the result of their research for presentation at scientific conferences as well as for peer-reviewed publication.

UCLA, Radiation Oncology is committed to teaching residents according to the following six core competencies as designated by the ACGME: *patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, professionalism, and system-based practice.*

1. Patient care (PC)
Provide patient care through safe, efficient, appropriately utilized, quality-controlled radiation therapy and effectively communicate with the referring physician and/or other appropriate individuals in a timely manner.
2. Medical knowledge (MK)
Engage in continuous learning using up to date evidence and applying appropriate state of the art radiation therapy techniques to meet the needs of patients, referring physicians and the health care system.
3. Practice-based learning and improvement (PBLI)
Participation in the evaluation of one's personal practice utilizing scientific evidence, practice guidelines and standards as metrics, and self-assessment programs in order to optimize patient care through lifelong learning.
4. Interpersonal and communication skills (IC)
Communicate effectively with patients, colleagues, referring physicians and other members of the health care team concerning informed consent, safety issues, and the indications for and the benefits, risks, and side effects of radiation, as well as the integration with other treatment modalities and the proper work-up and follow-up of patients. Communicate effectively with all members of the health care team regarding specific patient management issues.
5. Professionalism (P)
Commit to high standards of professional conduct, demonstrating altruism, compassion, honesty and integrity. Follow principles of ethics and confidentiality and consider religious, ethnic, gender, educational and other differences in interacting with patients and other members of the health care team
6. System-based practice (SBP)
Understand how the components of the local and national healthcare system function interdependently and how changes to improve the system involve group and individual efforts. Optimize coordination of patient care both within one's own practice and within the healthcare system. Consult with other healthcare professionals, and educate healthcare consumers, regarding the most appropriate utilization of radiation oncology resources.

Program Participating Sites and Integrated Programs

The primary training site for the program is the UCLA Department of Radiation Oncology located adjacent to the Ronald Reagan University Medical Center (RRUMC). Ronald Reagan UCLA Medical Center, designed by world-renowned architect I.M. Pei and his son, C.C. Pei, has taken hospital design to a whole new level; it will deliver world-class medical treatment using cutting-edge technology in a compassionate, patient-focused environment. With 520 large, sunny, private patient rooms featuring terrific views and daybeds for family members, wireless Internet access for patients and guests, multiple outdoor play areas for children and more, the new building maximizes personal attention and holistic healing. This is one of the first total replacement hospital projects to be built in accordance with the latest California seismic safety requirements as a result of the 1994 Northridge earthquake.

The one million-plus square foot, 10-story structure (eight above ground) is situated on four acres at the southwest corner of Westwood Plaza and Charles E. Young Drive South. The hospital encompasses the operations of Ronald Reagan UCLA Medical Center, Stewart and Lynda Resnick Neuropsychiatric Hospital at UCLA and Mattel Children's Hospital UCLA.

Ronald Reagan University Medical Center
757 Westwood Plaza
Los Angeles, CA 90095
(310) 825-9111
([here for Maps and Directions](#))

The clinic and administrative department are located in the Peter Morton 200 Medical Plaza Building within the UCLA Medical Plaza. Radiation Oncology is on the B2 level of the 200 Medical Plaza Building.

UCLA Department of Radiation Oncology
200 UCLA Medical Plaza, Ste. B265
Los Angeles, CA 90095-6951
Telephone: (310) 825-9771
([here for Maps and Directions](#))

Consultation services are also provided to patients of the UCLA Santa Monica Hospitals. Patients are seen on the ward at the Santa Monica Hospital, located approximately 20 minutes southeast of the Westwood campus.

UCLA Santa Monica Hospital
1225 15th Street
Santa Monica, CA 90404
([Monica Hospital Website](#))

The Veteran's Administration, West Los Angeles (VAWLA) is the primary integrated program site. The VAWLA is conveniently located within 10 minutes of the primary training site, just down Wilshire Boulevard.

Veteran's Administration, West Los Angeles
11301 Wilshire Blvd.
Los Angeles, CA 90073
Phone: (310) 478-3711
([West Los Angeles Website](#))

Program Faculty and Staff

UCLA is a multi-disciplinary academic institution, and offers a dynamic training opportunity for affiliate staff, medical students, resident physicians, and researchers. As such the program's teaching faculty have a broad spectrum of clinical expertise, research interests, and varying outside activities. The didactic goals & objectives are supported by both the department's teaching faculty, as well as voluntary faculty from the community and other cancer disciplines.

Per ACGME requirements, the program has a single Program Director responsible for the oversight of all program activities. He directs the program under the auspice of the Chair of Radiation Oncology, and is supported by a dedicate Program Administrator. Below is a listing of the department teaching faculty and program support personnel.

Chair	Michael L. Steinberg, M.D., Professor
Vice-Chair, DMCO	William McBride, D.Sc., Ph.D., Professor
Residency Director	Steve P. Lee, M.D., Ph.D., Associate Professor
Residency Administrator	Kathy Rose, Assistant to the Chair
Westwood Clinical Faculty	Christopher King, M.D., Associate Professor Percy P. Lee, M.D., Ph.D., Assistant Professor Michael T. Selch, M.D., Professor
Westwood Physics Faculty	Nzhde Agazaryan, Ph.D., Associate Professor John J. DeMarco, Ph.D., Associate Professor
Westwood DMCO Faculty	Nicholas Cacalano, Ph.D., Associate Professor Kei Iwamoto, Ph.D., Assistant Professor Frank Pajonk, Ph.D., M.D., Associate Professor
VAWLA Site Director	Ahmad Sadeghi, M.D.
VAWLA Clinical Faculty	Guy Juillard, M.D., Professor Emeritus
Voluntary Teaching Faculty	David Wallenstein, M.D., Assistant Professor Palliative Care & Pain Medicine

Residency Curriculum Review Committee

A program-wide Residency Curriculum Review Committee (RCRC) provides constant supervision and evaluation of each resident's performance, as well as the overall effectiveness of the training program. The RCRC is lead by the Residency Program Director and Department Chair. The faculty of the primary institution makes up the main body of the committee. Teaching faculty from the affiliated and integrated institutions, representatives from the departmental divisions and others are integrated into the RCRC meetings, at the discretion of the Program Director and Chair.

Core and Clinical curriculum are created and modified by the RCRC in accordance with ABR, ACGME, and UCLA GME policies and procedures. Changes to the curriculum are logged in the Residency Training Manual and posted to the departmental website.

Rotational goals and objectives are created by the faculty supervisor for each service and are reviewed by the committee at large for appropriateness and compliance with ACGME guidelines. The rotation evaluations are used to determine if the objectives have been met and adjusted as necessary to achieve desired outcomes.

Multiple evaluations of the resident's performance are compiled into an individual resident portfolio. Resident portfolios are then presented to the RCRC for review and comment. The RCRC will provide feedback to the Program Director to assist in the semi-annual evaluation and individual training plans for each resident. Remediation actions may be proposed based upon the recommendations of the group as needed.

Mechanism of Evaluation for Residents' Performance

Multiple evaluation tools will be used to guide and assess residents during the course of training. Residents will receive written evaluations on a semi-annual basis, which will include clinical case log review and the multiple evaluation processes detailed below.

All evaluations will be reviewed by the Residency Curriculum Review Committee (RCRC) and utilized by the Program Director to provide constructive criticism, direct training, and when necessary establish individualized training plans. Examples of the evaluation forms currently in use may be found in Appendix A of this manual and on the residency website.

Direct Observation and Feedback

During each rotation residents will receive direct observation and feedback from the rotation's supervising faculty.

Rotation Evaluation

Each rotation will be evaluated by both the faculty supervisor and the resident physician. Rotations have defined Goals and Objectives which are detailed in the Core Clinical Curriculum section of this manual. Evaluations will assess the resident's successful completion of the learning and clinical objectives of the rotation.

Self-Assessment/Reflection Form

A commitment to ongoing self-assessment and self-reflection skills are taught and reinforced by the Self-Assessment and Reflection form. Each resident needs to complete the Self-Assessment/Reflection Form prior to each 6-month formal meeting with program leadership.

360° Global Evaluation

Semi-annually department staff members will be asked to assess resident physicians on their interpersonal and communications skills and professionalism. Two members of each working division will be polled at random every 6 months. These evaluations will be included in the semi-annual review meeting with the Residency Program Director.

Written Examinations

The technical competency/medical knowledge adequacy is assessed periodically by national in-service examinations:

1. Annual In-Service Examinations (clinical, physics, biology, and statistics)
2. RAPHEX (Radiological Physics Practice Examinations)
3. RABEX (Radiobiology Practice Examinations)

Mock Orals and Oral Review

Resident physicians are prepared to take the oral boards through Mock Orals and Oral reviews. Mock Orals are performed in conjunction with other faculty members and radiation oncologists from other residency training programs.

Oral review and presentation skills are assessed during Morning Rounds, Chart Rounds, and other clinical treatment planning rounds.

Scholarly Activity and Research

Each resident must submit and successfully complete no less than one research project or scholarly activity, which will be assessed by the RCRC and the department's Clinical Research Committee. Assessment will be based on the timeliness, content, overall structure of the project, as well as the completed manuscript for the project. Detailed expectations can be found in the Scholar Activity & Research Guidelines section of this manual.

Radiation Oncology Residency Program - Core Curriculum

The Core curriculum combines a Clinical Curriculum and a Didactic Curriculum which support the learning objectives of the training program, board certification requirements of the American Board of Radiology (ABR) and the program requirements of the ACGME. Each resident will be paired with a Clinical Mentor and/or a Research Mentor to help guide them in their professional growth during training.

The department offers three training pathways during residency, which allow for a self-directed approach to training. Residents will be expected to declare their pathway choice by the end of their first year in training.

Core Clinical Training Pathways

Academic/Research Pathway Requirements

- 36 months clinical (30 months UCLA, 6 months VA)
 - 6 months in each UCLA rotation
 - 6 months VA rotation
- 12 months research
 - Must take place in 2nd or 3rd year
 - Must be taken in 6 or 12 months blocks
 - Research Proposal Submission to the RCRC is required per the below basic outline here:
 - Must be submitted to Residency Curriculum Review Committee (RCRC) 3 months prior to intended time to commence research activity (may be in the PGY3 or PGY4 year only)
 - Research Proposals may address basic science research, translational research including clinical trial design and implementation, clinical science research , medical physics research, and health services research
 - Proposal details may be found in the Research Guidelines and References
 - Approval of Proposal is at sole discretion of the Program director with the advice and consent of the Department Chair
- Residents on research track are required to continue to attend and participate in all didactic educational sessions and rounds, including morning rounds, resident seminars, and translational conferences, Friday Morning Lectures Series, Friday Noon Didactics Series, as required during the research year.

Academic/Research Pathway Rotations: The Academic/Research Pathway resident will rotate through the following rotations over the course of their 4 years of training, but not necessarily in this order. Refer to individual rotational goals and objectives for full description.

PGY2 – 1 st Year Resident	Orientation Green Service Pink Service Blue Service Purple Service	1 st week of initial rotation 3 months 3 months 3 months 3 months
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PGY3 – 2 nd Year Resident PGY4 – 3 rd Year Resident	VA Rotation Research Rotation CHLA/Required Rotation UCLA Clinical Elective Rotations	6 months 12 months 1 month 5 months
PGY5 – 4 th Year Resident	Green Service Pink Service Blue Service Purple Service	3 months 3 months 3 months 3 months

Holman Pathway Requirements (Prior ABR approval required)

- 27 months clinical training (24 months UCLA, 3 months VAWLA)
 - 3 - 6 months in each UCLA Rotation
 - 3 months VA Rotation
- 21 months research
 - Research Proposal Requirements per the ABR and the research guidelines set forth by the Residency Curriculum Review Committee (RCRC).
 - Grant Support is preferred for Holman Pathway residents.

Holman Pathway Rotations: The Holman Pathway resident will rotate through the following rotations over the course of their 4 years of training, but not necessarily in this order. Refer to individual rotational goals and objectives for full description.

PGY2 – 1 st Year Resident	Orientation Green Service Pink Service Blue Service Purple Service	1 st week of initial rotation 3 months 3 months 3 months 3 months
PGY3 – 2 nd Year Resident PGY4 – 3 rd Year Resident	Research Assignment VA Rotation	21 months 3 months
PGY5 – 4 th Year Resident/ Chief Resident	CHLA/Required Rotation Green Service Pink Service Blue Service Purple Service	1 month 2-3 months 2-3 months 2-3 months 2-3 months

Clinical Pathway Requirements

- 36 months UCLA
 - 9 months in each UCLA Rotation
- 6 months at the VA, West Los Angeles
- 3 months additional clinical rotation at UCLA, VAWLA, CHLA or other affiliated program per the discretion of the Program Director
- 3 months elective
 - 1 month CHLA
 - 2 months service rotation or discretionary elective per Elective Policy

Clinical Pathway Rotations: The Clinical Pathway resident will rotate through the following rotations over the course of their 4 years of training, but not necessarily in this order. Refer to individual rotational goals and objectives for further details.

PGY2 – 1 st Year Resident	Orientation Green Service Pink Service Blue Service Purple Service	1 st week of initial rotation 3 months 3 months 3 months 3 months
PGY3 – 2 nd Year Resident PGY4 – 3 rd Year Resident	Green Service Pink Service Blue Service Purple Service VA Rotation CHLA/Required Rotation UCLA Clinical Rotations	3 months 3 months 3 months 3 months 6 months 1 month 5 months
PGY5 – 4 th Year Resident	Green Service Pink Service Blue Service Purple Service	3 months 3 months 3 months 3 months

Core Required Clinical Rotations/Services

Each Rotation has a Faculty Supervisor, who is responsible for the Clinical Training of the rotation. The Goals & Objectives for each of the Core Required Rotations is defined later in this manual. The following is a brief summary of each of the required rotations.

The Faculty Supervisor will review with the resident their individual expectations, as well as the training objectives for the rotation at the beginning of each rotation.

<p>Green Rotation</p> <p>Faculty Supervisor: Steve P. Lee, M.D., Ph.D.</p> <p>Rotation Information: 6 – 9 months during training, 3 month intervals</p>	<p><u>Typical Clinical Cases:</u> Head and Neck Cancers Genitourinary Cancers Breast Cancers Gynecological Cancers</p> <p><u>Required Tumor Boards:</u> Breast Cancer Tumor Board Head & Neck Tumor Board Gyn Onc Tumor Board</p>
<p>Pink Rotation</p> <p>Faculty Supervisor: Michael L. Steinberg, M.D.</p> <p>Rotation Information: 6 – 9 months during training, 3 month intervals</p>	<p><u>Typical Clinical Cases:</u> Head and Neck Cancers Genitourinary Cancers Breast Cancers Gynecological Cancers</p> <p><u>Required Tumor Boards:</u> Breast Cancer Tumor Board GU Tumor Board</p>
<p>Purple Rotation</p> <p>Faculty Supervisor: Michael T. Selch, M.D.</p> <p>Rotation Information: 6 – 9 months during training, 3 month intervals</p>	<p><u>Typical Clinical Cases:</u> Pediatrics Sarcomas Central Nervous System (CNS) Stereotactic Radiosurgery – Cranial & Spinal Brain Cancers Lymphoma Lung Cancers</p> <p><u>Required Tumor Boards:</u> Pediatric NeuroOncology General Pediatrics Adult NeuroOncology (Brain) Pituitary Musculoskeletal Lymphoma Stereotactic Radiosurgery Thoracic Oncology</p>

<p>Blue Rotation</p> <p>Faculty Supervisor: Percy P. Lee, M.D.</p> <p>Rotation Information: 6 – 9 months during training, 3 month intervals</p>	<p><u>Typical Clinical Cases:</u> Lymphomas Thoracic Stereotactic Body Radiosurgery (liver, hepatobiliary, pancreas, thorax) Hepatobiliary Cancers Gastrointestinal Cancers</p> <p><u>Required Tumor Boards:</u> Thoracic Oncology Gastrointestinal Hepatobiliary Stereotactic Radiosurgery Pancreatic (Surgery A)</p>
<p>Veteran’s Administration, West Los Angeles (VA) Rotation</p> <p>Faculty Supervisor & Teaching Faculty: Ahmad Sadeghi, M.D. Guy Juillard, M.D.</p> <p>Rotation Information: 6 months during training, 1 block</p>	<p><u>Typical Clinical Cases:</u> Thoracic Genitourinary Cancers Head and Neck Cancers Gastrointestinal Cancers</p> <p><u>Required UCLA Tumor Boards:</u> Revlon Breast Center Multi Clinic/Tumor Board</p> <p><u>Required VA Tumor Boards:</u> Per current VA Goals & Objectives.</p> <p><u>Required UCLA Meeting Attendance:</u> Thursday Noon Didactic Sessions Friday Morning Lecture Series Friday Noon Didactics Sessions</p>
<p>Children’s Hospital, Los Angeles</p> <p>Faculty Supervisor:</p> <p>Required 1 month rotation</p>	<p><u>Typical Clinical Cases:</u> Pediatric Cancers</p> <p><u>Required Tumor Boards:</u> Per current rotation Goals & Objectives.</p>

Residency Training Program Goals and Objectives:

The Department of Radiation Oncology at UCLA is dedicated to the education and training of resident physicians in the art of clinical patient care for patients with cancer and other conditions requiring the use of radiation therapy in the management of their overall care.

The clinical training in radiation oncology is appropriately broad in scope and is designed to provide the resident with a firm understanding of the following concepts:

- The etiology, epidemiology and natural history of malignant disease
- Special considerations unique to each cancer type
- Indications for and outcomes of radiation therapy
- Thoughtful treatment planning to optimize the delivery and distribution of radiation
- Standard radiation therapy techniques for dose delivery
- The use of innovative and investigational therapeutic modes, including conformal, stereotactic radiosurgery and intensity modulated radiation techniques
- Normal tissue radiosensitivity and tumor radio responsiveness
- Integration of the other standard therapeutic modalities (surgery and systemic therapy) in disease eradication within a multidisciplinary framework
- Creative laboratory modeling to simulate clinical problems

Residents are trained in the use of various radiation therapy techniques including megavoltage and electron therapy, computerized treatment planning and simulation, intracavitary and interstitial brachytherapy techniques, brain and body stereotactic radiosurgery techniques and the use and/or understanding of altered fractionation schedules, total body irradiation in the setting of bone marrow transplantation, radiosensitizers and protectors, and radiolabelled antibody therapy.

During the course of training, residents are expected to become familiar with clinical investigations, biostatistics, epidemiology, computer data management and analysis, ethical considerations in investigation, and biomedical writing. This is accomplished through the development of a research project, participation in monthly journal clubs, and other didactic training sessions.

Training Core Competencies:

Emphasis is placed upon the development and evaluation of the six core competencies of an independent and competent Radiation Oncologist, and as defined by the Accreditation Council for Graduate Medical Education (ACGME).

1. Patient care (PC) - Provide patient care through safe, efficient, appropriately utilized, quality-controlled radiation therapy and effectively communicate with the referring physician and/or other appropriate individuals in a timely manner.
2. Medical knowledge (MK) - Engage in continuous learning using up to date evidence and applying appropriate state of the art radiation therapy techniques to meet the needs of patients, referring physicians and the health care system.
3. Practice-based learning and improvement (PBLI) - Participation in the evaluation of one's personal practice utilizing scientific evidence, practice guidelines and standards as metrics, and self-assessment programs in order to optimize patient care through lifelong learning.

4. Interpersonal and communication skills (IC) - Communicate effectively with patients, colleagues, referring physicians and other members of the health care team concerning informed consent, safety issues, and the indications for and the benefits, risks, and side effects of radiation, as well as the integration with other treatment modalities and the proper work-up and follow-up of patients. Communicate effectively with all members of the health care team regarding specific patient management issues.
5. Professionalism (P) - Commit to high standards of professional conduct, demonstrating altruism, compassion, honesty and integrity. Follow principles of ethics and confidentiality and consider religious, ethnic, gender, educational and other differences in interacting with patients and other members of the health care team.

Shows highest level of respect and consideration for patients, fellow residents, medical students, departmental staff, and faculty including meeting all clinical and academic responsibilities in a timely manner. Demonstrates cooperation, collegiality, and an ability to work with others within the policies and procedures of the Department. Shows ability to adapt to change and to the other stresses common to the delivering of high quality medical care.

6. System-based practice (SBP) - Understand how the components of the local and national healthcare system function interdependently and how changes to improve the system involve group and individual efforts. Optimize coordination of patient care both within one's own practice and within the healthcare system. Consult with other healthcare professionals, and educate healthcare consumers, regarding the most appropriate utilization of radiation oncology resources.

In compliance with American Board of Radiology board certification and ACGME training requirements, trainees will receive 36 months of clinical radiation oncology training. Residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of health problems and the promotion of health. The program will ensure that resident trainees have adequate numbers and variety of patients; and meet the ACGME training requirements. The detailed specific requirements can be viewed on the ACGME website ([Program Requirements](#)); and are included as Appendix B.

Residents will see a broad scope of cases, and manage their care. Cases provided for trainees will include experience with lymphomas and leukemias; gastrointestinal, gynecologic, genitourinary, breast, soft tissue and bone, skin, head and neck, lung, pediatric, and central nervous system tumors; and treatment of benign diseases for which radiation is utilized. In addition, the training program must provide instruction in the physics, radiation and cancer biology, and clinical applicability of the following areas: radiosurgery, intraoperative radiation therapy, three-dimensional conformal treatment planning and delivery, radioimmunotherapy, unsealed sources, total body irradiation as used in stem-cell transplantation, total skin irradiation, high- and low-dose rate brachytherapy, hyperthermia, kilovoltage irradiation, plaque therapy, particle therapy, and any other components that may be developed as they apply to the core curriculum.

Training Case Requirements:

Minimum numbers of patient therapy cases are required for competence and graduation. A detailed case log must be maintained by each resident physician, and will be reviewed with the Program Director for case compliance no less than every six months during training. ACGME requires Radiation Oncology residents to use the ACGME electronic case log system. ([here to Login to the Residency Case Log System](#))

Per ACGME training requirements, each resident physician must meet the following detailed patient care requirements:

- 1) External Beam Irradiation Requirements
 - a) minimum of 450 over the four years of residency
 - b) A resident should not treat more than 250 patients with external beam irradiation in any one year.
 - c) Only cases for which the resident has primary responsibility performing the simulation may be counted.
 - i) In certain circumstances, the procedures in radiation therapy and patient availabilities justify counting a patient twice for purposes of resident logs. External beam patients may be counted twice when either of the following circumstances are met:
 - (1) a second resident participates actively in the simulation of a separate anatomic site or substantial volume reduction for a given course of therapy, requiring a separate simulation with a different isocenter that represents sequential, non-concurrent therapy (e.g., a posterior fossa boost planned by a second resident following the planning and initial treatment by another resident; or a boost to the primary tumor site in the pelvis when the initial whole pelvic treatment was planned by another resident.)
 - (2) a second course of therapy to a different site, treated sequentially for a new indication, may be counted a second time if the new area is simulated by the same resident or by a different resident (e.g., a lung cancer patient treated with chest radiotherapy who subsequently develops brain metastases and is treated with cranial radiotherapy.)
- 2) Brachytherapy Case Requirements
 - a) must perform no fewer than five (5) interstitial implants
 - b) must perform no fewer than fifteen (15) intracavitary implants.
 - i) Resident involvement should include planning, review of dosimetry, and hands-on participation in a significant portion of the implantation procedure. Separate applications of an implant in a given patient (such as two separate intracavitary applications) may be counted as two separate procedures. However, multiple fractions of a single application (such as multiple fractions of an interstitial implant) may be counted only once. Only one resident may count a specific application.
- 3) Radioimmunotherapy and Radiopharmaceuticals Requirements
 - a) must participate in the administration of no fewer than six (6) procedures using radioimmunotherapy, other targeted therapeutic radiopharmaceuticals, or unsealed radioactive sources.
- 4) Pediatric Case Requirements
 - a) must treat at least 12 pediatric patients of whom a minimum of nine (9) have solid tumors.
- 5) Stereotactic Case Requirements
 - a) must participate in the treatment planning and administration of stereotactic radiosurgery in at least ten (10) patients.

- i) Stereotactic radiosurgery may be delivered by a variety of available technologies using image guided stereotactic localization procedures and may be either intracranial or extracranial. As defined, radiosurgery may be administered in a single fraction or extended to a maximum of five fractions. More protracted courses of stereotactic radiation should be classified as external beam radiation cases.
- 6) Follow Up Care Requirements
- a) Residents must follow-up with irradiated patients, including pediatric patients, on an inpatient or outpatient basis as a required part of resident training; and, this must be demonstrated by the program to ensure that residents have the opportunity to learn about the problems of recurrent and disseminated tumors and of late aftereffects and complications of radiation therapy.

Training Case Requirements – Holman Pathway:

In Radiation Oncology, Holman Pathway residents are expected to meet the same minimum requirements for special procedures (including interstitial brachytherapy, intracavitary brachytherapy, and unsealed sources) and the same pediatric caseload as traditional residents outlined in the program guidelines of the RRC in radiation oncology. For adult external beam cases, Holman Pathway residents are expected to simulate a minimum of 350 cases over their 27 months of clinical training instead of 450 cases during the 36 months of standard clinical training.

Learning Objectives by Training Year

The program is designed to allow progressive responsibility at each level of training, while still providing adequate and appropriate supervision. Detailed below are the Learning Objectives for each level of training.

Learning Objectives - PGY2 Training Year

The first-year (PGY2) resident is expected to remain on clinical duty for the entire academic year at the UCLA Medical Center. In July, a period of 1 to 2 weeks will be devoted to orientation to the clinic, department, and DGSOM. Throughout the remainder of the first year the PGY2 resident will be assigned to the core clinical rotations, and will be expected to successfully complete each rotation based on the Goals and Objectives set forth for each individual rotation. The resident will be expected to identify the training pathway they wish to pursue prior to the end of the PGY2 year.

During the PGY2 training year residents must achieve fundamental understanding of the following learning objectives:

- Basic oncologic issues associated with all types of malignancies (and benign diseases for which radiation therapy also plays a significant role), including: anatomy, epidemiology, natural history, basic biology/pathology, clinical presentation, diagnostic work-ups, staging, and prognostic factors.
- Basics of radiotherapy physics and radiation biology
- Finish the initial reading of the required textbooks in both subjects by the end of the year
- Basic statistics and methodology as used in oncologic research should be learned
- Basic knowledge in cancer pathology and diagnostic imaging techniques should be acquired
- Utilize computers and other electronic tools for exchange of academic information and ideas
- Utilize effective communication techniques for case and didactic presentations

Specific duties for PGY2 residents on all rotations:

- Morning Rounds preparation
- Acquire a basic understanding of the principle & practice of radiation treatment
- Attend all relevant tumor boards and cancer conferences

Learning Objectives - PGY3 Training Year

The second-year (PGY3) resident will have identified which training pathway he/she wishes to pursue. He/she will be assigned to core clinical rotations, elective rotations, and/or research rotations dependent upon the individual learning plan established in the first year of training, and will be expected to successfully complete each rotation based on the Goals and Objectives set forth for each individual rotation.

During the PGY3 training year residents must master the PGY 2 learning objectives and begin to build fundamental understanding of the following learning objectives:

- The general therapeutic management for all types of oncologic diseases, with specific regards to the interplays among the three mainstay treatment approaches: surgery, radiotherapy, and chemotherapy
- Be able to search and understand relevant literature data, trials, and protocols for each malignancy
- Demonstrate the ability to critique any medical literature objectively in order to synthesize useful knowledge
- Basic physics dosimetry, radiobiological and cancer biology principles as utilized in clinical radiation oncology practice should be mastered

Specific duties for PGY3 residents on all rotations:

- Morning Rounds preparation
- Journal club preparation, presentation, and discussion
- M&M case preparation, presentation, and discussion
- Continue to develop an understanding of the principles & practices of radiation treatment
- Attend all relevant tumor boards and cancer conferences

Learning Objectives - PGY4 Training Year

The third year (PGY4) resident will have declared and begun training requirements per the track chosen in the PGY3 year. He/she will be assigned to core clinical rotations, elective rotations, and/or research rotations dependent upon the individualized learning plan established at the end of their PGY2 training year. The resident will be expected to successfully complete each rotation based on the Goals and Objectives set forth for each individual rotation.

During the PGY4 training year each resident is expected to master those skills acquired during the previous two years of training, as well as become proficient in the following learning objectives:

- Application of knowledge acquired during the previous two years to specific patient case management.
- In addition, they should become proficient in utilizing any novel physics technology like stereotactic radiation treatment, intensity modulated radiation therapy (IMRT), and various kinds of brachytherapy (interstitial, intracavitary and intravascular) used in modern radiotherapy practice.
- They should also demonstrate sufficient skill to apply modern radiobiological principles in clinical setting, and familiarization with ongoing institutional and national cancer treatment guidelines.

Specific duties for PGY4 residents on all rotations:

- Morning Rounds preparation
- Journal club preparation, presentation, and discussion
- M&M Case preparation, presentation, and discussion
- Presentation at the annual Department Research Seminar
- Continue to develop an understanding of the principles & practices of radiation treatment
- Attend all relevant tumor boards and cancer conferences

Learning Objectives - PGY5 Training Year

The fourth year (PGY5) resident is expected to remain on clinical duty for the entire academic year at the UCLA Medical Center. Each resident will be assigned a rotation as Chief Resident during their final year of training, and will be expected to show mastery of the knowledge and independent practice of Radiation Oncology. Throughout the remainder of the final year the PGY5 resident will be assigned to the core clinical rotations, and will be expected to successfully demonstrate independent practice for each rotation based on the Goals and Objectives set forth for each individual rotation.

During the PGY5 training year the resident will be assigned to perform the function of Chief Resident, and the following learning objectives:

- Should demonstrate superb leadership among all staff and fellow residents
- Excellent bedside manner in taking care of patients
- Professional attitude in interacting with colleagues from other medical specialties.
- Assist in the teaching of fellow residents, physicists, therapists, as well as medical students
- Regular departmental Morning Rounds is to be chaired by chief residents

- Active participation in multidisciplinary tumor boards as a representative from radiation oncology
- Chief Residents are also responsible for supervising, under the direction of the Program Director and Chief of Clinical Services, the overall clinical and didactic scheduling of all fellow residents in accordance with the program Goals & Objectives. The final review of each resident's performance before they graduate depends in large part on how effective they are as the Chief Resident.

Chief Resident Responsibilities:

- Coordinates Morning Rounds
- Coordination of department clinic, under supervision of the Chief of Clinical Services, including coordination among all supporting staff (physicists, therapists, nurses, administrative personnel)
- Oversee the daily clinical case assignments of fellow residents and reassigning cases as necessary to support the effective flow of the clinic
- Resident-faculty liaison for issues pertaining to the clinic
- Assign fellow residents to supervise medical students rotating through the Department
- Assign fellow residents for didactic teaching sessions for medical students
- Attend all relevant tumor boards and cancer conferences in the absence of the Faculty physician

Goals and Objectives – Individual Rotations

Green Rotation – Steve P. Lee, M.D., Ph.D.

Key to Core Competencies:	1 = Patient Care 2 = Medical Knowledge 3 = Practice-Based Learning & Improvement 4 = Interpersonal & Communication Skills 5 = Professionalism 6 = Systems-Based Practice
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Service Responsibilities/Assignments:	
Responsibility:	Competency:
<ul style="list-style-type: none"> Completion of weekly patient-on-treatment management, all related documentation, and treatment summaries. Appropriate preparation for weekly chart rounds. Appropriate sign out of patients at end of rotation (this should not be only a transfer of information, but rather a higher level information exchange and discussion). 	<ul style="list-style-type: none"> 1,2,3,4 1, 2,3,5,6 1,4,5,6

Additional Responsibilities:
<ul style="list-style-type: none"> Clinical educational opportunities – Each resident should maximize his/her case log and patient care experience by participating in patient care activity opportunities on other services where there is no resident assigned, during times when there are no scheduled patient care activities on his/her own service. The resident must obtain the service faculty’s approval to participate in these clinical opportunities. Multidisciplinary conferences & tumor boards – Each resident should participate in all multidisciplinary conferences and tumor boards related to other services, providing they do not conflict with their service activities.

Multidisciplinary conferences & tumor boards:
<ul style="list-style-type: none"> Breast Cancer Tumor Board Head & Neck Tumor Board Gyn Onc Tumor Board

Attending Responsibilities:
<ul style="list-style-type: none"> Describe learning objectives and expectations to the new resident on service at the beginning of the rotation. Provide interim feedback on resident’s performance, including areas requiring improvement and quality of dictation and documentation. Conduct end-of-rotation test of resident’s knowledge and understanding of patient care on service. Conduct end-of-rotation review and evaluation of resident’s performance.

Green Service – All PGY Levels:

All residents in all years will evaluate adult patients with Genitourinary (GI) cancers including kidney, ureter, bladder, prostate and urethra cancers; will evaluate adult patients with breast cancer; will evaluate adult patients with head & neck cancers; will evaluate adult patients with gynecologic cancers including ovarian, uterine, cervical, vaginal and vulva cancers. All patients are evaluated in the setting of a multidisciplinary team involving Radiation Oncologists, Urological Surgeons / Urologists, Breast Surgeons / Surgical Oncologists, Head & Neck Surgeons / Otorhinolaryngologists, Gynecological Oncologists, and Medical Oncologists.

All residents in all years will gain experience and proficiency in the management of these cancers during Radiation Oncology consultation, attendance of multidisciplinary tumor boards, radiation simulation, radiation treatment planning, weekly patient treatment checks, as well as follow-up clinics. We expect the residents to see patients in consultation, to see patients under treatment on a weekly basis, and all follow-up patients. The resident is expected to progress through the four years at UCLA Radiation Oncology and be proficient in the simulation and treatment planning of patients with using external beam techniques, including 3D conformal, 4D conformal, intensity modulated radiation therapy (IMRT), image guided radiation therapy (IGRT), as well as stereotactic body radiation therapy (SBRT) as they are applied to Genitourinary, Breast Cancers, Head & Neck, and Gynecological malignancies. Radiation Oncology Training is a graduated experience with more responsibility and decision making granted to the resident as they gain experience and expertise throughout their four years in residency. Residents of all years will be expected to treat all disease sites within the scope of this service as outlined below and use all appropriate techniques.

Learning Objectives for PGY2 and PGY3:

Medical Knowledge and Patient Care:

- A) Understand the natural history, clinical presentation, diagnostic workup for genitourinary, breast, head & neck, and gynecological cancers. Be able to apply current AJCC staging to all cancers and discuss treatment implications based on staging.
- B) Describe the anatomic features and draining lymphatics as they pertain to radiation field drawing and target volume delineation.
- C) Understand the epidemiology, risk factors, tumor markers, genetics, and potential preventive as well as screening methods for genitourinary, breast, head and neck, and gynecological cancers.
- D) Understand that the standard multidisciplinary approach for Genitourinary cancers may include:
 - a) Kidney CA / Renal Cell CA: Definitive or palliative treatments including surgery, chemotherapy / immunotherapy, as well as radiation therapy.
 - b) Ureter CA: Primary and post-operative adjuvant radiation therapy for ureteral/renal collection system cancer (renal pelvis & ureteral malignancies), including the combination with chemotherapy.
 - c) Bladder CA: Post-operative radiation therapy for resected bladder CA as well as definitive primary radiation therapy for unresectable cervical cancer. Role of chemo-radiation therapy in bladder preservation approaches.
 - d) Prostate CA: Primary surgery vs. primary radiation therapy for prostate cancer. Various treatment modality including external beam radiotherapy, permanent seed brachytherapy, and temporary high dose rate afterloading brachytherapy. Role of

precision oriented radiation technique such as intensity modulated (IMRT) and image-guided (IGRT) treatment.

- e) Urethral CA: Primary or adjuvant radiation therapy for both male and female urethral cancer.
- f) Early stage invasive breast cancer: Definitive treatments including surgery, chemotherapy, as well as radiation therapy. Role of radiation therapy in breast conservation treatment.
- g) Loco-regionally advanced breast cancer: Primary and post-operative adjuvant radiation therapy, including the combination with chemotherapy and hormonal therapy.
- h) Inflammatory breast cancer (IBC): Role of chemotherapy, surgery, and radiation therapy.
- i) Non-invasive breast cancer: Adjuvant radiation therapy for ductal carcinoma in situ (DCIS).
- j) Target volume delineation and treatment design: Standard two-field or three-field techniques.
- k) Nasopharyngeal CA: Definitive treatments including surgery, radiation therapy, as well as chemotherapy.
- l) Oropharyngeal CA: Primary or post-operative adjuvant radiation therapy for cancer of tongue base and tonsil, including the combination with chemotherapy.
- m) Hypopharyngeal CA: Primary or post-operative adjuvant radiation therapy for cancer of pyriform sinus and post-pharyngeal wall, including the combination with chemotherapy.
- n) Laryngeal CA: Primary or post-operative adjuvant radiation therapy for supraglottic, glottic, and infraglottic cancers, including the combination with chemotherapy.
- o) Oral cavity CA: Primary or post-operative adjuvant radiation therapy for oral cavity cancers, including tumors of oral tongue, floor of mouth, buccal mucosa, retromolar trigone, hard palate, upper & lower gingival, and lips. Role of chemotherapy.
- p) Nasal / Para-nasal Sinus tumors: Primary or post-operative adjuvant radiation therapy for cancers of para-nasal sinuses and nasal fossa. Role of chemotherapy.
- q) Skin CA: Primary or post-operative radiation therapy for well differentiated epithelial cancers as well as melanoma and other skin malignancies. Role of Mohs surgery and topical medical treatments.
- r) Non-epithelial tumors of head & neck: sarcomas, lymphomas, neuroendocrine tumors, vascular tumors, etc.
- s) Salivary gland tumors: Primary or post-operative adjuvant radiation therapy for cancers of major and minor salivary glands. Role of chemotherapy.
- t) Thyroid CA: Primary or post-operative adjuvant radiation therapy for cancers of thyroid, including papillary, follicular, medullary, and anaplastic cancers. Role of chemotherapy and radioactive iodine (RAI) treatment.

- u) Ovarian CA: Definitive or palliative treatments including surgery, chemotherapy, as well as radiation therapy.
 - v) Uterine CA: Primary and post-operative adjuvant radiation therapy for uterine cancer (endometrial cancer & uterine sarcoma), including the combination with chemotherapy.
 - w) Cervical CA: Post-operative radiation therapy for resected cervical CA as well as definitive primary radiation therapy for unresectable cervical cancer. Role of chemoradiation therapy.
 - x) Vaginal CA: Primary or adjuvant radiation therapy for vaginal cancer.
 - y) Vulvar CA: Primary or adjuvant radiation therapy for vulvar cancer.
- E) Know and apply principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories including principles of altered fractionation, chemoradiation sensitization, chemo-radiation-hormonal therapy sequencing, normal tissue tolerance and injury, as well as the use of various modalities of radiation therapy such as IMRT and accelerated partial breast irradiation (APBI).
- F) Learn to perform radiation therapy using various techniques, and understand prescription and dosimetry for each of the disease sites:
- a) Simulation techniques
 - i. standard two-field & three-field techniques
 - b) Dose and volume consideration and field managements depending on the location of disease, disease of interest, and normal tissue constraints.
- G) Be able to identify and manage radiation related side-effects including but not exclusive of dermatitis, mucositis, pneumonitis, dysphagia, odenophagia, xerostomia, hearing loss, vision impairment, neurocognitive effects, nausea, vomiting, diarrhea, dyspareunia, cytopenia, urinary frequency, dysuria, fatigue, and bowel irritation.

Learning Objectives for PGY4 and PGY5:

Medical Knowledge and Patient Care:

- A) Know and understand the pertinent supportive literature and studies related to chemotherapy, hormonal therapy, radiation therapy, surgery and combine modality treatment with good fundamental understanding of outcomes of these studies by disease categories and stage.
- B) Understand the prognostic factors for patients with Genitourinary, breast, head & neck, and gynecologic malignancies.
- C) Thoroughly understand controversies in the treatment of Genitourinary malignancies including:
 - a) Single modality vs. multimodality therapy
 - b) Altered fractionation, radiosensitizer agents
 - c) Primary vs. adjuvant radiation therapy with fundamental understanding of the pros and cons for each as they pertaining to particular disease sites

- d) Appropriate use of brachytherapy in prostate, as well as interstitial implant for urethral tumors
 - e) Understand the technical approaches and challenges of using brachytherapy (seed implant or HDR afterloading techniques) as well as the critical issues associated with their use in prostate cancer
 - f) Extent of radiation target volume: esp. role of elective nodal irradiation for prostate cancer
 - g) Role of hormonal therapy and its management for prostate cancer
 - h) Pros and cons of using radiosensitizers and radioprotectors
- D) Thoroughly understand controversies in the treatment of breast malignancies including:
- a) Whole breast vs. partial breast irradiation approaches
 - b) Target volume delineation and treatment design: Standard two-field or three-field techniques, internal mammary chain (IMC) treatment, APBI (with either external beam conformal technique or interstitial brachytherapy), and IMRT
 - c) Appropriate use of brachytherapy for purpose of APBI or boost after external-beam whole breast treatment
 - d) Understand the technical approaches and challenges of using brachytherapy (interstitial needles or balloon catheter) as well as the critical issues associated with their use
- E) Thoroughly understand controversies in the treatment of head & neck malignancies including:
- a) Single modality vs. multimodality therapy
 - b) Altered fractionation, radiosensitizer agents
 - c) Primary vs. adjuvant radiation therapy with fundamental understanding of the pros and cons for each as they pertain to particular disease sites
 - d) Appropriate use of SRS, SBRT, IMRT, and IGRT in all head & neck tumors.
 - e) Understand the technical approaches and challenges of using brachytherapy as well as the critical issues associated with their use in all head & neck tumors
 - f) Pros and cons of using radiosensitizers and radioprotectors.
- F) Thoroughly understand controversies in the treatment of gynecologic malignancies including:
- a) Single modality vs. multimodality therapy
 - b) Altered fractionation, radiosensitizer agents
 - c) Primary vs. adjuvant radiation therapy with fundamental understanding of the pros and cons for each as they pertain to particular disease sites
 - d) Appropriate use of brachytherapy in uterine, cervical, vaginal, as well as vulvar tumors.
 - e) Understand the technical approaches and challenges of using brachytherapy as well as the critical issues associated with their use in uterine, cervical, vaginal, as well as vulvar tumors
 - f) Pros and cons of using radiosensitizers and radioprotectors.
- F) Understand the use of systemic therapy (including immunotherapy for renal cell cancer and hormonal therapy for prostate cancer), targeted therapy, and new radiation modalities as they are applied to clinical and translational research.
- G) Be able to undertake all aspects of patient care related to patients with Genitourinary malignancies including: initial evaluation, formulation and implementation of treatment plans, discussion with family members and referring physicians, treatment prescription and the integration of radiation therapy with other treatment modalities.
- H) Be able to delineate in a written consultation the management and plan for patients with reference to pertinent literature to substantiate recommendations.

- I) Understand critical organ dose parameters including DVH analysis, effects of systemic and targeted therapies, and integrate this information into the patient's radiation therapy treatment plans.
- J) Gain proficiency in performing techniques and determining dose prescriptions including alternative treatment arrangements; formulate treatment plans and dosimetry according to accepted guidelines for each of the disease sites.

Pink Rotation – Michael L. Steinberg, M.D.

Key to Core Competencies:	1 = Patient Care 2 = Medical Knowledge 3 = Practice-Based Learning & Improvement 4 = Interpersonal & Communication Skills 5 = Professionalism 6 = Systems-Based Practice
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Service Responsibilities/Assignments:	
Responsibility:	Competency:
<ul style="list-style-type: none"> • Completion of weekly patient-on-treatment management, all related documentation, and treatment summaries. • Appropriate preparation for weekly chart rounds. • Appropriate sign out of patients at end of rotation (this should not be only a transfer of information, but rather a higher level information exchange and discussion). 	<ul style="list-style-type: none"> • 1,2,3,4 • 1, 2,3,5,6 • 1,4,5,6

Additional Responsibilities:
<ul style="list-style-type: none"> • Clinical educational opportunities – Each resident should maximize his/her case log and patient care experience by participating in patient care activity opportunities on other services where there is no resident assigned, during times when there are no scheduled patient care activities on his/her own service. The resident must obtain the service faculty’s approval to participate in these clinical opportunities. • Multidisciplinary conferences & tumor boards – Each resident should participate in all multidisciplinary conferences and tumor boards related to other services, providing they do not conflict with their service activities.

Multidisciplinary conferences & tumor boards:
<ul style="list-style-type: none"> • Breast Cancer Tumor Board • Genitourinary (GU) Tumor Board

Attending Responsibilities:
<ul style="list-style-type: none"> • Describe learning objectives and expectations to the new resident on service at the beginning of the rotation. • Provide interim feedback on resident’s performance, including areas requiring improvement and quality of dictation and documentation. • Conduct end-of-rotation test of resident’s knowledge and understanding of patient care on service. • Conduct end-of-rotation review and evaluation of resident’s performance.

Pink Service – All PGY Levels:

All residents in all years will evaluate adult patients with Genitourinary (GU) cancers including kidney, ureter, bladder, prostate and urethra cancers; will evaluate adult patients with breast cancer; will evaluate adult patients with head & neck cancers; will evaluate adult patients with gynecologic cancers including ovarian, uterine, cervical, vaginal and vulva cancers. All patients are evaluated in the setting of a multidisciplinary team involving Radiation Oncologists, Urological Surgeons / Urologists, Breast Surgeons / Surgical Oncologists, Head & Neck Surgeons / Otorhinolaryngologists, Gynecological Oncologists, and Medical Oncologists.

All residents in all years will gain experience and proficiency in the management of these cancers during Radiation Oncology consultation, attendance of multidisciplinary tumor boards, radiation simulation, radiation treatment planning, weekly patient treatment checks, as well as follow-up clinics. We expect the residents to see patients in consultation, to see patients under treatment on a weekly basis, and all follow-up patients. The resident is expected to progress through the four years at UCLA Radiation Oncology and be proficient in the simulation and treatment planning of patients with using external beam techniques, including 3D conformal, 4D conformal, intensity modulated radiation therapy (IMRT), image guided radiation therapy (IGRT), as well as stereotactic body radiation therapy (SBRT) as they are applied to Genitourinary, Breast Cancers, Head & Neck, and Gynecological malignancies. Radiation Oncology Training is a graduated experience with more responsibility and decision making granted to the resident as they gain experience and expertise throughout their four years in residency. Residents of all years will be expected to treat all disease sites within the scope of this service as outlined below and use all appropriate techniques.

Learning Objectives for PGY2 and PGY3:

Medical Knowledge and Patient Care:

- A) Understand the natural history, clinical presentation, diagnostic workup for genitourinary, breast, head & neck, and gynecological cancers. Be able to apply current AJCC staging to all cancers and discuss treatment implications based on staging.
- B) Describe the anatomic features and draining lymphatics as they pertain to radiation field drawing and target volume delineation.
- C) Understand the epidemiology, risk factors, tumor markers, genetics, and potential preventive as well as screening methods for genitourinary, breast, head and neck, and gynecological cancers.
- D) Understand that the standard multidisciplinary approach for Genitourinary cancers may include:
 - a) Kidney CA / Renal Cell CA: Definitive or palliative treatments including surgery, chemotherapy / immunotherapy, as well as radiation therapy.
 - b) Ureter CA: Primary and post-operative adjuvant radiation therapy for ureteral/renal collection system cancer (renal pelvis & ureteral malignancies), including the combination with chemotherapy.
 - c) Bladder CA: Post-operative radiation therapy for resected bladder CA as well as definitive primary radiation therapy for unresectable cervical cancer. Role of chemo-radiation therapy in bladder preservation approaches.
 - d) Prostate CA: Primary surgery vs. primary radiation therapy for prostate cancer. Various treatment modality including external beam radiotherapy, permanent seed brachytherapy, and temporary high dose rate afterloading brachytherapy. Role of

precision oriented radiation technique such as intensity modulated (IMRT) and image-guided (IGRT) treatment.

- e) Urethral CA: Primary or adjuvant radiation therapy for both male and female urethral cancer.
- f) Early stage invasive breast cancer: Definitive treatments including surgery, chemotherapy, as well as radiation therapy. Role of radiation therapy in breast conservation treatment.
- g) Loco-regionally advanced breast cancer: Primary and post-operative adjuvant radiation therapy, including the combination with chemotherapy and hormonal therapy.
- h) Inflammatory breast cancer (IBC): Role of chemotherapy, surgery, and radiation therapy.
- i) Non-invasive breast cancer: Adjuvant radiation therapy for ductal carcinoma in situ (DCIS).
- j) Target volume delineation and treatment design: Standard two-field or three-field techniques.
- k) Nasopharyngeal CA: Definitive treatments including surgery, radiation therapy, as well as chemotherapy.
- l) Oropharyngeal CA: Primary or post-operative adjuvant radiation therapy for cancer of tongue base and tonsil, including the combination with chemotherapy.
- m) Hypopharyngeal CA: Primary or post-operative adjuvant radiation therapy for cancer of pyriform sinus and post-pharyngeal wall, including the combination with chemotherapy.
- n) Laryngeal CA: Primary or post-operative adjuvant radiation therapy for supraglottic, glottic, and infraglottic cancers, including the combination with chemotherapy.
- o) Oral cavity CA: Primary or post-operative adjuvant radiation therapy for oral cavity cancers, including tumors of oral tongue, floor of mouth, buccal mucosa, retromolar trigone, hard palate, upper & lower gingival, and lips. Role of chemotherapy.
- p) Nasal / Para-nasal Sinus tumors: Primary or post-operative adjuvant radiation therapy for cancers of para-nasal sinuses and nasal fossa. Role of chemotherapy.
- q) Skin CA: Primary or post-operative radiation therapy for well differentiated epithelial cancers as well as melanoma and other skin malignancies. Role of Mohs surgery and topical medical treatments.
- r) Non-epithelial tumors of head & neck: sarcomas, lymphomas, neuroendocrine tumors, vascular tumors, etc.
- s) Salivary gland tumors: Primary or post-operative adjuvant radiation therapy for cancers of major and minor salivary glands. Role of chemotherapy.
- t) Thyroid CA: Primary or post-operative adjuvant radiation therapy for cancers of thyroid, including papillary, follicular, medullary, and anaplastic cancers. Role of chemotherapy and radioactive iodine (RAI) treatment.

- u) Ovarian CA: Definitive or palliative treatments including surgery, chemotherapy, as well as radiation therapy.
 - v) Uterine CA: Primary and post-operative adjuvant radiation therapy for uterine cancer (endometrial cancer & uterine sarcoma), including the combination with chemotherapy.
 - w) Cervical CA: Post-operative radiation therapy for resected cervical CA as well as definitive primary radiation therapy for unresectable cervical cancer. Role of chemoradiation therapy.
 - x) Vaginal CA: Primary or adjuvant radiation therapy for vaginal cancer.
 - y) Vulvar CA: Primary or adjuvant radiation therapy for vulvar cancer.
- E) Know and apply principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories including principles of altered fractionation, chemoradiation sensitization, chemo-radiation-hormonal therapy sequencing, normal tissue tolerance and injury, as well as the use of various modalities of radiation therapy such as IMRT and accelerated partial breast irradiation (APBI).
- F) Learn to perform radiation therapy using various techniques, and understand prescription and dosimetry for each of the disease sites:
- a) Simulation techniques
 - i. standard two-field & three-field techniques
 - b) Dose and volume consideration and field managements depending on the location of disease, disease of interest, and normal tissue constraints.
- G) Be able to identify and manage radiation related side-effects including but not exclusive of dermatitis, mucositis, pneumonitis, dysphagia, odenophagia, xerostomia, hearing loss, vision impairment, neurocognitive effects, nausea, vomiting, diarrhea, dyspareunia, cytopenia, urinary frequency, dysuria, fatigue, and bowel irritation.

Learning Objectives for PGY4 and PGY5:

Medical Knowledge and Patient Care:

- A) Know and understand the pertinent supportive literature and studies related to chemotherapy, hormonal therapy, radiation therapy, surgery and combine modality treatment with good fundamental understanding of outcomes of these studies by disease categories and stage.
- B) Understand the prognostic factors for patients with Genitourinary, breast, head & neck, and gynecologic malignancies.
- C) Thoroughly understand controversies in the treatment of Genitourinary malignancies including:
 - a) Single modality vs. multimodality therapy
 - b) Altered fractionation, radiosensitizer agents
 - c) Primary vs. adjuvant radiation therapy with fundamental understanding of the pros and cons for each as they pertaining to particular disease sites

- d) Appropriate use of brachytherapy in prostate, as well as interstitial implant for urethral tumors
 - e) Understand the technical approaches and challenges of using brachytherapy (seed implant or HDR afterloading techniques) as well as the critical issues associated with their use in prostate cancer
 - f) Extent of radiation target volume: esp. role of elective nodal irradiation for prostate cancer
 - g) Role of hormonal therapy and its management for prostate cancer
 - h) Pros and cons of using radiosensitizers and radioprotectors
- D) Thoroughly understand controversies in the treatment of breast malignancies including:
- a) Whole breast vs. partial breast irradiation approaches
 - b) Target volume delineation and treatment design: Standard two-field or three-field techniques, internal mammary chain (IMC) treatment, APBI (with either external beam conformal technique or interstitial brachytherapy), and IMRT
 - c) Appropriate use of brachytherapy for purpose of APBI or boost after external-beam whole breast treatment
 - d) Understand the technical approaches and challenges of using brachytherapy (interstitial needles or balloon catheter) as well as the critical issues associated with their use
- E) Thoroughly understand controversies in the treatment of head & neck malignancies including:
- a) Single modality vs. multimodality therapy
 - b) Altered fractionation, radiosensitizer agents
 - c) Primary vs. adjuvant radiation therapy with fundamental understanding of the pros and cons for each as they pertain to particular disease sites
 - d) Appropriate use of SRS, SBRT, IMRT, and IGRT in all head & neck tumors.
 - e) Understand the technical approaches and challenges of using brachytherapy as well as the critical issues associated with their use in all head & neck tumors
 - f) Pros and cons of using radiosensitizers and radioprotectors.
- F) Thoroughly understand controversies in the treatment of gynecologic malignancies including:
- a) Single modality vs. multimodality therapy
 - b) Altered fractionation, radiosensitizer agents
 - c) Primary vs. adjuvant radiation therapy with fundamental understanding of the pros and cons for each as they pertain to particular disease sites
 - d) Appropriate use of brachytherapy in uterine, cervical, vaginal, as well as vulvar tumors.
 - e) Understand the technical approaches and challenges of using brachytherapy as well as the critical issues associated with their use in uterine, cervical, vaginal, as well as vulvar tumors
 - f) Pros and cons of using radiosensitizers and radioprotectors.
- K) Understand the use of systemic therapy (including immunotherapy for renal cell cancer and hormonal therapy for prostate cancer), targeted therapy, and new radiation modalities as they are applied to clinical and translational research.
- L) Be able to undertake all aspects of patient care related to patients with Genitourinary malignancies including: initial evaluation, formulation and implementation of treatment plans, discussion with family members and referring physicians, treatment prescription and the integration of radiation therapy with other treatment modalities.
- M) Be able to delineate in a written consultation the management and plan for patients with reference to pertinent literature to substantiate recommendations.

- N) Understand critical organ dose parameters including DVH analysis, effects of systemic and targeted therapies, and integrate this information into the patient's radiation therapy treatment plans.
- O) Gain proficiency in performing techniques and determining dose prescriptions including alternative treatment arrangements; formulate treatment plans and dosimetry according to accepted guidelines for each of the disease sites.

Purple Service – Michael T. Selch, M.D.

Key to Core Competencies:	1 = Patient Care 2 = Medical Knowledge 3 = Practice-Based Learning & Improvement 4 = Interpersonal & Communication Skills 5 = Professionalism 6 = Systems-Based Practice
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Service Responsibilities/Assignments:	
Responsibility:	Competency:
<ul style="list-style-type: none"> • Completion of weekly patient-on-treatment management, all related documentation, and treatment summaries. • Appropriate preparation for weekly chart rounds. • Appropriate sign out of patients at end of rotation (this should not be only a transfer of information, but rather a higher level information exchange and discussion). 	<ul style="list-style-type: none"> • 1,2,3,4 • 1, 2,3,5,6 • 1,4,5,6

Additional Responsibilities:
<ul style="list-style-type: none"> • Clinical educational opportunities – Each resident should maximize his/her case log and patient care experience by participating in patient care activity opportunities on other services where there is no resident assigned, during times when there are no scheduled patient care activities on his/her own service. The resident must obtain the service faculty’s approval to participate in these clinical opportunities. • Multidisciplinary conferences & tumor boards – Each resident should participate in all multidisciplinary conferences and tumor boards related to other services, providing they do not conflict with their service activities.

Multidisciplinary conferences & tumor boards:
<ul style="list-style-type: none"> • Pediatric NeuroOncology • General Pediatric Oncology • Adult NeuroOncology (Brain) • Pituitary • Musculoskeletal • Lymphoma • Stereotactic Radiosurgery • Thoracic Oncology

Attending Responsibilities:

- Describe learning objectives and expectations to the new resident on service at the beginning of the rotation.
- Provide interim feedback on resident's performance, including areas requiring improvement and quality of dictation and documentation.
- Conduct end-of-rotation test of resident's knowledge and understanding of patient care on service.
- Conduct end-of-rotation review and evaluation of resident's performance.

Purple Service – All PGY Levels:

All residents in all years will evaluate adult patients with thoracic malignancies including primary non-small cell lung cancer, small cell lung cancer, malignant thymoma; central nervous system (CNS) cancers including gliomas, non-glial tumors, meningioma, acoustic neuromas, pituitary adenomas, craniopharyngiomas, metastases; soft tissue and bone sarcomas including extremity, retroperitoneal tumors; nodal and extra-nodal lymphomas including Hodgkins and non-Hodgkins varieties and general pediatric malignancies including Wilms tumor, rhabdomyosarcoma and neuroblastoma all in the setting of a multidisciplinary team involving Radiation Oncologists, Surgical Oncologists, and Medical Oncologists.

All residents in all years will gain experience and proficiency in the management of these cancers during Radiation Oncology consultation, attendance of multidisciplinary tumor boards, radiation simulation, radiation treatment planning, weekly patient treatment checks, as well as follow-up clinics. We expect the residents to see patients in consultation, to see patients under treatment on a weekly basis, and all follow patients. The resident is expected to progress through the four years at UCLA Radiation Oncology and be proficient in the simulation and treatment planning of patients with pediatric malignancies, thoracic malignancies, CNS tumors, lymphomas and sarcomas using external beam techniques, including 3D conformal, 4D conformal, intensity modulated radiation therapy, as well as stereotactic body radiation therapy as they are applied to brain tumors, benign tumors and thoracic malignancies. In addition, the resident will gain expertise in using metabolic imaging and other novel imaging platforms (i.e. PET, MRI) to assist in radiation treatment planning. Finally, residents will be well-versed in the use of combined modality treatments for all thoracic and CNS cancers at the end of their residency at UCLA. Radiation Oncology Training is a graduated experience with more responsibility and decision making granted to the resident as they gain experience and expertise throughout their four years in residency. Residents of all years will be expected to treat all disease sites within the scope of CNS and thoracic malignancies and use all appropriate techniques.

Learning Objectives for PGY2 and PGY3:**Medical Knowledge and Patient Care:**

- A) Understand the natural history, clinical presentation, and diagnostic workup for Sarcoma, Lymphoma, Adult Central Nervous System cancers, Pediatric Central Nervous System cancers, General Pediatric cancers and Thoracic cancers. Be able to apply current AJCC staging to all cancers and discuss treatment implications based on staging.
- B) Describe the anatomic features and draining lymphatics for Sarcoma, Lymphoma, Adult Central Nervous System cancers, Pediatric Central Nervous System cancers, General Pediatric cancers

and Thoracic cancers as they pertain to radiation field drawing and target volume delineation, as well as for thoracic malignancies as they pertain to radiation field drawing (3D) and target volume delineation (IMRT).

- C) Understand the epidemiology, risk factors, tumor markers, genetics, and potential preventive as well as screening methods for Sarcoma, Lymphoma, Adult Central Nervous System cancers, Pediatric Central Nervous System cancers, General Pediatric cancers and Thoracic cancers.
- D) Understand that the standard multidisciplinary approach for Sarcoma may include:
 - a) Soft-tissue sarcomas: Primary, preoperative or post-operative adjuvant radiation therapy for all histologies of extremity and non-extremity soft tissue sarcomas including retroperitoneal, uterine, breast and head and neck tumors.
 - b) Bone sarcomas: Primary, preoperative or post-operative adjuvant radiation therapy for all histologies of extremity and non-extremity bone sarcomas.
 - c) Benign connective tissue disorders: Primary and postoperative adjunctive radiation therapy for fibromatoses, heterotopic ossification, Langerhans cell granulomatosis.
- E) Understand the multidisciplinary approach for Lymphoma may include:
 - a) Hodgkins Lymphoma: Primary or combined modality therapy for the various presentations of Hodgkins Lymphoma.
 - b) Non-Hodgkins Lymphoma: Primary or combined modality therapy for the various nodal and extra-nodal presentations of B and T-cell Non-Hodgkins Lymphoma.
 - c) Total body irradiation as conditioning for marrow transplantation for high risk lymphomas.
- F) Understand the multidisciplinary approach for Adult Central Nervous System tumors may include:
 - a) Low Grade Gliomas: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - b) High Grade Gliomas: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - c) Other malignant primary Adult Central Nervous System tumors: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy for medulloblastoma/PNET, ependymoma, pineal germ cell/non-germ cell tumors
 - d) Benign tumors including meningioma, pituitary adenoma, craniopharyngioma, acoustic neuroma, arteriovenous malformations: Primary and postoperative adjuvant stereotactic and conventional radiation therapy.
 - e) Metastases: Primary and postoperative adjuvant radiation therapy for all histologies of central nervous system metastases including the role of stereotactic irradiation.
- G) Understand the multidisciplinary approach for Pediatric Central Nervous System tumors may include:
 - a) Low Grade Gliomas: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - b) High Grade Gliomas: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.

- c) Other malignant primary Pediatric Central Nervous System tumors: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy for medulloblastoma/PNET, ependymoma, pineal germ cell/non-germ cell tumors.
 - d) Benign tumors including meningioma, pituitary adenoma, craniopharyngioma, acoustic neuroma, arteriovenous malformations: Primary and postoperative adjuvant stereotactic and conventional radiation therapy.
- H) Understand the multidisciplinary approach for General Pediatric tumors may include:
- a) Wilms Tumor: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - b) Neuroblastoma: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - c) Rhabdomyosarcoma: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - d) Acute leukemia: Adjuvant uses of radiation therapy for acute lymphoblastic and myeloblastic leukemia.
 - e) Other uncommon General Pediatric tumors (retinoblastoma, hepatoblastoma): Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.
- I) Understand the multidisciplinary approach for Thoracic tumors may include:
- a) Non-small lung cancer: Primary, preoperative or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - b) Small cell lung cancer: Primary or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - c) Superior sulcus tumors: Primary, preoperative or postoperative adjuvant radiation therapy including combination with chemotherapy.
 - d) Thymoma: Postoperative adjuvant radiation therapy. Role of chemotherapy.
- J) Know and apply principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories including principles of altered fractionation, chemoradiation sensitization, chemo-radiation-hormonal therapy sequencing, normal tissue tolerance and injury, as well as the use of various modalities of radiation therapy such as IMRT and accelerated partial breast irradiation (APBI).
- K) Learn to perform radiation therapy using various techniques, and understand prescription and dosimetry for each of the disease sites:
- a) Simulation techniques
 - i. standard two-field & three-field techniques

- b) Dose and volume consideration and field managements depending on the location of disease, disease of interest, and normal tissue constraints.
- L) Be able to identify and manage radiation related side-effects including but not exclusive of dermatitis, mucositis, pneumonitis, dysphagia, odynophagia, xerostomia, hearing loss, vision impairment, neurocognitive effects, nausea, vomiting, endocrine dysfunction, growth arrest, bone marrow dysfunction, soft tissue/bone injury.

Learning Objectives for PGY4 and PGY5:

Medical Knowledge and Patient Care:

- A) Know and understand the pertinent supportive literature and studies related to chemotherapy, radiation therapy, surgery and combine modality treatment with good fundamental understanding of outcomes of these studies by disease categories and stage.
- B) Thoroughly understand controversies in the treatment of Sarcomas including:
 - a) Single modality vs. multimodality therapy for successful limb salvage
 - b) Altered fractionation, radiosensitizer agents
 - c) Pre-operative vs. Post-operative radiation therapy with fundamental understanding of the pros and cons for each
 - d) Impact of tumor necrosis, residual disease, PET imaging
- C) Thoroughly understand controversies in the treatment of Adult Central Nervous System tumors including:
 - a) Rationale for dose escalation
 - b) Rationale and results of stereotactic irradiation for primary and metastatic tumors
 - c) Altered fractionation schemes
 - d) Arguments for single versus fractionated stereotactic irradiation for benign and malignant tumors.
- D) Thoroughly understand controversies in the treatment of Pediatric Central Nervous System tumors including:
 - a) Rationale for withholding radiation therapy in the young patient
 - b) Rationale and results of dose de-escalation
 - c) Altered fractionation schemes
- E) Thoroughly understand controversies in the treatment of General Pediatric tumors including:
 - a) Secondary malignancy risk
 - b) Choice of conditioning regimen for bone marrow transplantation
 - c) Altered fractionation schemes for total body irradiation and external beam radiation therapy for solid tumors
- F) Thoroughly understand controversies in the treatment of Thoracic tumors including:
 - a) Role of surgery for superior sulcus tumors, stage III non-small cell lung cancer and small cell lung cancer
 - b) Role of stereotactic body radiosurgery for early stage lung cancer
 - c) Sequential versus concurrent combined modality therapy for lung cancer

- P) Understand the use of systemic therapy, targeted therapy, and new radiation modalities as they are applied to clinical and translational research.
- Q) Be able to undertake all aspects of patient care related to patients with Central Nervous System (CNS) and thoracic malignancies including: initial evaluation, formulation and implementation of treatment plans, discussion with family members and referring physicians, treatment prescription determination as well as the integration of radiation therapy with other treatment modalities.
- R) Be able to delineate in a written consultation the management and plan for patients with reference to pertinent literature to substantiate recommendations.
- S) Understand critical organ dose parameters including DVH analysis, effects of systemic and targeted therapies, and integrate this information into the patient's radiation therapy treatment plans.
- T) Gain proficiency in performing techniques and determining dose prescriptions including alternative treatment arrangements; formulate treatment plans and dosimetry according to accepted guidelines for each of the disease sites.

Blue Rotation – Percy P. Lee, M.D.

Key to Core Competencies:	1 = Patient Care 2 = Medical Knowledge 3 = Practice-Based Learning & Improvement 4 = Interpersonal & Communication Skills 5 = Professionalism 6 = Systems-Based Practice
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Service Responsibilities/Assignments:	
Responsibility:	Competency:
<ul style="list-style-type: none"> • Completion of weekly patient-on-treatment management, all related documentation, and treatment summaries. • Appropriate preparation for weekly chart rounds. • Appropriate sign out of patients at end of rotation (this should not be only a transfer of information, but rather a higher level information exchange and discussion). 	<ul style="list-style-type: none"> • 1,2,3,4 • 1, 2,3,5,6 • 1,4,5,6

Additional Responsibilities:
<ul style="list-style-type: none"> • Clinical educational opportunities – Each resident should maximize his/her case log and patient care experience by participating in patient care activity opportunities on other services where there is no resident assigned, during times when there are no scheduled patient care activities on his/her own service. The resident must obtain the service faculty’s approval to participate in these clinical opportunities. • Multidisciplinary conferences & tumor boards – Each resident should participate in all multidisciplinary conferences and tumor boards related to other services, providing they do not conflict with their service activities.

Multidisciplinary conferences & tumor boards:
<ul style="list-style-type: none"> • Thoracic Oncology • Gastrointestinal • Hepatobiliary • Stereotactic Radiosurgery • Pituitary • Pancreatic (Surgery C)

Attending Responsibilities:
<ul style="list-style-type: none"> • Describe learning objectives and expectations to the new resident on service at the beginning of the rotation. • Provide interim feedback on resident’s performance, including areas requiring improvement and quality of dictation and documentation. • Conduct end-of-rotation test of resident’s knowledge and understanding of patient care on service. • Conduct end-of-rotation review and evaluation of resident’s performance.

Blue Service – All PGY Levels:

All residents in all years will evaluate adult patients with Gastrointestinal (GI) cancers including esophageal, gastric, pancreatic, hepatobiliary, colorectal and anal cancers, as well as thoracic malignancies including primary non-small cell lung cancer, small cell lung cancer, malignant thymoma, thoracic lymphomas, and oligo metastatic disease to the thorax in the setting of a multidisciplinary team involving Radiation Oncologists, Surgical Oncologists, and Medical Oncologists.

All residents in all years will gain experience and proficiency in the management of these cancers during Radiation Oncology consultation, attendance of multidisciplinary Gastrointestinal (GI) and thoracic tumor boards, radiation simulation, radiation treatment planning, weekly patient treatment checks, as well as follow-up clinics. We expect the residents to see patients in consultation, to see patients under treatment on a weekly basis, and all follow patients. The resident is expected to progress through the four years at UCLA Radiation Oncology and be proficient in the simulation and treatment planning of patients with Gastrointestinal (GI) and thoracic malignancies using external beam techniques, including 3D conformal, 4D conformal, intensity modulated radiation therapy, as well as stereotactic body radiation therapy as they are applied to Gastrointestinal (GI) and thoracic malignancies. In addition, the resident will gain expertise in using metabolic imaging and other novel imaging platforms (i.e. PET, MRI) to assist in radiation treatment planning. Finally, residents will be well-versed in the use of combine modality treatments for all GI cancers at the end of their residency at UCLA. Radiation Oncology Training is a graduated experience with more responsibility and decision making granted to the resident as they gain experience and expertise throughout their four years in residency. Residents of all years will be expected to treat all disease sites within the scope of Gastrointestinal (GI) and thoracic malignancies and use all appropriate techniques. Below outlines the expected progression of a resident's medical knowledge in Gastrointestinal (GI) and thoracic Radiation Oncology at UCLA between the PGY2 and PGY5 years:

Learning Objectives for PGY2 and PGY3:

Medical Knowledge and Patient Care:

- A) Understand the natural history, clinical presentation, diagnostic workup for Gastrointestinal (GI) and thoracic cancers. Be able to apply current AJCC staging to all cancers of the GI tract and discuss treatment implications based on staging.
- B) Describe the anatomic features and draining lymphatics for Gastrointestinal (GI) cancers as they pertain to radiation field drawing and target volume delineation, as well as for thoracic malignancies as they pertain to radiation field drawing (3D) and target volume delineation (IMRT).
- C) Understand the epidemiology, risk factors, tumor markers, genetics, and potential preventive as well as screening methods for Gastrointestinal (GI) and thoracic cancers.
- D) Understand that the standard multidisciplinary approach for Gastrointestinal (GI) cancers may include:

- a) Esophageal CA: Definitive or palliative treatments including surgery, chemotherapy, radiation therapy, pre-operative and post-operative radiation and chemotherapy, as well as definitive chemoradiation.
 - b) Gastric CA: Pre-operative and post-operative radiation therapy for gastric cancer
 - c) Pancreatic CA: Post-operative chemoradiation for resected pancreatic CA as well as definitive chemoradiation therapy for unresectable pancreatic cancer.
 - d) Rectal CA: Adjuvant chemoradiation for rectal cancer and pre-operative chemoradiation for rectal cancer.
 - e) Anal CA: Definitive chemoradiation for anal cancer.
 - f) Liver CA: definitive and palliative external beam radiation therapy
- E) Understand the multidisciplinary approach for thoracic malignancies as well as the roles of radiation techniques applicable such as 3D and 4D CRT, and IMRT including:
- a) Resectable Non-Small Cell Lung Carcinoma (NSCLCA): Role of pre-operative chemoradiation, post-operative radiation, and post-operative chemotherapy or chemoradiation for resectable tumors.
 - b) Unresectable Non-Small Cell Lung Carcinoma (NSCLCA): Definitive and palliative radiation and chemoradiation options including altered fractionation, hypofractionation and split course radiation therapy.
 - c) Role of surgery, and types of appropriate surgeries for tumors of the thorax.
 - d) Small cell lung CA: Use of chemoradiation for limited stage disease, sequencing of irradiation and chemotherapy (sequential vs. concurrent). Role of elective whole brain radiation in limited as well as extensive small cell lung cancer.
 - e) Malignant Thymoma: Role of adjuvant radiation therapy after surgery. Role of pre-operative chemoradiation. Role of adjuvant chemotherapy after resection.
 - f) Malignant Lymphoma: Sequencing for chemotherapy and radiation therapy. Role of definitive chemotherapy. Role of combine modality therapy for Hodgkins' Disease and Non-Hodgkins' Lymphoma.
- F) Know and apply principles of radiological physics and radiobiology appropriate to radiation therapy for each of the disease categories including principles of chemoradiation sensitization, normal tissue tolerance and injury, as well as the use of various modalities of radiation therapy.
- G) Learn to perform radiation therapy using various techniques, and understand prescription and dosimetry for each of the disease sites:
- a) Simulation techniques.
 - b) Dose and volume consideration and field managements depending on the location of disease, disease of interest, and normal tissue constraints.
- H) Be able to identify and manage radiation related side-effects including but not exclusive of skin reaction, dermatitis, mucositis, esophagitis, pneumonitis, dysphagia, nausea, vomiting, diarrhea, fatigue, and cytopenia.
- I) Be proficient in the complete evaluation of thorax malignancies: including incorporation of staging studies such as CXR, CT scans, and PET scans in evaluation and treatment decision making.
- J) Learn to perform standard radiation therapy techniques and determine dose prescriptions, as well as evaluate treatment plans and dosimetry according acceptable guidelines.

Learning Objectives for PGY4 and PGY5:

Medical Knowledge and Patient Care:

- A) Know and understand the pertinent supportive literature and studies related to chemotherapy, radiation therapy, surgery and combine modality treatment with good fundamental understanding of outcomes of these studies by disease categories and stage.
- B) Understand the prognostic factors for patients with Gastrointestinal (GI) and thoracic malignancies.
- C) Thoroughly understand controversies in the treatment of Gastrointestinal (GI) malignancies including:
 - a) Single modality vs. multimodality therapy
 - b) Altered fractionation, radiosensitizer agents
 - c) Pre-operative vs. Post-operative radiation therapy with fundamental understanding of the pros and cons for each as they pertaining to particular disease sites
 - d) Appropriate use of stereotactic body radiation therapy (SBRT) in pancreatic, bile duct, esophageal, rectal cancers, as well as liver tumors.
 - e) Understand the technical approaches and challenges of using SBRT as well as the critical issues associated with their use in esophageal, rectal, pancreatic, bile duct and liver tumors
 - f) Pros and cons of using radio sensitizers and radio protectors
- D) Thoroughly understand controversies in the treatment of thoracic malignancies including:
 - a) Single modality vs. multimodality therapy
 - b) Altered fractionation, radio sensitizer agents
 - c) Pre-operative vs. Post-operative radiation therapy with fundamental understanding of the pros and cons for each as they pertain to particular disease sites
 - d) Use of stereotactic body radiation therapy (SBRT) in early stage lung cancers and oligo metastatic disease to the thorax.
 - e) Understand the technical considerations and challenges as well as critical issues associated with the use of SBRT in medically inoperable early stage lung cancers, medically operable early stage lung cancers, and oligo metastatic disease to the thorax.
 - f) Understand the pros and cons of using radio sensitizers and radio protectors.
 - g) Role of surgery in superior sulcus carcinoma
 - h) Role of surgery and chemoradiation in Stage IIIA and B lung cancers
 - i) Sequencing of chemotherapy, radiation therapy, and altered fractionation in small cell lung cancer.
 - j) Role of chemoradiation in extensive stage small cell lung cancer.
 - k) Understand the use of novel targeted agents and systemic therapy alone or in combination with radiation therapy in thoracic malignancies as ways to obtain treatment related synergy.
- U) Understand the use of systemic therapy, targeted therapy, and new radiation modalities as they are applied to clinical and translational research.
- V) Be able to undertake all aspects of patient care related to patients with Gastrointestinal (GI) and thoracic malignancies including: initial evaluation, formulation and implementation of treatment plans, discussion with family members and referring physicians, treatment prescription determination as well as the integration of radiation therapy with other treatment modalities.

- W) Be able to delineate in a written consultation the management and plan for patients with reference to pertinent literature to substantiate recommendations.
- X) Understand critical organ dose parameters including DVH analysis, effects of systemic and targeted therapies, and integrate this information into the patient's radiation therapy treatment plans.
- Y) Gain proficiency in performing techniques and determining dose prescriptions including alternative treatment arrangements; formulate treatment plans and dosimetry according to accepted guidelines for each of the disease sites.

Orange Rotation – Veteran’s Administration, West Los Angeles
Ahmad Sadeghi, M.D., Site Director
Guy Juillard, M.D.

Key to Core Competencies:	1 = Patient Care 2 = Medical Knowledge 3 = Practice-Based Learning & Improvement 4 = Interpersonal & Communication Skills 5 = Professionalism 6 = Systems-Based Practice
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Service Responsibilities/Assignments:	
Responsibility:	Competency:
<ul style="list-style-type: none"> • Completion of weekly patient-on-treatment management, all related documentation, and treatment summaries. • Appropriate preparation for weekly chart rounds. • Appropriate sign out of patients at end of rotation (this should not be only a transfer of information, but rather a higher level information exchange and discussion). 	<ul style="list-style-type: none"> • 1,2,3,4 • 1, 2,3,5,6 • 1,4,5,6

Additional Responsibilities:
<ul style="list-style-type: none"> • Clinical educational opportunities – Each resident should maximize his/her case log and patient care experience by participating in patient care activity opportunities on other services where there is no resident assigned, during times when there are no scheduled patient care activities on his/her own service. The resident must obtain the service faculty’s approval to participate in these clinical opportunities. • Multidisciplinary conferences & tumor boards – Each resident should participate in all multidisciplinary conferences and tumor boards related to other services, providing they do not conflict with their service activities.

Multidisciplinary conferences & tumor boards:
<ul style="list-style-type: none"> • General Oncology • Head and Neck • Chest/Thoracic Oncology • Genitourinary Oncology • VAWLA Chart Rounds

Attending Responsibilities:
<ul style="list-style-type: none"> • Describe learning objectives and expectations to the new resident on service at the beginning of the rotation. • Provide interim feedback on resident’s performance, including areas requiring improvement and quality of dictation and documentation. • Conduct end-of-rotation test of resident’s knowledge and understanding of patient care on service. • Conduct end-of-rotation review and evaluation of resident’s performance.

Didactic Educational Curriculum

The didactic educational curriculum consists of regularly scheduled didactic lectures as defined below in support of the clinical educational curriculum. Didactics consist of regularly scheduled lectures, meetings, and symposiums lead by the Teaching Faculty of the Department. Each lecture series has progressive learning objectives for each level of training and methodology for evaluation of the resident's progress, and ongoing review of the curriculum's effectiveness in teaching residents. The learning goals and objectives are detailed below, along with a brief overview of the annual schedule of lectures. Required Reading Materials are located in Appendix D.

Department/Resident Educational Didactic Series Schedule

Friday Morning Lecture Series	Annually	Fridays, 7:00 – 9:00 a.m.
<ul style="list-style-type: none">• Radiobiology• Radiopharmaceuticals• Radiation Safety• Physics	Per Current Didactic Schedule	RONC/RBC Conf Room
Friday Resident Noon Meetings	Each month – all year	Fridays, 12:00 – 1:00 p.m.
<ul style="list-style-type: none">• Staff Meeting• Morbidity & Mortality• Journal Club• Clinical Didactic Lectures	Per Current Didactic Schedule	RONC Conf Room
Radiobiology Two-Day Course	Annually, as scheduled	Location Varies
Translational Thursday	Last Thursday of Each Month	Thursdays, 2:00 – 5:00 p.m. RONC Conf Room

Radiation Oncology Clinical Didactic Lecture Series (ROCDLS)

Two year rotating scheduled – Thursday and Friday Noon Lecture Series.

Required Reading: **May be assigned by teaching faculty.**

Core Competencies: Patient Care, Medical Knowledge, Systems Based Practice, Interpersonal Communication, Professionalism, Practice-Based Learning & Improvement

Evaluation Methodology: ACR In-Training Examination Results
RAPHEX Training Examination Results

Teaching Faculty:

Nzhde Agazaryan, PhD	William McBride, DSc, PhD
Nicholas Cacalano, PhD	Frank Pajonk, MD, PhD
John DeMarco, PhD	Michael T. Selch, MD
Kei Iwamoto, PhD	James Smathers, MD
Percy P. Lee, MD	Michael L. Steinberg, MD
Steve P. Lee, MD, PhD	David Wallenstein, MD

The Radiation Oncology Clinical Didactic Lectures Series (ROCDLS) includes the following lectures, mini-courses, and other presentations not listed below. The below Syllabus is not exhaustive, as courses may be offered annually or bi-annually on a rotating cycle. Please refer to the Residency Website for the current ongoing syllabus.

Radiation Oncology Clinical Didactic Lecture Syllabus:

Thoracic and Lung Lectures

- Clinical Management of Stage IIIA and IIIB NSCLCA (P.Lee)
- Stereotactic Body Radiation Therapy for Lung tumors (P.Lee)
- Post-operative Radiation Therapy for NSCLCA (P.Lee)
- Management of Small Cell Lung Cancer (P.Lee)
- Locally advanced NSCLC (Selch)
- Radiographic Anatomy: Trunk (S. Raman)
- Radiographic Anatomy: Trunk (S. Raman)

Sarcoma/Soft Tissue Tumors

- Radiotherapy for extremity sarcomas (Selch)
- Radiotherapy for non-extremity sarcomas (Selch)
- Pathology of Sarcomas (Scott Nelson)
- Radiology of Sarcomas (Kombez Motamedi)
- Surgical Treatment for Sarcoma and Soft Tissue Tumors (Fritz Eilber)
- Chemotherapeutic Options for Patients with Sarcoma and Soft Tissue Tumors (Bill Tap)
- Pediatric Concerns with Sarcoma and Soft Tissue Tumors (Noah Federman)

Genitourinary Cancers

- Management of Post Prostatectomy Prostate Cancer Patient (Steinberg)
- Management of Seminoma (Steinberg)
- Prostate Cancer : Moments of Decision (Steinberg)
- Treatment of Bladder Cancer (Steinberg)

Breast Cancers

- Breast Cancer: Overview (S. Lee)
- Radiographic Anatomy: Breast (L. Bassett)

Endocrine Cancers

- Adjuvant Chemoradiation for Locally Advanced Resected Pancreatic Cancer (P.Lee)
- Stereotactic Body Radiation Therapy for Locally Advanced Unresectable Pancreas and Bile Duct Cancers (P.Lee)

Gynecological Cancers

- Gyn/Onc: EBRT, Brachytherapy (S. Lee)

Lymphoma/Leukemia

- NK/T cell NHL (Selch)
- Mantle cell NHL (Selch)

Gastrointestinal Cancers

- Neoadjuvant and Adjuvant Chemoradiation for Rectal Cancer (P.Lee)

Head & Neck Cancers

- Clinical Anatomy: Head & Neck (S. Lee)
- Head & Neck Cancer: Overview (S. Lee)
- Head & Neck Cancer: Altered Fractionation (S. Lee)
- Head & Neck Cancer: IMRT/SIB/DVH (S. Lee)
- Radiotherapy & Maxillofacial/Dental Care (J. Beumer)
- Radiographic Anatomy: H&N (C. Kirsch)

Practice Management Skills

- How to Find and Evaluate an Academic Job (with some preparation) (P.Lee)
- How to Find and Evaluate a Private Practice Job (M. Steinberg/ex-residents)
- The Science of Quality assessment in Radiation Oncology (Steinberg)
- Understanding the Process of Care in Radiation Oncology (Steinberg)
- Understanding the CPT Nomenclature in Radiation Oncology (Steinberg)
- Health Policy Issues Facing Radiation Oncology (Steinberg)
- Billing and Compliance... an exercise in self interest or a critical aspect of quality care? (Steinberg)
- Disparity in Cancer Care (Steinberg)

Brain Cancers

- Radiographic Anatomy: CNS (P. Villablanca)

Stereotactic Radiosurgery and Radiotherapy

- Stereotactic irradiation for gliomas (Selch)
- Stereotactic irradiation for benign tumors (Selch)
- Stereotactic irradiation for spinal tumors (Selch)

Radiation Oncology Primer Courses

- Clinical Anatomy: Chest, Abdomen & Pelvis (S. Lee)
- Classical Radiobiology: Early History (S. Lee)
- Classical Radiobiology: Time, Dose, Fractionation (S. Lee)
- Classical Radiobiology: IMRT & Dose Inhomogeneity (S. Lee)
- Complementary Medicine (M. Hardy/K. Huit)
- Nutrition/Dietary Issues for Cancer Patients
- Interventional Radiology (D. Lu/R. Suh)
- Surgical Pathology (various topics)
- Surgical Oncology (various topics)
- Physical Therapy/Rehabilitation, Speech Pathology/Swallow Therapy
- Quantitative Concepts in Clinical Oncology (S. Lee)
- How to Teach – Presentation Primer (S. Lee)

Biostatistics

- Survival Curve Analysis Primer (S. Lee)

Advancing Clinical Cancer Therapy through Cancer Biology and Radiobiology (Annually)

Friday AM Lecture Series

Weekly per annual schedule

7:00 – 9:00 a.m.

Learning Goals & Objectives by Training Year:

- PGY2: Residents at this level will be expected to be able to understand the material and be able to answer the questions associated with each lecture.
- PGY3: Residents at this level will be expected to be able to discuss the concepts and answer questions in the ASTRO Practice exam on the web.
- PGY4: Residents at this level will be expected to be able to read current papers in clinical radiobiology and to use the concepts in these lectures to understand the concepts; to successfully pass the radiobiology section of the American Board of Radiology board exams.

Required Reading: *“Radiobiology for the Radiologist”*. Eric Hall. Publisher: Lippincott-Raven, Philadelphia, 2006 (6th edition)

Core Competencies: Patient Care, Medical Knowledge

Evaluation Methodology: ACR In-Training Examination Results

Teaching Faculty: William McBride, PhD, DSc
Kei Iwamoto, PhD
Nicholas Cacalano, PhD
Frank Pajonk, MD, PhD
Steve P. Lee, MD, PhD

Lecture Syllabus:

1. Interaction of Radiation with Biological Matter: what is biological dose?
 - a. Radiation Quality
 - i. Linear Energy Transfer and Relative Biological Effectiveness
 - b. The Oxygen Effect
 - c. Influence of Dose and Dose Rate
 - d. Acute and Late-Responding Tissues
2. Radiation Targets 1: DNA, Chromosome and Chromatid Damage, and Repair
 - a. Chromatin Structure
 - b. DNA Repair Mechanisms
 - i. Non-homologous End-Joining
 - ii. Homologous Recombination
 - c. The DNA Damage Response
3. Radiation Targets 2: Cell Proliferation, Cell Death and Survival
 - a. Cell Cycle Kinetics
 - b. Cell Survival Assays
 - c. Apoptosis, Necrosis, Senescence
 - d. Models of Cell Survival

4. Molecular Signaling and Cancer: Relevance to RT
 - a. Molecular Markers for Cancers
 - b. Predictive Assays
 - c. Biological targeting
5. Clinically Relevant Normal Tissue Responses to RT
 - a. Assays for Radiation Effects on Normal Tissues
 - b. Effects of Dose Fractionation
 - c. Latency
 - d. Tissue Tolerance
 - e. Tissue Organization
 - i. Flexible and Hierarchical Tissues
 - ii. Functional Subunits
 - iii. Dose-Volume Histograms
6. Tumor Responses to RT
 - a. Solid Tumor Assay Systems
 - b. Influence of Tumor Microenvironment on Radiotherapeutic Outcome
 - c. Kinetics of Tumor Growth and Regression
 - d. Therapeutic Ratio
7. The Radiobiology Behind Dose Fractionation
 - a. The 4 Rs of Radiobiology in Fractionated Radiation Therapy
 - i. Repair
 - ii. Reoxygenation
 - iii. Redistribution
 - iv. Repopulation
8. The Radiobiology Behind Alternate Physical Forms of Radiation Delivery
 - a. Modeling Radiobiological Responses
 - i. Linear Quadratic Formula
 - ii. Biologically Effective Dose
 - b. Hyperfractionation Schemes
 - c. Accelerated Fractionation Schemes
 - d. Hypofractionation Schemes
9. Biologic Modulation of RT
 - a. IMRT
 - b. Protons
 - c. Brachytherapy
10. Interaction of RT with CT and other Agents
 - a. Chemo-radiotherapy
 - b. Radiosensitizers,
 - c. Hypoxic Cell Sensitizers
 - d. Radioprotectors
 - e. Hyperthermia
11. Possible Effects of Radiation Exposure Inside and Outside the Clinic
 - a. Low Dose Effects of Radiation
 - i. Radiation Carcinogenesis
 - ii. Heritable Effects of Radiation
 - iii. Radiation Effects on Developing Fetus

- b. High Dose Effects of Radiation
 - i. Total Body Irradiation
 - ii. Combined Injury

Annual 2-Day Radiobiology Symposium - Annually

Annually per announced schedule

Full 2 Day Course, typically held on a Friday and Saturday

Learning Goals & Objectives by Training Year:

This course follows the same learning objectives as the annual Friday course, and is provided for additional exposure.

Core Competencies: Patient Care, Medical Knowledge

Evaluation Methodology: ACR In-Training Examination Results

Teaching Faculty: William McBride, PhD, DSc
Kei Iwamoto, PhD
Nicholas Cacalano, PhD
Frank Pajonk, MD, PhD
Steve P. Lee, MD, PhD
Others per annual scheduling

Typical Lecture Syllabus:

1. Interaction of radiation with biological matter: what is dose?
2. Radiation targets 1: DNA, chromosome and chromatid damage and repair
3. Radiation targets 2; cell proliferation, cell death and survival
4. Clinically relevant normal tissue responses to radiotherapy
5. Molecular signaling and cancer: relevance to radiotherapy
6. Biologic targeting with radiotherapy
7. Interactions of radiotherapy with other agents
8. The biology of dose fractionation
9. The radiobiology of alternate physical forms of radiation delivery
10. The effects of radiation exposure inside and outside the clinic
11. Tumor responses to radiotherapy

Radiopharmaceutical Administration & Handling Lecture Series (Annually)

Friday AM Lecture Series

Weekly per annual schedule

7:00 – 9:00 a.m.

Learning Goals & Objectives by Training Year:

Residents at all PGY levels will be taught the principles of radiation safety as it applies to the application of radiopharmaceuticals; the management of cancers using radiopharmaceuticals, including the appropriate dose calculation, handling, and appropriate delivery of the radiopharmaceutical administration.

Required Reading: Course Materials distributed annually by Dr. Carol Marcus

Core Competencies: Patient Care, Medical Knowledge

Evaluation Methodology: Proctoring Completion per ABR regulations for Oral Boards
Passing Grade on Final Exam

Teaching Faculty: Carol Marcus, PhD, MD

Lecture Syllabus:

1. Therapy for bone Introduction to radiopharmaceutical therapy; history; pertinent radionuclide physics review; regulatory considerations, including calculations to satisfy the 500mrem patient discharge requirement; P-32 sodium phosphate; P-32 chromic phosphate and other radiopharmaceutical therapy colloids; patient management.
2. Use of I-131 sodium iodide for treatment of hyperthyroidism and thyroid cancer; patient management.
3. Metastases (Sm-153-EDTMP, Sr-89 chloride, Sn-117m- DTPA, Re-186-HEDP); internal dosimetry considerations; patient management.
4. Radio labeled monoclonal antibodies for lymphoma; experimental and future therapeutic radiopharmaceuticals.

Radiation Therapy Physics Lecture Series (Annually)

Friday AM Lecture Series

Weekly per annual schedule

7:00 – 9:00 a.m.

Learning Goals & Objectives by Training Year:

PGY2: Residents at this level will be expected to be able to understand the material and be able to answer the questions associated with each lecture.

PGY3: Residents at this level will be expected to be able to discuss the concepts and answer questions based upon the RAPHEX Practice exam.

PGY4: Residents at this level will be expected to be able to read current papers in clinical radiation physics and to use the concepts in these lectures to understand the concepts, and to successfully pass the radiobiology section of the American Board of Radiology board exams.

Required Reading: *“The Physics of Radiation Therapy”*. Faiz Khan. Publisher: Williams and Wilkins, Baltimore, 2003 (3rd edition)

Core Competencies: Patient Care, Medical Knowledge

Evaluation Methodology: RAPHEX Exam Scores
ACR In-Service Exam Scores
American Board of Radiology Board Exam

Teaching Faculty: James Smathers, PhD
John DeMarco, PhD
Nzhde Agazaryan, PhD

Lecture Syllabus:

1. Ionizing Radiation
2. Production of x-rays
3. Interaction of Ionizing Radiation with Matter
4. Quantities for Describing the Interaction of Ionizing Radiation with Matter
5. Measurement of Ionizing Radiation
6. Radioactive Decay/Therapy/Nuclear Medicine
7. Diagnostic X-ray Film Fundamentals
8. Radiotherapy Dose Distributions
9. Dose calculation algorithms
10. Dosimetric Calculations: Primary & Scatter
11. Photon Treatment Planning I
12. Photon Treatment Planning II
13. Electron Treatment Planning
14. Proton Therapy Characteristics
15. Low-energy Brachytherapy: Prostate implants & eye plaques
16. High-Dose Rate Brachytherapy
17. 3D Conformal Radiation Therapy
18. Intensity Modulated Radiation Therapy
19. Image-Guided Radiation Therapy
20. Stereotactic Radiosurgery
21. Image-Guided Radiosurgery
22. Total-Body Irradiation
23. Radiation Protection
24. Radiation Shielding
25. Quality Assurance

Biostatistics Course (Annually)

Friday AM Lecture Series
Weekly per annual schedule
7:00 – 9:00 a.m.

Learning Goals & Objectives by Training Year:

Residents at all levels of training will learn to use various theories for of statistical analysis as it relates to the practice of Radiation Oncology; including experimental design and hypothesis and decision analysis.

Core Competencies: Patient Care, Medical Knowledge, Practice Based Learning & Improvement, Systems Based Practice

Evaluation Methodology: ACR In-Service Exam Scores

Teaching Faculty: As Scheduled, Refer to Department Calendar

Lecture Syllabus:

1. Experimental Designs (e.g. case-control, randomized clinical trials, etc)
2. Hypothesis testing concepts (e.g. Type I error, p-value, power, etc)
3. Decision analysis (e.g. sensitivity, PPV, ROC analysis, etc)
4. Sample size estimation

Pain Management and Palliative Care Lecture Series - Annually

Friday AM Lecture Series

Weekly per annual schedule

7:00 – 9:00 a.m.

Learning Goals & Objectives by Training Year:

Residents at all levels of training will learn the fundamental medical, social, ethical, and psychological issues of treating the terminally ill; including a broad spectrum of treatment options for patients with pain management concerns.

Core Competencies: Patient Care, Medical Knowledge

Evaluation Methodology: Attendance

Teaching Faculty: David Wallenstein, MD
Director of the UCLA Palliative Care Program

Lecture Syllabus:

1. Pain management using narcotic intervention
2. Palliative Care for End of Life

“Life Curriculum” Interactive Training (Web-Based Modules)

Web Based Interactive Modules

Must be completed by each resident on an annual basis or as listed in the Learning Objectives.

http://www.gme.medsch.ucla.edu/director/life_curriculum.htm

Learning Goals & Objectives all training years:

At the conclusion of this activity, participants should be able to:

- i. Acknowledge the stresses inherent in physician training and how they can lead to “impairment”
- ii. Identify common challenges such impairments present to programs and residency program directors
- iii. Diagnose representative situations of “impaired performance” due to fatigue and other conditions

- iv. Select methods that residency programs can use to manage stress and fatigue
- v. Identify typical manifestations for suboptimal performance and strategies for evaluation
- vi. Contrast the strengths and weaknesses of commonly available resources

Core Competencies: Interpersonal & Communications Skills, Professionalism, Practice Based Learning & Improvement

Evaluation Methodology: Certificate of Completion for both modules

Teaching Faculty: Refer to the website for full faculty listing.

Lecture Syllabus:

Life Curriculum 1

1. Introduction
2. Fatigue
3. Stress and Depression
4. Substance Abuse
5. Disruptive Behavior

Life Curriculum 2

6. Burnout
7. Boundary Violations
8. Impairments
9. Instructive Feedback
10. Conclusion

Teaching the Resident to Teach (Annually)

Friday AM Lecture Series

Weekly per annual schedule

7:00 – 9:00 a.m.

Learning Goals & Objectives by Training Year:

Residents in all training levels are expected to understand the concepts presented and be able to prepare one didactic lecture for evaluation during each semi-annual review period.

Core Competencies: Patient Care, Medical Knowledge, Practice Based Learning & Improvement, Interpersonal & Communication Skills, Professionalism, Systems Based Practice

Evaluation Methodology: Ongoing feedback is provided by the faculty during each session or presentation.

One lecture must be reviewed by the Teaching Faculty and written feedback provided using the Teaching Evaluation Form per semi-annual review period. The resident may select the lecture or presentation and confirm attendance with their faculty supervisor.

Resident interactions with Medical Students in a teaching capacity will also be evaluated by the Medical Student using the Teaching Evaluation Form.

Teaching Faculty:

Steve P. Lee, MD, PhD
Frank Pajonk, MD, PhD

Lecture Syllabus:

1. Know your audience
 - a. What is the demographic/audience
 - b. What is their professional/intellectual background
 - c. What is it they wish to know
2. Know your topic/subject
 - a. What is the learning objective
 - b. Be prepared and do your research
3. Presentation Skills
 - a. Verbal and Body Language
 - b. Visual aides
 - c. Humor as a tool
 - d. Take Home Messages
4. How to Assess Your Own Teaching Skills
 - a. Direct feedback from your audience
 - b. Feedback through surveys, etc.
 - c. Repeat requests for presentation
 - d. Self-Assessment of your own presentation
5. How to read supporting literature

Intradepartmental and Interdepartmental Classes, Tumor Boards and Conferences

Beyond the clinical responsibilities, residents have an obligation to learn through attending conferences within the department and throughout the Jonsson Comprehensive Cancer Center, as well as at national conferences, through interaction with fellow residents and faculty, and by teaching medical students.

Several important teaching courses, lecture series, seminars, tumor boards, and conferences occur on a weekly basis. Some are intradepartmental whereas others are interdepartmental to complement the interdisciplinary nature of our program.

In compliance with ACGME guidelines, attendance at multidisciplinary tumor boards and conferences is tracked to document completion of the requisite training for medical oncology, oncologic pathology, and diagnostic imaging.

Residents are expected to attend all tumor boards and conferences with their assigned attending based on rotation, as detailed in the Rotational Goals & Objectives. Attendance documentation is the resident's responsibility. A copy of the tumor board patient list or announcement must be given to the Program Coordinator with your signature and the signature of the attending physician. Attendance will be abstracted against the tumor board schedule, and attendance of 75% of the scheduled meetings is required for rotation credit.

Weekly Departmental Meetings/Clinical

Morning Rounds/Case Rev.	RONC Conf Room	Monday, Wednesday, Thursday 8:00 – 9:00 a.m. each week
Chart Rounds	RONC Conf Rm	Tuesday 12:00 – 1:00 p.m.
Clinical Didactic Lecture Series	RONC Conf Rm	Thursday, Friday 12:00 – 1:00 p.m.

Monthly or Quarterly Departmental Meetings/Clinical

Continuous Quality Improvement (CQI)	RONC Conf Rm	Monthly, last Thursday of each month 1:00 – 2:00 p.m.
Quality Oversight Committee	RONC Conf Rm	Quarterly per schedule or Ad Hoc as called by Chair
Translational Thursday	RONC Conf Rm	Monthly, last Thursday of each month 2:00 – 5:00 p.m.

Multidisciplinary Tumor Boards

(Identified by rotation of mandatory attendance.)

Pediatric Neuro Oncology	RONC Conf Rm	Monday, 12:00-1:00 p.m. 1 st and 3 rd week of each month
Breast Cancer	Revlon Breast Center Conf Rm	Monday, 4:00 – 5:00 p.m. Every other Week
Genitourinary (GU)	Clark Urology Conf Rm 200 Med Plaza, 1st floor	Tuesday, 1:00 – 2:00 p.m. Bi-Weekly per Rotating Schedule

General Pediatrics	Haimer Conf Rm, 2nd Floor CHS/Davies Center	Tuesday, 3:00 – 4:00 p.m. 2nd Tuesday of Each Month
Gastrointestinal (GI)	Radiology Conference Room RRUMC, 1 st Floor	Tuesday, 4:00 – 5:00 p.m. 3 rd Tuesday of Each Month
Surgery C “Pancreatic”	Radiology Conference Room RRUMC, 1 st Floor	Tuesday, 4:00 – 5:00 p.m. 3 rd Tuesday of Each Month
Adult Neuro Oncology (Brain)	RONC Conf Rm	Wednesday, 11:00 – 12:00 p.m. Weekly
Lymphoma	CHS Bauer Conf Rm	Wednesday, 12:00 – 1:00 p.m. 2nd & 4th wks
Head & Neck (H&N)	H&N Ste. (200 MP, #550)	Wednesday, 1:00 – 2:30 p.m. weekly
Revlon Breast Center Multi Clinic (Breast)	RBC Conf Rm	Wednesday, 3:00 – 5:00 p.m. weekly
Hepatobiliary	RONC Conf Rm	Wednesday, 4:30 – 5:30 p.m. 2nd & 4th wks
Pituitary	RRUMC, Level B Classroom	Wednesday, 1:00 – 2:00 p.m. Monthly
Musculoskeletal	RONC Conf Rm Sta Monica, Classroom B 1st Flr	Thursday, 3:30 – 4:30 p.m. 1st & 2nd wks 3rd & 4th wks
Thoracic Oncology	RONC Conf Rm	Friday, 8:00 – 9:00 a.m. Weekly
Radiosurgery (Neuro)	RONC Conf Rm	Friday, 9:30 – 10:30 a.m. Weekly
Gynecological Oncology	RONC Conf Rm	Friday, 10:30 – 12:00 a.m. Weekly

Elective Policy and Guidelines

Radiation Oncology Resident Physicians on the Clinical Pathway have the opportunity to take up to two (2) months of discretionary clinical electives during the course of training. Elective time will be scheduled during the PGY3 and PGY4 training years only. Electives must meet the overall criteria of good pedagogy associated with ACGME criteria and approved by the Residency Curriculum Review Committee (RCRC). A preapproved list of electives has been created by the RCRC which adhere to the ACGME Guidelines and Residency Program Goals and Objectives; and are encouraged. A petition may be made to participate in non-preapproved electives, but approval is not guaranteed.

The following electives have been pre-approved by the RCRC for discretionary electives:

Affiliated Sites:

Long Beach Memorial Medical Center
2801 Atlantic Avenue
Long Beach, CA 90806

Faculty Mentor: Dr. Nisar Syed
Site Coordinator: Barbara Vigil
Contact Phone No: (562) 933-0300 Ext 30340
Brachytherapy - two or four week rotations

Seattle Prostate Institute
1101 Madison, Ste. 1101
Seattle, WA 98104

Faculty Mentor: Dr. Peter Grimm
Site Coordinator: Dawn Scott
Contact Phone No: (206) 215-2490
Brachytherapy - two or four week rotations

All elective time is scheduled during the assigned block rotation schedule only. Complete the *Elective Request Form (Appendix C)* and email it to the Residency Administrator for review.

Pre-approved elective requests should be submitted no less than 2 months prior to the elective start date. In addition to the Elective Request Form, each institution may require additional paperwork in order to satisfy GME, ACGME, state, and national requirements. It is imperative that ample time be allowed for the completion and submission of all necessary documentation.

Petition for a non-preapproved elective must be submitted 3 months prior to the scheduled time of participation in the elective. Submit a completed Elective Request Form, a copy of the educational goals and objectives of the elective, and a letter of verification from the faculty mentor confirming their willingness to adhere to program policies and procedures regarding educational quality and evaluation processes. Approval of a non-preapproved elective is at the sole discretion of the Program Director and with the advice and consent of the Department Chair.

Elective approval will be based upon the following criteria:

- Elective represents a valuable educational experience which can not be obtained at the home institution or its affiliates.
- Documented appropriate clinical curriculum relevant to radiation oncology training
- Mentor agreement to sponsor the resident and uphold the program policies and procedures, including evaluations
- Requestor is in good standing (i.e. not under administrative or probationary review)

All Elective Request Forms will be reviewed by the Program Director, and when deemed appropriate the Residency Curriculum Review Committee. A determination response will be returned to the requesting residents within four weeks of receipt.

The Residency Program Coordinator will send a letter of approval outlining the objectives and evaluation requirements for each rotation to the Faculty Mentor upon approval. Resident mentors for electives are required to submit evaluations consistent with the policies and procedures of the Program. It is the resident's responsibility to assure that the completed evaluation form is submitted in a timely manner so that the resident may receive credit for the elective.

If any of the requirements for elective are not met, the resident will not receive credit for the time spent on the elective, and training may be extended.

Scholarly Activity and Research Guidelines

The department supports all aspects of scholarly activity by both residents and faculty, and towards that goal has multiple formats for research activities.

A department-wide Clinical Research Committee (CRC) reviews all research trials and projects initiated by the residents and faculty members. The CRC commits to providing ongoing advice and direction for research, funding, and publication for all members of the department. Its focus for Residency Training is to provide ample support for research activities, guidance for grant writing and procurement, faculty mentorship of projects and publication review and submission advice.

Each resident physician is required to design and complete one project during the course of training. The project may be in clinical, bench research, or translational research. Successful completion of a project will be the production of a manuscript which is approved by the CRC for submission to peer-reviewed journals. The acceptance of a manuscript for publication in a peer-reviewed journal is not required, but submission is strongly recommended.

A Faculty Staff member will be assigned to mentor each resident in his/her research skills and productivity, and is the department liaison for projects which intersect with other departments. All research activities initiated by a resident physician MUST have a Faculty Member who is a staff member of the Department of Radiation Oncology. The Faculty Mentor will advise the resident in selecting and designing a successful research project, oversight of ongoing project details, assistance with grant work (if applicable), and ultimately the manuscript produced and submitted to the CRC.

Guidelines and process for research project initiation:

1. Identify a Faculty Mentor
2. Submit an Initial Project Proposal, which includes the following
 - a. Letter of Commitment (the faculty member accepts responsibility for oversight of the project)
 - b. General Project Overview and Goal(s)
 - c. Estimated timeline and resource commitments
3. Upon approval of project idea by CRC, a full project proposal must be submitted.
 - a. Specific research proposal and goal(s) of project
 - b. Course of action and timeline to achieve goal(s)
 - c. Required resources and support
 - d. Anticipated or intended support (e.g. grants from RSNA, ASTRO, Hughes, etc.), if any

Departmental Policies & Procedures

Personnel Issues

Most personnel issues can be answered for you by the Program Coordinator or the Business Office. Here is a brief overview of some common items.

The Business Office will handle all general personnel items, such as payroll issues, loan deferments, parking, etc. Personnel policies are detailed and upheld according to the House Staff Regulations and Medical School Policies. Parking permits are available and can be coordinated through the business office. All benefits questions should be directed to the House Staff office and/or the Business office.

Submit all loan paperwork to Marcella Tong for confirmation of the grace period. You will need to repay your loan for six months, and then it will go into fellowship grace period (rest of the residency) depending on the type of loan. Please direct all loan questions to Marcella in the Business Office.

The Program Coordinator can help direct your questions to the correct person. A complete listing of Healthcare benefits, including policy information, eligibility, premiums, etc. is available on the House Staff website <http://www.gme.medsch.ucla.edu/>.

Leaves of Absence

Any time you are out of the department is considered a leave (vacation, travel, illness, etc.). All leave requirements are subject to GME, ACGME, ABR, State and National guidelines. All absences must be requested in writing per the below policies, and in accordance with university, local, state, and federal guidelines. Additional information may be found on the GME Website.

Vacation

Residents are permitted four weeks (20 working days) of vacation time during any one academic year (July – June of each year) per current GME policy and ABR Certification Requirements.

The following general parameters have been set and will be considered a conflict, which may result in the denial of any request:

- Requests may not exceed 10 working days in length or cumulatively per rotation
- Requests must be made no less than one month in advance of the requested time off
- Only one (1) resident physician will be allowed vacation at any one time; regardless of rotational assignment
- Vacation may not be taken during the first and last week of any rotation block

Vacation time must be requested no less than 1 month prior to the start of the time off. Requests may be made by completing the *Request for Time Off Form (Appendix C)* or the Residency Website. All requests must be submitted via email as described below:

- Submit the Request for Time Off Form via email to the Program Administrator
- Program Coordinator will review for time availability, update the clinic calendar, and check for conflicts; if there are no conflicts the request will then be forward for review and approval. If there are conflicts, the request will be returned to the requestor as denied and the conflicts listed.
- Approval Signatures are required from each of the following for a request to be valid:
 - Chief Resident
 - Faculty Mentor for the rotation scheduled during the requested absence

- Program Director final approval/denial
- A copy of the approved or denied request will be returned for your records.

Unused vacation time will NOT be carried over into the next period, so please take your vacations. *Remember that it is your responsibility to provide a complete sign-out for any absences.*

Sick Leave

Residents are permitted ten sick days per academic year. Sick time is cumulative for the entire year, and can only be used for illness, doctors' appointments, or other health related issues, such as disability.

If you are unable to make your shift due to illness, you must page the Chief Resident to arrange clinical coverage, a voicemail or an email must be received by the Program Coordinator confirming that the resident has made contact with the Chief Resident, and the expected return to work date.

Sick leave may also be arranged in advance for doctors' appointments, medical leave, or family medical appointments by completing the *Request for Time Off Form*.

All medical and health related absences are subject to the disability policies as established by the GMEC and University Regents. They may also be subject to California State and Family Medical Leave Policies.

Jury Duty

Leave of absence for jury duty shall be granted with no loss in pay or benefits. Submit a copy of the Jury Summons with the Request for Time Off form to the Chief Resident for staffing coordination and approval. A copy of the Jury Service Confirmation must be submitted to the Residency Program Coordinator. If the Jury Service Confirmation is not received, the absence will be converted to a vacation day.

Maternity Leave

Paid Maternity Leave is two weeks each year. Time taken in addition to this with the exception of sick/vacation time will be leave without pay and may require extension of training to meet ACGME training requirements and ABR Board Certification eligibility.

Maternity leave must be requested in writing, no less than four (4) months prior to the anticipated date of leave. The written request must include the anticipated beginning leave date, return to work date, and any other special considerations that may be anticipated as a result of the maternity leave.

Paternity Leave

Paid paternity leave is one week provided the following conditions are met:

The house officer has given written notice to the Program Director of his intention to take paternity leave at least 30 days prior to the expected birth or adoption. The paternity leave cannot be taken later than 30 days after the actual birth/adoption date, nor can it be commenced earlier than 30 days prior to the projected birth/adoption date.

Military Leave

House officers shall be excused from their training program to meet military training obligations when such absences are approved by the program director.

Family and Medical Leave

Family and medical Leave is provided for an eligible house officer's serious health condition, the serious health condition of a house officer's child, spouse or parent, or to bond with the house officer's newborn, adopted, or foster care child. Medical leave may be requested by a house officer for a medical condition affecting his/her ability to continue in a training program or provide patient care. These leaves must include the use of vacation, sick leave, or education leave at the onset of the leave. The duration of the leave must conform to one's departmental and American Board requirements together with the applicable state and federal law, including AB1460, Federal Family and Medical Leave Act of 1993. Both Family and Medical Leave are unpaid leaves.

Eligibility

A resident must have completed the initial year of appointment to be eligible for either a Family Leave of up to 12 work weeks in a 12 month period, or a Medical Leave of up to 12 months.

Pregnancy

A female resident is entitled to a maximum of 4 months of unpaid leave for pregnancy-related disability in addition to the 12 weeks of Family Leave entitlement in a 12 month period.

Travel Policies and Procedures

Each resident is provided with a travel allowance for their four year residency, based on department funds availability. This allowance is restricted to travel costs for attendance of national conferences, such as ASTRO, RSNA, etc. All travel must be pre-authorized by the Chief Resident and Program Director or reimbursement may be denied. Any non-travel related expense reimbursements are at the sole discretion of the Program Director.

Annual Membership Fees for ASTRO, RSNA and LARS may be reimbursed from the Resident Travel Allowance. Other organization and/or society memberships will be reimbursed at the sole discretion of the Program Director. *Medical license and/or board fees will not be considered for reimbursement.*

All departmental travel reimbursement requires prior written approval via the *Travel Request Form (Appendix C)*. Travel requests must be made no less than 1 month prior to the anticipated travel dates. All travel reimbursements, and leave allowance will comply with the current UCLA Travel Policies. For detailed information on travel policies, please see the UCLA Travel Website ([UCLA Travel Services Website](#)).

Upon completion of travel, submit supporting documents, and receipts as per the current UCLA Travel Policies to the Residency Coordinator for reimbursement. Travel vouchers will not be processed without a copy of the approved Travel Request Form.

Travel to national meetings may be supported for residents giving oral presentations of their manuscript, contingent upon approval by the Program Director and Department Chair. Submit Travel Request Form along with a copy of the manuscript being presented to the Program Director for approval. *Only oral presentations at major national conferences and meetings will be considered for reimbursement.*

The department may support residents at any meeting from which they have received a travel award. Submit the estimated travel expenses, less your travel award, along with a copy of the abstract and/or manuscript which won the award to the Program Director for approval. *Reimbursement may be denied for failure to submit manuscripts to the Program Director prior to travel.*

All meeting support is contingent upon availability of department funds.

Policy on Moonlighting

In accordance with UCLA House Staff Policy, moonlighting will be permitted at the Program Director's discretion. All moonlighting activities must be submitted to the Program Director for review and approval on an individual basis. Activities may include radiation oncology services, but the following limitations and restrictions will apply.

- Resident must be in good standing i.e. cannot be under administrative or probationary review.
- Moonlighting activities may only be scheduled on personal time. This is defined as vacation time, after clinical hours and weekends when not on call for radiation oncology.
- No leave from clinic will be permitted. Nor will after hours coverage be permitted while the resident is on call for radiation oncology.
- Moonlighting activities in the field of radiation oncology will only be permitted in accordance with the Goals and Objectives of the training program.

It is the responsibility of the resident to request written authorization from the Program Director for all moonlighting activities. Submit the request, and appropriate documentation of professional liability coverage to the Program Director. *(The university will NOT cover Liability /Malpractice coverage while performing services outside of the training program.)* Failure to comply with the proper notification and approval policies below will result in disciplinary action up to and including termination.

- Moonlighting without prior written approval from the Director
- Continuing to moonlight without reporting changes in hours or scope of duties
- Continuing to moonlight after permission to do so has expired or been revoked
- Misrepresenting the nature or scope of the moonlighting activity
- Moonlighting without adequate and appropriate malpractice insurance coverage

Residency Training Licensing, Permitting, and Identification Requirements

PGY2 Requirements

California Medical License (CML)

DEA Registration (DEA)

X-Ray Supervisor & Operator Permits

National Provider Identifier (NPI)

Deadlines

February 1st of PGY2/Incoming Year

June 30th of PGY2/Incoming Year

June 30th of PGY2/Incoming Year

June 30th of PGY2/Incoming Year

PGY3 – PGY5 Requirements

Maintain valid CML, DEA and X-Ray Certifications

Reimbursements of Permit and Licensing Fees

California Medical License (CML)

The CML fees are not reimbursable by the program or under refund through the department. All licensing and renewal fees are the responsibility of the resident physician.

DEA Registration (DEA)

Physicians practicing in a federal or state facility, who are required to obtain an individual DEA registration in order to carry out their duties, are exempt from the DEA registration fee (Section 1301.21 of Title 21,

Exemption from fees). Please visit the GME website for additional information on completing the fee exemption requests.

<http://www.gme.medsch.ucla.edu/certification/registration.htm>

X-RAY Supervisor & Operator Permit (X-Ray)

The X-Ray Supervisor & Operator Permit consists of Examination Fees and Licensing Fees. Initial examination fees and licensing fees will be reimbursed for both Operator/Supervisor and Fluroscopy. Below is the home page for application forms, fees, and information.

<http://www.dhs.ca.gov/rhb/>

Please be aware that a portion of the fee must be submitted using a Cashier's Check. The university does not have a good mechanism for obtaining Cashier's Checks from a department fund. You will need to obtain the cashier's check and submit copies of the following documents for reimbursement:

- Original copy of the cashier's check receipt
- Copy of the cashier's check
- Copy of the application

Renewal fees will be covered by the department, if initial licensing is obtained by the deadline, for X-Ray Permits only.

Appendix A:

Evaluation Document Samples

- 1. Radiation Oncology Resident Global Form**
- 2. Self-Assessment and Reflection Form**
- 3. Radiation Oncology Resident Evaluation – Modified 360**

Radiation Oncology Resident Global Rating Form

Resident: _____ Rotation: _____

Faculty: _____ Date: _____

Please circle the option that most closely reflects the resident's performance.

Unsatisfactory = Several behaviors performed poorly or missed (ratings 1, 2, or 3)

Satisfactory = Most behaviors performed acceptably (ratings 4, 5, or 6); satisfactory performance is described below

Superior = All behaviors performed very well (ratings 7, 8, or 9)

	UNSATISFACTORY			SATISFACTORY			SUPERIOR		
	1	2	3	4	5	6	7	8	9
Patient Care									
1. Information gathering	1	2	3	Obtains complete & accurate patient histories; performs thorough & appropriate physical exams; obtains enough information to include or exclude likely, significant problems			7	8	9
2. Treatment process	1	2	3	Able to plan and implement both external beam & brachytherapy treatments			7	8	9
3. Patient follow-up	1	2	3	Plans and executes appropriate follow-up plan; coordinates care with other health care providers; responds quickly & appropriately to unexpected follow-up events			7	8	9
Medical Knowledge									
4. Analytic thinking	1	2	3	Uses effective problem solving; demonstrates sound clinical judgment; applies analytic approach to clinical situations			7	8	9
5. Application	1	2	3	Applies clinical and supportive scientific data to the management of clinical problems; understands the rationale for various therapies			7	8	9
Practice-based Learning & Improvement									
6. Ongoing learning	1	2	3	Is able to locate, appraise, & assimilate evidence from scientific studies related to their patients' health problems			7	8	9
7. Improvement	1	2	3	Changes practice behaviors in response to feedback from others & review of own practice & improvement initiatives			7	8	9
Systems-based Practice									
8. Care coordination	1	2	3	Works effectively with other providers, inside & outside department, to provide complete & integrated care; reconciles contradictory recommendations; understands different healthcare delivery systems & medical practices			7	8	9
9. Cost-conscious care	1	2	3	Recommends appropriate use of technologies in different clinical situations			7	8	9
Professionalism									
10. Responsibility	1	2	3	Accepts responsibilities willingly; follows through on tasks carefully and thoroughly; is dependable & industrious; responds to requests in a helpful and prompt manner			7	8	9
11. Patient needs	1	2	3	Considers each patient's unique needs & characteristics regardless of patient culture or socioeconomic status; puts patients' needs above own interests			7	8	9

	UNSATISFACTORY			SATISFACTORY			SUPERIOR		
	1	2	3	4	5	6	7	8	9
12. Integrity & ethical behavior				Takes responsibility for actions; admits mistakes; manages conflicts of interest; addresses ethical issues; maintains patient confidentiality					
Interpersonal & Communication Skills									
13. Patient & family communication	1	2	3	4	5	6	7	8	9
	Establishes rapport; is respectful; explains risks, benefits & alternatives of treatment								
14. Medical records	1	2	3	4	5	6	7	8	9
	Completes timely, thorough, & understandable medical records								

Overall Comments (please explain any areas of unsatisfactory performance)

Evaluator Signature

Resident Signature

The resident and I discussed this evaluation and the resident's overall performance in the program, and ways to improve performance as needed.

Program Director Signature

Date



RADIATION ONCOLOGY RESIDENCY TRAINING PROGRAM

Resident Self-Assessment/Reflection

Name (Print): _____ PGY: _____ Date: _____

The Radiation Oncology Residency Training Program is committed to resident development of ongoing self-assessment and self-reflection skills. Each resident needs to complete the following self-assessment form prior to each 6-month formal meeting with program leadership.

PATIENT CARE competencies (gather essential/accurate information about pts; make informed decisions about diagnostic/therapeutic interventions based on pt information/preferences, up-to-date scientific evidence/clinical judgment; develop/carry out patient management plans; counsel/educate patients and families; perform competently all medical/invasive procedures essential for the area of practice.)

How I am doing? (circle) **Feel Uncomfortable** **Feel Comfortable** **Feel Very Comfortable**
Need Improvement (circle) **A lot** **Some** **Little to none**

Area(s) in which I feel strong _____

Area(s) I need to keep improving _____

Specific objectives for next 6 months and strategies to achieve objectives

1. _____
2. _____

MEDICAL KNOWLEDGE competencies (demonstrate an investigatory/analytic thinking approach to clinical situations; know and apply the basic and clinically supportive sciences which are appropriate)

How I am doing? (circle) **Feel Uncomfortable** **Feel Comfortable** **Feel Very Comfortable**
Need Improvement (circle) **A lot** **Some** **Little to none**

Area(s) in which I feel strong _____

Area(s) I need to keep improving _____

Specific objectives for next 6 months and strategies to achieve objectives

1. _____
2. _____

Practice based learning competencies (analyze practice experience/perform practice-based improvement activities; locate, appraise, and assimilate evidence from scientific studies related to pts' health problems; apply knowledge of study designs/statistical methods to the appraisal of clinical studies and other information on diagnostic/therapeutic effectiveness; use information technology to manage/access medical information.)

How I am doing? (circle) **Feel Uncomfortable** **Feel Comfortable** **Feel Very Comfortable**
Need Improvement (circle) **A lot** **Some** **Little to none**

Area(s) in which I feel strong _____

Area(s) I need to keep improving _____

Specific objectives for next 6 months and strategies to achieve objectives

1. _____
2. _____

Name: _____

PGY: _____

Date: _____

Interpersonal and Communication Skills (create and sustain a therapeutic and ethically sound relationship with patients use effective listening skills and elicit and provide information using effective nonverbal, explanatory, questioning, and writing skills; work effectively with others as a member or leader of a health care team or other professional group)

How I am doing ? (circle) **Feel Uncomfortable** **Feel Comfortable** **Feel Very Comfortable**
Need Improvement (circle) **A lot** **Some** **Little to none**

Area(s) in which I feel strong _____

Area(s) I need to keep improving _____

Specific objectives for next 6 months and strategies to achieve objectives

1. _____
2. _____

Professionalism competencies (demonstrate respect, compassion, and integrity; responsive to the needs of patients and society that supercedes self-interest; accountability to patients, society, and the profession; committed to excellence and on-going professional development ; demonstrate a commitment to ethical principles pertaining to provision or withholding of clinical care, confidentiality of patient information, informed consent, and business practices; demonstrate sensitivity and responsiveness to patients' culture, age, gender, and disabilities).

How I am doing ? (circle) **Feel Uncomfortable** **Feel Comfortable** **Feel Very Comfortable**
Need Improvement (circle) **A lot** **Some** **Little to none**

Area(s) in which I feel strong _____

Area(s) I need to keep improving _____

Specific objectives for next 6 months and strategies to achieve objectives

1. _____
2. _____

Professionalism competencies Maintaining duty hours within ACGME prescribed limits (no more than 80 hours/week averaged over 4 weeks; 10 hours between shifts; no longer than 30 hours/shift and no new patients after 24 hours) is a challenge for residents on some rotations.

Have you exceeded any duty hour limitations within the past 6 months? **YES** **NO**

Have you been able to develop personal strategies to enable yourself to stay within duty hour requirements?

How I am doing ? (circle) **Feel Uncomfortable** **Feel Comfortable** **Feel Very Comfortable**
Need Improvement (circle) **A lot** **Some** **Little to none**

Area(s) in which I feel strong _____

Area(s) I need to keep improving _____

Specific objectives for next 6 months and strategies to achieve objectives

1. _____
2. _____

Name: _____

PGY: _____

Date: _____

Systems-based practice competencies (understand how their patient care and other professional practices affect other health care professionals, the health care organization, and the larger society and how these elements of the system affect their own practice; know how types of medical practice and delivery systems differ from one another, including methods of controlling health care costs and allocating resources; practice cost-effective health care and resource allocation that does not compromise quality of care; advocate for quality patient care and assist patients in dealing with system complexities; know how to partner with health care managers and health care providers to assess, coordinate, and improve health care and know how these activities can affect system performance).

How I am doing? (circle) **Feel Uncomfortable** **Feel Comfortable** **Feel Very Comfortable**
Need Improvement (circle) **A lot** **Some** **Little to none**

Area(s) in which I feel strong _____

Area(s) I need to keep improving _____

Specific objectives for next 6 months and strategies to achieve objectives

1. _____

2. _____

Form reviewed by Program Director during Semi-Annual Review as documented in the Semi-Annual Review

Summary dated _____ .

Radiation Oncology Resident Evaluation – Modified 360

Resident: _____ Rotation Dates: _____

Evaluator: _____ Date (today): _____

Circle the number that indicates how characteristic each behavior below is of the resident you are evaluating.

	NOT AT ALL CHARACTERISTIC			CHARACTERISTIC			HIGHLY CHARACTERISTIC		
Professionalism									
1. Responsibility	1	2	3	4	5	6	7	8	9
	Accepts responsibilities willingly; follows through on tasks carefully and thoroughly; is dependable and industrious; responds to requests in a helpful and prompt manner								
2. Scope of practice	1	2	3	4	5	6	7	8	9
	Recognizes limits of his/her abilities; asks for help when needed; refers patients when appropriate; exercises authority accorded by position and /or experience								
3. Patient needs	1	2	3	4	5	6	7	8	9
	Responds to each patient's unique needs and characteristics by being sensitive to issues related to patient culture, age, gender and disabilities; provides equitable care regardless of patient culture or socioeconomic status								
4. Integrity and ethical behavior	1	2	3	4	5	6	7	8	9
	Takes responsibility for actions; admits mistakes; puts patient needs above own interests; recognizes and addresses ethical dilemmas and conflicts of interest; maintains patient confidentiality								
Interpersonal & Communication Skills									
5. Relationship-building	1	2	3	4	5	6	7	8	9
	Establishes rapport with patients and their families; demonstrates care and concern; is respectful and considerate; provides reassurance; manages difficult patient/family situations								
6. Team interaction	1	2	3	4	5	6	7	8	9
	Demonstrates courtesy to and consideration of consultants, therapists, physicists, & other team members; provides timely updates; invites others to share their knowledge and opinions; negotiates & compromises when disagreements occur								
Overall rating of Professionalism and Interpersonal & Communication Skills	<u>UNSATISFACTORY</u>			<u>SATISFACTORY</u>			<u>SUPERIOR</u>		
	1	2	3	4	5	6	7	8	9

Please explain "not at all characteristic" ratings.

Evaluator Signature

Resident Signature

The resident and I discussed this evaluation and the resident's overall performance in the program, and ways to improve performance as needed.

Program Director Signature

Date

Appendix B:

ACGME Radiation Oncology Program Requirements

Appendix C:

Program and Departmental Forms

- 1. Elective Request Form**
- 2. Time Off Request Form – Resident**
- 3. Travel Request Form - Resident**



RADIATION ONCOLOGY RESIDENCY TRAINING PROGRAM

Elective Time Request Form

Resident's Name: _____ **Date:** _____

Dates of Elective: _____

Percentage of Time/Days (if not Mon-Fri): _____

Location of Elective: _____

Faculty Supervisor Name: _____

Site Contact Name: _____

Phone Number: _____

Email address: _____

Goals & Objectives:

Departmental Authorization Signatures

- Approved
- Denied

Residency Program Director Approval: _____ **Date:** _____

For Administrative Purposes Only:	Received Date	Returned or Sent Date	Completed Date
<i>Request Received/Returned to Resident</i>			
<i>Block Schedule/Clinic Calendar Posted</i>			
<i>GME Approval Received, if needed</i>			
<i>Malpractice Coverage Certificate</i>			
<i>Elective Evaluation – Faculty Supervisor</i>			
<i>Resident' Experience Evaluation</i>			
<i>Final Review/File</i>			

Use one form for each separate facility or department as needed.

Created and Edited By: Kathy Rose Version 3.042409

Radiation Oncology Resident Physician Time Off Request

Joe Bruin

Name

One Day Request Only

Friday, 12/31/9999

Day, Date

From 8:00 AM
PM Until 10:00 AM
PM

AND / OR

Multiple Days Request

Friday, 12/31/9999

Day, Date Beginning

Tuesday, 01/01/1900

Through Day, Date Ending

For a total of 1 working days or 4 Hours.

No conflicting schedule

Time Off Request is (check one):

- Vacation Hours
 Vac Balance:
- Sick Leave (Medical Appt)* Hours
- Other Leave of Absence* Hours

- Jury Duty
- Military Leave
- Family/Medical Leave

Time Available	Initials	Date
Y N		
<input type="checkbox"/> <input type="checkbox"/>	JB	12/31/99
<input type="checkbox"/> <input type="checkbox"/>		
HR Approval Required		<input style="width: 100%;" type="text"/>

*** Reason for Time Off Request**

- APPROVED**
- Calendar Posted _____
- Time Recorded _____
- CA Notice Sent _____
- Resident File CC _____
- Requestor CC _____

Requestor Signature Date

- DENIED**
- Reason:
- Requestor CC _____

Chief Resident Signature Date

Faculty Supervisor Signature Date

Residency Program Director Signature Date

Chair/CAO/HR Approval - Special Leave Date

Appendix D:

Required Reading and Book List

A copy of each of the required core curriculum textbooks (Clinical References, Radiation-Cancer Biology, and Radiation Physics) will be provided to each resident. We will try to provide you with the most current edition. If a newer edition is expected to be released soon, we may delay the purchase of this book. If a newer edition is released after the text has been purchased, it is the residents' responsibility to update their personal library if they wish.

The faculty have compiled a list of other references, which you may find of interest and useful in your learning. These items are not part of the required reading list, and copy is kept in the Resident's Library. Personal copies are the responsibility of the individual resident and are not provided by the program.

Clinical References:

- *AJCC Cancer Staging Manual*. Lippincott Williams and Wilkins, 2002 (6th edition)
- *Handbook of Evidence-based Radiation Oncology*. Springer, 2007

Radiation-Cancer Biology:

- *Radiobiology for the Radiologist*. Eric Hall. Publisher: Lippincott-Raven, Philadelphia, 2006 (6th edition)

Radiation Physics:

- *The Physics of Radiation Therapy*. Faiz Khan. Publisher: Williams and Wilkins. Baltimore, 2003 (3rd edition)

Other Recommended References:

- *Principles & Practice of Oncology*. Vincent DeVita Jr., Theodore Lawrence, Steve A. Rosenburg, et al. Lippincott Williams and Wilkins, 2008 (8th edition).
- *Principles & Practice of Radiation Oncology*. Carlos A. Perez, Luther W. Brady. Lippincott Williams and Wilkins, 2008 (5th edition)
- *Clinical Radiation Oncology*. Leonard Gunderson, Joel Tepper. Churchill Livingstone, 2000
- *Textbook Of Radiation Oncology*. Steven A. Leibel, Theodore L. Phillips, W.B. Saunders, 2004 (2nd edition)
- *Treatment Planning in Radiation Oncology*. Faiz Khan, Roger Potish. Publisher: Williams and Wilkins, Baltimore (2nd edition), 2000
- *Radiation Therapy Physics*. Hendee, 2004
- *Pediatric Radiation Oncology*. Edward C. Halperin, Louis S. Constine, Nancy J. Tarbell, Larry E. Kun. Lippincott Williams and Wilkins, 2004 (4th edition)