WELCOME TO
THE MOUNT SINAI SCHOOL OF MEDICINE
RESIDENCY PROGRAM
IN RADIATION ONCOLOGY

Core Program

Educational Mission

Academic Curriculum

Resident Research Projects

Travel to Conferences

Resources and Equipment

Medical Student Rotations

Leave, Coverage and Vacation Policy

Work-Hour Regulations

Application Process-FAQs

House Staff Policy and Procedures

Salary and Benefits

Alumni Information

Current Resident Bios

Core Program
The Department of Radiation Oncology offers a four-year ACGME accredited residency program for 6 trainees starting at the PGY-2 level. Our program is nationally recognized for excellence in brachytherapy and radiobiology and strongly emphasizes the importance of evidence-based medicine in oncology.

The core program consists of a four-year residency following successful completion of a PGY 1 year in either Preliminary Medicine, Preliminary Surgery or a Transitional Year. Our residents rotate primarily at the Department of Radiation Oncology at Mount Sinai Hospital and Medical Center in Manhattan, as well as affiliate institutions such as the Elmhurst Hospital Center in Flushing, NY and Queens Hospital Center in Jamaica, New York. In addition, a two- to three-month rotation in pediatric radiation oncology is completed at Memorial Sloan Kettering Cancer Center during the third year of the residency program.

A minimum of thirty-six months of the 48-month residency program must be spent in clinical rotations. The remaining 6 to 12 months will be used for elective time for rotations in related specialties, such as dosimetry, medical oncology, pathology, radiology, nuclear medicine and laboratory or clinical research.

Under the guidance of the attending staff, residents learn to evaluate patients for radiation therapy. Emphasis is placed on obtaining pertinent information from the history and physical, review of diagnostic and pathologic information, and presentation of the case to the faculty radiation oncologist. Principles of treatment planning and the technical aspects of patient simulation are reviewed with the attending. Patients’ weekly on-treatment visits expose the resident to the acute effects of treatment and their subsequent management. Participation in the follow-up clinics allows the resident to see the late effects of treatment and the management of complications and recurrences.

Educational Mission

The overall goal of the Mount Sinai Radiation Oncology residency program is to educate and train physicians in the skillful practice of radiation oncology and to be caring and compassionate in the treatment of patients. During the course of the 4-year program, residents spend a minimum of 36 months engaged in a series of 3-month clinical radiation oncology rotations under the guidance of clinical radiation oncology attending preceptors. The goals and objectives for each clinical rotation are outlined below. In addition, the residents attend and participate in clinical conferences and didactic lectures on a daily basis throughout the four years of training. Through these clinical rotations and
conferences/lectures, the residents master the skills and acquire the knowledge necessary to treat all forms of cancer, as well as benign disease, for which radiation plays a role in treatment. Through lectures and laboratory research in radiation and cancer biology, the residents obtain an in-depth understanding of the biologic basis of radiotherapy and potential biologic approaches to improve the clinical outcome. Through the lectures and a required rotation in physics, the residents learn both the fundamental principles and practical aspects of treatment planning. The residents receive exposure to both medical oncology and diagnostic radiology through required rotations in these two areas as well as during clinical conferences. Residents are also required to perform either a laboratory or clinical research project in sufficient depth that the results of their work are presented at a national scientific meeting and published in a major journal. An important goal of the residency program is to foster an atmosphere of intellectual curiosity with highly informed dialogue where the faculty begin to serve as peer mentors to the residents.

As they progress through the program, all residents are also expected to master the material in specific landmark papers/trials and specialty textbooks pertaining to each clinical tumor site as well as the pertinent chapters in the major radiation oncology textbooks including, Cox et al., Moss’ Radiation Oncology, Gunderson & Tepper’s Radiation Oncology, Leibel’s Textbook of Radiation Oncology, and Perez et al. Principles and Practice of Radiation Oncology in addition to the Devita et al. Cancer: Principles and Practice of Oncology.

In addition to developing expertise in patient care and acquiring medical knowledge, it is the goal of the Mount Sinai program to train residents in the four additional general competencies of practice-based learning & improvement, interpersonal & communication skills, professionalism and systems-based practice. In addition to the clinical rotations, an important forum in which these competencies are discussed and taught is through the bi-monthly ethics conference we have instituted. The residents are assessed in these competencies through the 360-degree evaluations, which are performed for each resident every 3 months. All residents are expected to learn how to analyze practice performance and carry out needed improvements, locate and apply scientific evidence to the care of patients, critically appraise the scientific literature, use the computer to support learning and patient care and facilitate the learning of other health care professionals. Residents are expected to develop a therapeutic relationship with patients and their families, use verbal and non-verbal skills to communicate effectively with patients and their families and work effectively as a team member or leader. During the entire course of training, each resident must demonstrate integrity and honesty, accept responsibility, act in the best interest of the patient and demonstrate sensitivity to patients' ethnicity, age, and disabilities. In addition, all residents become aware of the interdependencies in the health care system that affect quality of care, provide cost-effective care, advocate for quality patient care, work with hospital management and learn to be part of an interdisciplinary team to improve patient care.
Academic Curriculum

The academic curriculum is comprised of the following activities:

New Patient Conference- This conference generally takes place once a week at 8 a.m., led on a rotating basis by an attending radiation oncologist. The topics are generally chosen in accordance with the monthly site of study and are coordinated by the Chief Resident with the attending. The resident may be asked by the Chief Resident to present a case and should obtain the patient chart and all pertinent films prior to the conference. Review of the incidence, epidemiology, risk factors, prognostic factors, anatomy, staging, work-up, treatment, and literature supporting these treatments for the particular disease is recommended prior to the conference. The senior residents provide guidance regarding the reading list and relevant articles.

Didactic Lectures- These lectures provide the multidisciplinary aspect of oncologic training, and are given on a regular basis by the attendings from Medical Oncology, Surgery, Radiology and Pathology. Usually, the topics are coordinated by the Chief Resident and are relevant to the topic of study during that particular month.

Radiation Oncology Grand Rounds- The residents are invited by Memorial Sloan-Kettering Cancer Center Department of Radiation Oncology to attend their weekly Grand Rounds, which are held at 4 pm on Wednesday afternoons. Residents may obtain permission from their attendings for release from their clinical activities to attend these lectures on a weekly basis on Wednesday afternoons.

Radiation/Cancer Biology Course- Given annually once a week on Wednesdays throughout the year by Dr. Barry Rosenstein. The radiation oncology residents from MSKCC and NYU also attend this course, which is taught at Mount Sinai. Course materials are provided, and examinations take place four times a year.
Physics Course– Held each Thursday at Memorial Sloan-Kettering Cancer Center with their radiation oncology residents in attendance. The course is taught by Dr. Jerome Meli, a senior physicist at MSKCC. Mid-term and final examinations are offered.

Statistics Course- Given at NYU on an annual basis in the spring, over a period of 2 months.

Resident Rounds- Held approximately once a month, the Chief Resident suggests a mini-topic (example: Sentinel Node Biopsy in the Management of Early Stage Breast Cancer), which the resident researches and presents to his/her colleagues. The topics will coordinate with the site of study that month.

Journal Club- This conference takes place once a month and is led on a rotating basis by an attending radiation oncologist. All articles are distributed ahead of time for review. During the Journal Club, critique of the study methodology and discussion of their impact on patient management is emphasized.

Morbidity & Mortality Conference- Held approximately once every two months. The assigned resident prepares a comprehensive review of the anatomy (including cellular), physiology and acute and long term effects on normal tissues due to radiation of the particular site, as well as management of these effects.

Ethics Conference- Led once every 3 months by Dr. Barry Rosenstein providing an opportunity to discuss the ethical dilemmas and solutions of common scientific and medical issues encountered in the workplace.

Multidisciplinary Oncology Tumor Board- Weekly multi-disciplinary meetings with faculty from the medical oncology, surgical oncology, pathology and radiology departments. On a rotating basis, each department presents a case and an evidence-based presentation regarding treatment options is given by the presenting resident.

Other Tumor Boards- Tumor Boards in Neuro-oncology, Thoracic, Breast, ENT and G.I. Oncology are attended by the resident, depending on the sites treated by their attending on a particular service.
Resident Research Projects

A required resident research project is academically supported by the faculty. Both clinical and basic science research opportunities are available. Current areas of research include genetics of clinical radiosensitivity response, prostate cancer, head and neck cancer and breast cancer.

Presentation of resident research at regional and national scientific meetings in the form of an oral presentation or poster is encouraged within the scope of their discipline. A maximum of 8 days a year for travel to conferences is allowed for residents who are presenting their work.

Examples of current/ongoing resident projects:

Lo, K et al. Salvage Prostate Brachytherapy Following Radiotherapy Failures. Accepted to ASTRO 2005.
Peters, C. et al. Prostate Brachytherapy in Patients with Inflammatory Bowel Disease. Accepted to ASTRO 2005.
Ho, A. et al. ATM sequence variants as predictors for the late normal tissue responses in breast cancer patients treated with radiotherapy. Accepted to ASTRO 2005.


Travel to Conferences
Travel to one major scientific conference is provided for each senior resident during their fourth year up to a maximum of $1200 in expenses. Financial support may include registration, hotel, airfare and food.

Resources and Equipment
The Department of Radiation Oncology at Mount Sinai employs four full-time clinical attending faculty, two part-time voluntary faculty, six residents, two full-time registered nurses, four full-time physicists, seven full-time radiation therapists, two full-time database managers and several administrative and ancillary staff. The department also supports the educational training of radiation therapy students by participating as clinical instructors for The Manhattan College Program In Radiation Therapy. One to two radiation therapy students may be rotating through the department at any given time.

Each resident is provided with a desktop computer for use during the four-year residency period in the resident offices with access to files and software via the departmental intranet and Internet. Residents will be provided with instruction in the use of Impac (patient information and physician/departmental scheduling program), EDR (Enterprise Data Repository, the Mount Sinai electronic medical record), and PACS (Picture Archiving and Communications System, the digital filmless radiology computer system) software during new resident orientation.

Selected reference materials are maintained within the resident office, which includes a set of texts on general oncology, radiation oncology, radiation physics and radiobiology. Staff files, journals and texts are also generally available for resident use. The Gustave L. and Janet W. Levy Library on the 11th floor of the Annenburg Building is accessible to residents. The Levy Library maintains an extensive on-line journal and book collection, which can be accessed over the Internet.

The department treats an average of 70 patients per day on two Varian linear accelerators (21EX and 600C) equipped with Varian Amorphous-Si Portal Imagers and Impac’s R/V system. Treatment energies include 6 and 16 MV photons and 6, 9, 12, 16, and 20 MeV electrons. A dedicated stereotactic radiosurgery system, BrainLab Novalis, provides image-guided radiation therapy (IGRT) capability for all sites. The department has an active prostate seed implant program using Varian’s VariSeed RTP system. Nucletron High-Dose Rate (HDR) remote afterloader is being used for gynecologic, breast and lung malignancies.

The department utilizes a nearly filmless environment with Kodak CR and Varian portal imaging systems. External beam/intensity-modulated radiation therapy (IMRT) planning is performed with Varian’s Eclipse system, and MapCheck is used for plan verification. BrainScan treatment planning system is used for stereotactic radiosurgery (SRS), fractionated stereotactic radiation therapy (SRT), and IGRT. A dedicated Philips AcQSim 85 cm CT simulator is used for treatment planning simulation and for post-
implant dosimetry calculation. CT/MR and CT/PET fusion are often performed for more accurate target delineation. IMRT planning with dynamic multileaf collimation (MLC) is often performed for prostate, head and neck, breast and abdominal cases.

The department is also very active in special procedures such as intracranial radiosurgery, total body irradiation (TBI), HDR and low-dose rate (LDR) brachytherapy. New technologies such as respiratory gating and extracranial radiosurgery are actively under development. The research laboratories include core facilities for special biophysical, molecular biological and immunological techniques, and are housed primarily in the Annenberg and East Buildings, nearby the department of Radiation Oncology.

Mount Sinai’s Novalis Shaped Beam Surgery system

Medical Student Rotations

Third and fourth year medical students are accepted for elective rotations in our department and may be scheduled by calling (212) 241-7502. Rotation lengths can vary between 3 to 4 weeks. A maximum of two medical students per rotation will be accepted. At the end of their rotation, the medical student will provide an oral presentation on a topic of their choice, with guidance from the senior residents and attending staff. Depending on their preference, medical students may also pursue research topics through our department.

Salary and Benefits

Salary for 2005-2006 PGY-2 house staff at Mount Sinai was $46,515. Benefits information is available online at Mount Sinai Benefits Homepage.
Leave, Coverage and Vacation Policy

In keeping with the requirements of the American Board of Radiology training requirement, twenty workdays of leave (including vacation, sick and maternity leave) are authorized during each year of residency. Typically, the maximum amount of leave taken during any single 3-month rotation should not exceed 5 working days. Prior to taking vacation, coverage by a fellow resident must be arranged in advance. A minimum of two residents must be present in the Department at any one time.

Once a week, each resident is responsible for staying in the Department until the last patient is treated (usually between 5 to 7 p.m.). Call is taken from home in one-week blocks, approximately 8-9 times a year. During call, the resident is responsible for any inpatient consultations or treatment of emergencies. Treatment times during call are from 5-9 p.m. on weekdays and 9 a.m.-5 p.m. on weekends. New residents are on-call with a senior resident during the first 2-months of their training.

Work-Hour Regulations

In compliance with the ACGME regulations that govern resident work hours, time spent in the clinic/hospital performing patient care counts towards the 80-hour/week maximum. An estimate of the average time worked weekly on-site by the Radiation Oncology residents at Mount Sinai has been 45-55 hours.

Application Process-Frequently Asked Questions

1. How many positions are available each year?
A. The program accepts two new residents (PGY-2 level) each year, for a total of six residents in the program. However, every fourth year, we do not accept applications. There will be no incoming residents for the 2006-2007 academic year. We are currently accepting applications for the 2007-2008 academic year. Applications should be submitted through ERAS.

2. Does the Radiation Oncology program offer a preliminary year?
A: No. Residents must apply independently for the PGY-1 year. Preliminary medicine and surgery internship programs are available at Mount Sinai Hospital, offered through the respective departments.

3. What are the application deadlines?

A: Applications will not be accepted after October 31st. All supporting documents with the exception of the Dean’s Letter must be received by this date.

4. How many letters of recommendation are needed?
A: Three letters in support of each applicant.

5. Are there any cutoffs for USLME scores?
A: No.

6. What percentage of applicants are offered an interview?
A: Out of ----182 applications received in 2004, we offered interviews to ---23 candidates.

7. When will interviews be offered?
A: We will conduct interviews from November through February.

8. What will the interview day be like?
A: Interviewees should plan to spend between 8 a.m. to 3:00 p.m. in the department. A list of hotels in the area will be provided with the invitation letter. A lunch will also be provided and will serve as an opportunity to meet with current residents. All applicants will meet with Dr. Richard Stock (Department Chairman and Program Director), Dr. Barry Rosenstein (Associate Program Director and Radiation/Cancer Biology Course Instructor), the rest of the faculty attending staff, and a member of the physics staff. Tours of the department and hospital are given by a resident. Both junior and senior residents will be available for informal discussions throughout the day.

9. How can I obtain information about residency contracts, benefits, etc?
A: House staff information and policies are available from the Graduate Medical Education website at: --------------Mount Sinai School of Medicine House Staff Manual Housestaff Policy & Procedures Mount Sinai School of Medicine House Staff Manual
Alumni Information
Recent Graduates:

2005
Michael Smith M.D. – Foxboro, MA
Karen Loeb-Borofsky M.D. – St. Barnabas Health Care System, NJ

2004
Jamie Cesaretti M.D. – Associate Professor, Mount Sinai School of Medicine, New York, NY
Marisa Kollmeir M.D. – Memorial Sloan-Kettering at Mercy Medical Center, Rockville Center, NY

2003
Berna Roig M.D. – Alta Bates Comprehensive Cancer Center, Berkley, CA
Manoj Jain, M.D.

2001
Deborah Fang, M.D. – Southport Medical Center, CT
Christopher M. Iannuzzi, M.D. – Southport Medical Center, CT
Lucille Lee, M.D. – Memorial Sloan-Kettering at Mercy Medical Center; Rockville Centre, NY

2000
Mike Anderson, M.D. – 21st Century Oncology, Las Vegas, NV
Other Graduates:

Sheryl Green, M.B.B.S. – Associate Professor, Mount Sinai School of Medicine, New York, NY

Debra Linzer, M.D. – Coral Springs, FL

Allison Sacher, M.D. – Newark, NJ

Edward J. Kaplan, M.D. – Cleveland Clinic Florida, Weston, FL

Jigna Desai Jhaveri, M.D. – Long Island Radiation Therapy, Manhasset, NY

Mitchell Terk, M.D. – Florida Cancer Center -- Wells Complex Clinic, Jacksonville, FL

Paul Kocheril, M.D. – Saginaw Radiation Oncology Center, Saginaw, MI

Tapan Roy, M.D. – Saint Francis Medical Center, Cape Girardeau, MO

V. Rao Emandi, M.D. – Cancer Care Centers of Florida, Hudson, FL

Muhammad Z. Iqbal, M.D. – Auburn Memorial Hospital, Auburn, NY

Sunjay Shah, M.D. – Christiana Hospital - Newark, DE

Daniel Chin, M.D. – Rocky Mountain Cancer Center – Denver, CO

Current Residents

Ryan Burri, M.D., email: ryan.burri@mountsinai.org

Grace Fan, M.D., email: grace.fan@mountsinai.org

Alice Ho, M.D., email: alice.ho@mountsinai.org

Kathy Lo, M.D., email: kathy.lo@mountsinai.org

Christopher Peters, M.D., email: christopher.peters@mountsinai.org
Amy Solan, M.D., email: amy.solan@mountsinai.org

Program Director and Department Chair – Richard G. Stock, M.D., email: Richard.stock@mountsinai.org

Associate Program Director – Barry Rosenstein, Ph.D., barry.rosenstein@mssm.edu

Back to Top