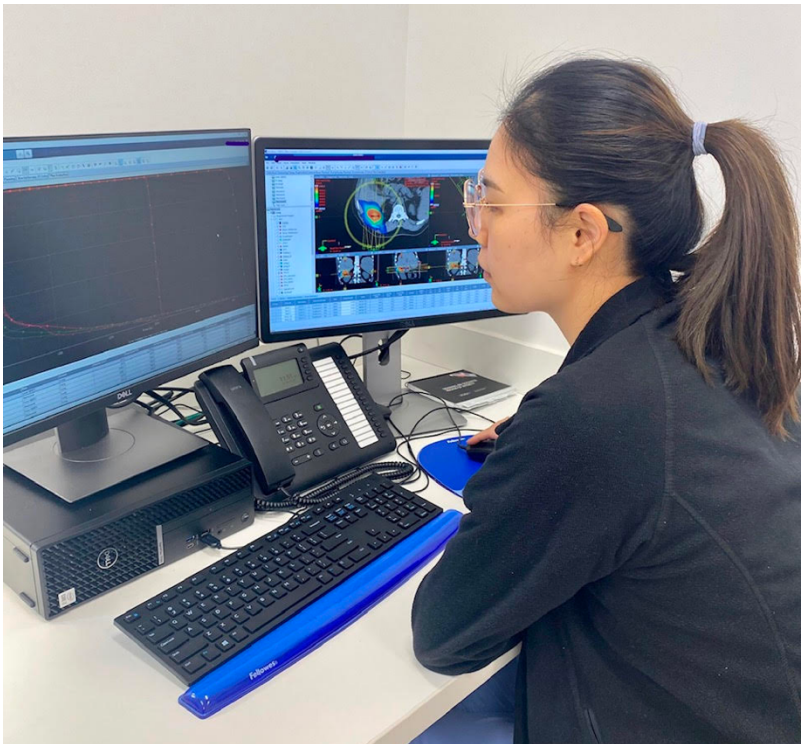
Medical Dosimetry
Clinical Non-Credit, Non-Degree Certificate Program Student Handbook
2023 – 2024



Mount Sinai Center for Radiation Science Education

In collaboration with
The School of Health Profession's Health Science major

Revised May 30, 2023

Mount Sinai

Stony Brook Medicine

Table of Contents

Greetings from the Program Director

On behalf of the Mount Sinai Center for Radiation Sciences Education at Stony Brook University, I welcome you as our students! We join you in anticipation of a rewarding educational experience at our institution as you prepare for careers as medical dosimetrists.

We at Mount Sinai are committed to providing compassionate, competent patient care in addition to an exciting and healthy environment for all students in the classroom, and throughout our clinical locations.

The field of radiation oncology is dynamic and incredibly rewarding. We are thrilled to watch you learn and grow under our guidance.

Again, welcome to the team and best wishes for a productive year.

Vishruta Dumane, PhD
Medical Dosimetry Program Director

About the Program

About the Mount Sinai Health System

The Mount Sinai Health System is an integrated health care system providing exceptional medical care to our local and global communities. Encompassing the Icahn School of Medicine at Mount Sinai and seven hospital campuses in the New York metropolitan area, as well as a large, regional ambulatory footprint, Mount Sinai is acclaimed internationally for its excellence in research, patient care, and education across a range of specialties. The Mount Sinai Health System was created from the combination of The Mount Sinai Medical Center and Continuum Health Partners, which both agreed unanimously to combine the two entities in July 2013.

Mount Sinai Mission

The mission of the Mount Sinai Health System is to provide compassionate patient care with seamless coordination and to advance medicine through unrivaled education, research, and outreach in the many diverse communities we serve.

Mount Sinai Vision

The Mount Sinai Health System's vision is to continue to grow and challenge convention through our pioneering spirit, scientific advancements, forward-thinking leadership, and collaborative approach to providing exceptional patient care in the many unique communities we serve.

The Mount Sinai Center for Radiation Sciences Education at Stony Brook University Mission Statement

The mission of the Medical Dosimetry Program is to optimize the knowledge, attitudes and skills of our students by preparing them to meet the daily challenges of a Medical Dosimetrist in the dynamic field of Radiation Oncology. Through clinical work and didactic lessons, students will hone the skills that are required to serve our patients in the community while maintaining ethical standards and professionalism in and out of the clinic. They will become an integral part of the health care team in the battle against cancer and leaders in providing the highest level of patient care.

Stony Brook School of Health Professions

https://healthprofessions.stonybrookmedicine.edu/

Program Accreditation

The Mount Sinai Center for Radiation Sciences Education at Stony Brook University – Medical Dosimetry Program maintains accreditation through Middle States Commission on Higher Education and has applied for initial accreditation by the Joint Review Committee on Education in Radiologic Technology (JRCERT). The JRCERT is the only agency recognized by the United States Department of Education and the Council on Higher Education Accreditation for the accreditation of traditional and distance delivery educational programs in radiography, radiation therapy, magnetic resonance, and medical

dosimetry. The JRCERT awards accreditation to programs demonstrating substantial compliance with the standards found in appendix 16.

Medical Dosimetry Program Curriculum:

Stony Brook Health Science Major Education:

- Stony Brook Health Science Major Education:
- Human Anatomy and Physiology for Health Science I & II
- Research Methods in Health Science
- Human Anatomy, Health and Medical Language
- Health Care Issues
- Communication Skills
- Professional Ethics
- Health Care Informatics
- Scholarly Writing in Health Science
- Radiation Physics in Medicine
- Intro to Treatment Planning
- Radiobiology and Health Physics
- Radiographic Anatomy and Pathology
- Radiation Oncology/Medical Physics II
- Introduction to Pathology

Clinical Year Education:

Orientation to Medical Dosimetry

Mini-courses:

- Radiation Oncology
- Simulation
- Clinical Anatomy
- Brachytherapy
- Radiation Safety and Protections
- Treatment Planning
- Professionalism
- Physics/QA
- Communications
- Board Review

Specialty-Rotations:

- Physician rotation
- Radiation Therapy Rotation
- New York Proton Center rotation

Program Goals & Student Learning Outcomes

Goal 1: Students will demonstrate clinical competence of an entry-level medical dosimetrist

Student Learning Outcomes:

1. Students will complete treatment planning as prescribed by a radiation oncologist.
2. Students will demonstrate basic knowledge and understanding relative to each site-specific planning.

Goal 2: Students will possess critical thinking skills

Student Learning Outcomes:

1. Students will adequately respond to challenges faced during treatment planning.
2. Students will show the ability to perform multiple tasks in a timely manner

Goal 3: Students will practice with professional values

Student Learning Outcomes:

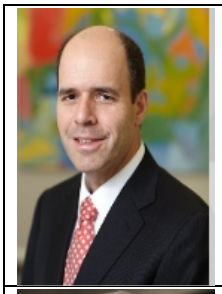
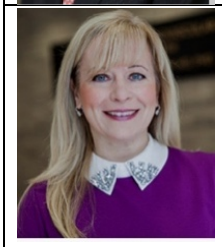
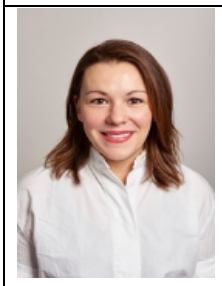
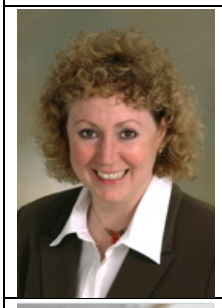
1. Students will display professional conduct
2. Students demonstrate life-long learning

Goal 4: Students will display effective communication skills

Student Learning Outcomes:

1. Students will demonstrate written communication skills
2. Students will demonstrate oral communication skills

Clinical Year Faculty & Leadership

	**Kenneth Rosenzweig, MD**	Mount Sinai Radiation Oncology Professor and Chair
	**Kimberly Smith, MS**	Mount Sinai Radiation Oncology Vice Chair, Administration
	**Samantha Skubish, MS, RT(R)(T)**	Mount Sinai Radiation Oncology Chief Technical Director
	**Deborah Zelizer, PhD, LCSW**	Stony Brook University SHP Chair Deborah.zelizer@stonybrook.edu Office: (631) – 444 - 6158
	**Maria Dimopoulos, PhD, MBA, RT(T)**	Mount Sinai Center for Radiation Sciences Education Associate Director, Radiation Therapy Program Director Maria.dimopoulos@mountsinai.org Cell: (646) 951 - 7969
	**Vishruta Dumane, PhD, DABR**	Mount Sinai Center for Radiation Sciences Education Medical Dosimetry Program Director Vishruta.dumane@mountsinai.org Office: (212) 241 - 5118

	**Victoria Olsen, BS, CMD**	Mount Sinai Center for Radiation Sciences Education Medical Dosimetry Assistant Program Director victoria.olsen@mountsinai.org Cell: (917) 846 - 2631

Clinical Locations & Departmental Supervisors

The Medical Dosimetry Program has a meaningful clinical education plan that assures each student is provided with a meaningful and equitable educational experience and that each student is able to complete all required competencies during their tenure in the Dosimetry clinical non-credit, non-degree certificate program (second year of the program). This is achieved by requiring all students to complete a clinical rotation at each clinical treatment campus where students are exposed to a wide range of planning techniques.

All clinical rotations are conducted across the Mount Sinai Health System. The Mount Sinai Health System is one of the largest health systems within the region, as such, the department is able to provide students with a wide range of procedures to achieve competency requirements put forth by JRCERT. Mount Sinai Radiation Oncology includes 3 clinical treatment locations; in combination there are 11 treatment machines, 5 simulators and brachytherapy offered at each location. Students are to report to the clinical dosimetry preceptor of each Mount Sinai Radiation Oncology location. Students gain hands on learning with various therapeutic and planning technologies including but not limited to: SRS, SBRT, TBI, CSI, IMRT, 4DCT, Fluro, DIBH, gating, compression, alignrt, exactrac and CBCT. To ensure equity in the educational experience all students are required to rotate through each treatment location to gain the required clinical experience with all specialty procedures. Additionally, Mount Sinai is a partner in the New York Proton Center. As such, Medical Dosimetry students also complete an observational rotation in proton planning. A map of all clinical year locations can be found in Appendix 12.

Mount Sinai Hospital

Mount Sinai Hospital – 1184 Building
Address: 1184 5th Ave (1184 Building MC Level), New York, NY 10029
Clinical Preceptor: Alan Yu | 212-241-4968 | alan.yu@mountsinai.org

Mount Sinai Hospital – Hess Building
Address: 1470 Madison Ave (Hess Building SC Level), New York, NY 10029
Clinical Preceptor: Alan Yu | 212-241-4968 | alan.yu@mountsinai.org

Mount Sinai West

Mount Sinai West
Address: 1000 10th Ave (Main elevators to LL), New York, NY 10019
Clinical Preceptor: Ching-ling Teng | (212)-523-5330 |
Ching-ling.Teng@mountsinai.org

Mount Sinai Downtown

Mount Sinai Downtown - Union Square
Address: 10 Union Square East (SC Level), New York, NY 10003
Clinical Preceptor: Si Ning Chen | (212) 244-6249 | siningchen@mountsinai.org

Mount Sinai Downtown - The Blavatnik Family – Chelsea Medical Center at Mount Sinai
Address: 325 W 15th Street, New York, NY 10011
Clinical Preceptor: Si Ning Chen | (212) 244-6249 | siningchen@mountsinai.org

Mount Sinai Astoria Radiation Oncology

Mount Sinai Astoria
Address: 23-22 30th Avenue Astoria, NY 11102
Clinical Preceptor: Spiro Kartsonis | (718) 267-2763 | Spiro.Kartsonis@mountsinai.org

New York Proton Center

New York Proton Center
Address: 225 East 126th Street, New York, NY, 10035
Clinical Preceptor: Andy Shim | (646) 968-9034 | ashim@nyproton.com

MOUNT SINAI RESOURCES

Recreation Office

The Recreation Office offers a wide range of discounts to promote work/life balance and the enjoyment of many of New York City's cultural events. The office provides discounted tickets, promotions, and services that include Broadway and Off-Broadway shows, movies, sporting events, amusement parks, restaurants, health clubs and spas, hotels, cell phone service, car rentals.
All discounts require a valid Mount Sinai Health System ID.

19 East 98 Street, Room 2F
212-241-6660
Recreation.mountsinaihealth.org

Bookstore

At the Posman Collegiate Bookstore, students can order popular books, purchase supplies, food and gifts. The Bookstore is located on the ground floor of the Annenberg Building.

Library

Students have access to the Icahn School of Medicine library at Annenberg 11 with their Mount Sinai student ID. Library hours and details can be found at:
https://icahn.mssm.edu/about/ait/levy-library

TUITION/REFUND POLICY

Tuition will be charged at the rate of $7,500 for the clinical year plus applicable university fees (university fees can be found at: www.stonybrook.edu/commcms/sfs/tuition/certificate-program). This annual tuition will be collected by the Program before the initial meeting of the program. The tuition fee shall be made payable to the School of Health Profession's. A student shall not be permitted to attend classes or clinical education beyond the posted tuition deadline dates without receipt of tuition and insurance payment or approved payment voucher.

Refund of Tuition:
Students who withdraw from the Medical Dosimetry clinical non-credit, non-degree certificate year of the program are liable for payment of tuition in accordance with the following schedule:

Withdrawal during	**Liability**
First week	0%
Second week	30%
Third week	50%
Fourth week	70%
Fifth week	100%

Orientation will be held on the first day of the program. Absence from classes does not constitute an official withdrawal and does not relieve the student of their financial obligation, nor entitle the student to a refund. Students must officially request to withdraw, in writing, to the Dean's Office.

Students will be responsible for other fees incurred during the duration of the program. Such fees included but are not limited to:

- Professional liability insurance $39
- Health clearance and toxicology screening as required by clinical sites via Castle Branch $78

Health Insurance (required): Students can purchase the university plan or show proof of private insurance

Other Program and Professional Estimated Required Expenses*	
Textbook	$100.00
Laptop	$750.00
Castle Branch screening and compliance platform - general access**	$43.00
Castle Branch screening and compliance platform – toxicology screening**	$35.00
Professional liability insurance	$39.00
National Professional Society Student Membership (AAMD)	$80.00
Registration fee for national exam (MDCB exam)	$575.00

Note: * there will be transportation expenses to clinical rotation sites; **these prices have been negotiated and discounted with Castle Branch.

CLINICAL EDUCATION HOURS

Students enrolled in the Medical Dosimetry Program must complete a minimum of **235 days (1,645 hours)** of supervised clinical education and all clinical evaluations of students must be a minimal **pass/satisfactory** to qualify for graduation.

- **Assignments to all Mount Sinai clinical education centers:**

  NO STUDENT WILL BE PERMITTED TO ENTER THE CLINICAL SETTING OR ATTEND ORIENTATION WITHOUT A COMPLETED HEALTH FORM AND THE REQUIRED IMMUNIZATIONS AND HEALTH AND LIABILITY INSURANCE.

One-Year Clinical Education Session

- Orientation is mandatory and begins the start of clinical year.
- Each student will be assigned to a clinical education center five days a week (Monday through Friday) 9 a.m. To 5 p.m. Clinical hours may vary according to site, e.g., 7:00 a.m. – 3:00 p.m. With one-hour lunch breaks at the discretion of the instructor(s) for the duration of the clinical rotation.
- Mini Courses will be scheduled throughout the year, taking place Wednesday or Friday mornings across Mount Sinai locations – schedule to be determined.
- On a case by case basis, the program director may make a recommendation to the Dean of SHP to extend the length of the program for students who need time off for extended illness, family sick leave, or personal leave may be approved to extend their clinical training session no later than June 28th of the final semester.
    - To request a leave of absence from the program for personal or medical reasons, students must follow the policies and procedures outlined in the SHP handbook.
    - Each student will be assigned to a clinical education session five, eight-hour days per week (9:00 a.m. – 5:00 p.m.) For the remainder of the time necessary to complete the minimum 235 days (1,645 hours) and must accompany satisfactory and timely evaluations of ***all*** required clinical and behavioral objectives. Only then, will the student be reviewed to determine if they are qualified to graduate.

ACADEMIC CALENDAR, ATTENDANCE AND PUNCTUALITY

The Mount Sinai Center for Radiation Sciences Education at Stony Brook University is a two-year, full-time program that begins during the fall semester of the senior year at Stony Brook University in the Health Science major and continues through a 12-month clinical non-credit, non-degree certificate program at Mount Sinai Health System. The clinical certificate program starts in June and is completed the following June. Clinical certificate program's didactic mini-courses are held on Wednesday or Friday mornings. Students are assigned to clinical rotations at various Mount Sinai Health System locations the remainder M-F, 9am-5pm.

The presence of students in the clinical facility must in no way alter the routine work schedule of the department, or inconvenience patients, or staff. Therefore, **dependability** and **punctuality** are essential. Students shall not be deemed as employees of Mount Sinai for any purpose, meaning this is an educational experience and as such, students must comply with the policies and procedures put forth in this handbook. Any attempt to alter or falsify an attendance record shall be considered to be unethical and unprofessional conduct and shall be grounds for dismissal from the program.

1. **Attendance**
   a. Each student will receive a clinical schedule. Students are allowed in the patient treatment area ***only*** on their assigned days.
   b. Each student is responsible for signing in and out daily using the Trajecsys system. **Failure to do so will result in lost time**.
   c. No student will be allowed to have clinical assignments on hospital holidays, weekends, evenings, or nights.
   d. Students are not allowed to earn more than 40 hours of clinical time in one week.
   e. Only full eight-hour days are given credit, unless previously authorized by the program director.

2. **Absence & Time Off – Clinical Year:**
   a. In case of absence due to illness, the student must notify the program director and clinical supervisor by email at least one hour prior to the start of the clinic's work day.
   b. Mount Sinai Radiation Oncology Departments are closed on the following days: New Year's Day, MLK, President's Day, Memorial Day, Juneteenth, Independence Day, Labor Day, Thanksgiving, and Christmas. As such, students are excused from clinic.
   c. Each student will be entitled to 5 personal days to be used for reasons of religious observance, vacation, minor illness, family needs, etc. Students **must** notify the program director and department supervisor at least **48 hours prior**, unless due to illness.
   d. Students receive a winter vacation that generally begins on December 24th and extends through New Year's Day, January 1st. For exact dates please see the RTT Student Google Calendar.
   e. An excess of **three days** absence in any one semester, without prior documentation stating the reason for the absence(s), will be sufficient reason to have the student's participation in the program reviewed for possible probation.
   f. Students will not absent themselves from their clinical schedule for the purpose of studying for examinations.

g. Students may be permitted 2 days of bereavement leave (with appropriate documentation). Students must notify the program director at least 24 hours prior to their absence.

h. Time missed due to inclement weather may need to be made up. This will be at the discretion of the program director.

i. Students should expect that they may be called for jury duty. Because jury duty is a civic responsibility, the Mount Sinai Center for Radiation Sciences Education at Stony Brook University will not ask that students be excused from jury duty. However, if the student's absence from the program will create a hardship or jeopardize the student's academic work, the student may wish to seek a deferral through the appropriate judicial district.

3. **Punctuality**

a. Each student is required to enter the clinical area at the assigned time.

b. Each student is required to report immediately to their assigned area.

c. A student who enters the clinic late ***may be sent home*** at the discretion of the clinical supervisor.

d. Students may not work through lunch hours in order to leave the clinic early, except in extraordinary circumstances. This must be approved by the clinical supervisor and program director.

e. A student who fails to return on time from break or lunch hour may be sent home at the discretion of the clinical supervisor and not be credited with time for that day.

f. A student must contact their clinical supervisor and program director if they expect to be arriving late for ANY reason. They must clock-in accurately and it will be recorded as a lateness.

g. A student with 5 lateness within a semester will be given a WARNING. A subsequent lateness will be grounds for the program director, to recommend to the Dean of SHP in writing, (within five working days) that the student be placed on probation.

4. **Make-Up Time**

The fulfillment of the minimum required 235 days of supervised clinical education time is the ***student's*** responsibility. Failure to complete the required number of days within the allotted time period may result in a **failure to graduate**. Therefore, the student is required to make up promptly any days missed.

a. Any necessary absence from the clinic will be made up at the first available time with the approval of the program director.

b. Any time owed, prior to the end of each semester, must be made up prior to credit being given for the start of the following semester.

c. Any time owed must be made up prior to June 28th of the final semester of clinical education

CLINICAL APPEARANCE, DRESS CODE & REQUIRED ACCESSORIES

Dress Code and Professional Appearance

- Medical dosimetry students must wear business attire during clinical internships.
- All students must wear closed-toe shoes.
- Clothes and shoes must be clean and in good repair.
- Hair must be pulled back in a neat fashion.
- Beards and mustaches must be neatly trimmed (religious custom is the only exception).
- Excessive jewelry and excessive use of cosmetics, colognes/perfumes are inappropriate in the clinic.
- Long fingernails pose a health and hygiene hazard and are considered inappropriate and not tolerated. Chipped nail polish is unacceptable.
- Careful attention must be paid to personal hygiene when attending clinic.
- Failure to dress properly may result in being sent home at the discretion of the clinical supervisor or program director. No clinic hours will be credited.

Required Accessories

- A name tag that includes the name of the institution must be worn. It must contain the word "student."
- Radiation badges must be worn above the waist on same side as name tag.

Personnel Radiation Monitoring:

- Students are to follow Mount Sinai's Personal Exposure Monitoring Policy (appendix 1). Radiation dosimetry badges are to be monitored by Radiation Safety staff and appropriate follow-up actions taken as may be indicated by the results.
- Dosimeters will be given to students at the start of each clinical rotation. Each student is responsible for exchanging the radiation dosimeter(s) on the designated day of each rotation. Radiation dosimeters are exchanged with the clinical preceptor.
- Monthly radiation exposures for students must not exceed the maximum permissible dosage to occupationally exposed persons as established by state and federal agencies for radiologic health.
- Radiation exposure reports are posted in private spaces in each Mount Sinai Radiation Oncology department and are made available to students immediately following receipt of data, at minimum once per quarter. Student date of birth and/or social security numbers are <u>not</u> included on radiation exposure reports.

Students are responsible for:

- Wearing the dosimeter while on duty in those areas where there is a potential for radiation exposure.
- Exchanging worn dosimeters for new ones on the first workday of each wear period (e.g., first day of month or calendar quarter, depending on assigned wear period), unless the new replacement dosimeters' arrival has been delayed, in which case the exchange may be made as soon as possible after the arrival of the new dosimeters).

- Taking proper care of dosimeters, as described by Office of Radiation Safety instructions, to avoid damaging or contaminating the dosimeters.
- Not storing dosimeters near radiation sources when not being worn.
- Not wearing dosimeters when being exposed to radiation sources for personal medical purposes (The wearer should notify Radiation Safety if this inadvertently occurs or if administered a radiopharmaceutical).
- Notifying Radiation Safety immediately whenever dosimeters are lost, accidentally damaged, name change is required, place of work has changed, or any reason why accidental exposure may have occurred (i.e., dosimeter accidentally left near source when not worn).
- Returning all dosimeters and holders upon termination of duties with/near radiation sources.
- Notifying Radiation Safety/dosimeter distributor of pending student termination.
- Otherwise wearing assigned dosimeters in accordance with any other Office of Radiation Safety instructions.
- Failure to comply with guidelines and responsibilities above may result in forfeiture of dosimeters and/or disciplinary action.

Reports to Wearers:

- Dosimeter wearers will be notified of radiation doses as obtained as per the criteria specified in regulations contained in 10 CFR 19 or any other applicable state or federal regulation.
- Individuals may be notified if their cumulative readings in any calendar quarter exceed pre-established ‘investigation levels’, or if any unusual or apparently ‘high’ dosimeter reading(s) are identified by Radiation Safety personnel.
- Regular dose reports [excised of personal information other than dosimeter wearer id number] are provided to the dosimeter distribution group distributor for availability to wearers.
- Individuals may also obtain their dosimeter results by making proper request to the Office of Radiation Safety. Such requests generally are required to be made in writing to protect the individual’s personal information from release to unauthorized personnel.

Regular dose reports are provided to the dosimeter distribution group distributor for availability to wearers and confidential:

- Individual radiation dose readings are considered as protected information and access to this information is limited to Radiation Safety personnel, supervisors, program directors, management personnel, members of the Radiation Safety Committee, regulatory inspectors, or others (with RSO approval) with a legitimate need-to-know.
- Release of individual dose information in any circumstances is limited to the minimum necessary.
- Any other personal information obtained by the Office of Radiation Safety in the administration of the dosimeter program is treated as confidential.

“High” Radiation Dosimeter Readings

- High or unusual radiation dosimeter readings are investigated by Mount Sinai's Radiation Safety Officer. Readings above designated "Investigation Levels" are evaluated with regard to workload and type of duties performed by the dosimeter wearer; adherence to proper work practices; proper care and use of the dosimeter; and possible exposure of the dosimeter to "non-occupational" radiation sources. In cases where it appears that the high readings may be due to inadequate safe work practices or improper use or storage of the dosimeter(s), the wearer is counseled by Radiation Safety Officer and/or the wearer's supervisor(s).

PROFESSIONAL BEHAVIOR

1) Performance Skills and Attitudes – Assessment Procedures

In addition to mastery of cognitive skills and knowledge, students will be evaluated on their performance skills and attitudes. These include the following:

a. Adherence to Stony Brook University's Code of Conduct;
b. Adherence to the SHP policies and procedure manual;
c. Adherence to the Mount Sinai Health System policies and procedures;
d. Ability to work with and relate to peers, faculty, and other members of the health care team;
e. Maintain a positive and respectful attitude in all aspects of work;
f. Maintain attendance and arrive on time to work; and
g. Conduct oneself in a professional demeanor at all times, including professional dress.

Successful completion of each rotation requires that the student continuously maintain high standards. This means that regardless of one's level of achievement in cognitive skills and knowledge, if one's professional behavior is not appropriate, he/she may not meet minimum requirements for successful completion of the rotation.

2) Unsatisfactory Performance Skills or Attitudes

Unsatisfactory behavior such as disruption of class activities, expression of derogatory, disrespectful remarks to the instructor, inability to work with peers, or excessive unexcused absences will result in further action.

A student who has exhibited unsatisfactory behavior that may affect his/her final evaluation and academic standing shall receive a written warning that stated behavior may jeopardize successful completion and lead to disciplinary action.

The details of these policies and procedures can be found in the Academic Standing Policy of the School of Health Profession's; see the SHP Handbook for Certificate Programs at:
Https://healthtechnology.stonybrookmedicine.edu/students/incoming/orientation

All students are also expected to adhere to the Stony Brook University Student Conduct Code (available on the SHP webpage).

GENERAL RULES OF CONDUCT AND SAFETY

Students are expected to conduct themselves in a professional manner at all times, reflecting the integrity and values of the Mount Sinai Health System. Failure to comply with the rules of conduct and safety will result in disciplinary action.

Conduct

1) Students are expected to observe guidelines set forth in the directives (article 35) issued by the New York State Department of Health, Radiologic Technology, Bureau of Environmental Radiation Protection.
2) Students must abide by the policy and standard rules and regulations of the SHP, Medical Dosimetry Program and the Mount Sinai Health System.
3) Students will address the staff, patients, and fellow students by their appropriate title and/or last name.
4) Smoking, eating, and drinking are permitted in designated areas only.
5) Personal relationships with staff and patients are prohibited.
6) Personal conversation and discussions with classmates or staff while interacting with patients are in poor taste and should be limited to off-duty hours.
7) Grievances should follow the Stony Brook SHP Handbook.
8) Cell phone use is not permitted during clinic hours and should be stored in student lockers. Cell phones are not to be on the person of any student in clinic areas.

Safety

1) Students are required to acquaint themselves with the routine radiation and electrical safety policies and procedures and abide by all departmental radiation safety rules.
2) Accidents involving patients will be reported immediately to the program director and clinical supervisor who will file a written incident report.
3) Accidents involving students will be reported immediately to the program director and clinical supervisor who will file a written incident report. The student will then report to the Mount Sinai Emergency Department to be evaluated and cleared.
4) Radiation dosimetry (film) badges will be worn at all times while in the clinical facility and left within the facility upon leaving for the day. Film badges are not to be taken home.
5) Gross and willful negligence in the use of radiation and/or in the handling of radioactive substances which endangers the health of the student(s), staff, or patients, will result in an immediate removal from the clinical rotation and a recommendation for immediate dismissal from the program.

Clinical classroom etiquette is as follows:
When not occupied for a mini course, the Mount Sinai Hospital Classroom and the Mount Sinai West Classroom are the personal workspaces of the Center for Radiation Sciences Education leadership team. As such, students should respect the space as follows:

- The primary desk and computer are not to be used by students; at no time are students permitted to eat or work at educators' desks.
- When a member of the education leadership team is working from a classroom, it is not to be a shared space for students to break for lunch or work on their assignments. The cafeteria and library allow ample space for students to eat and study.
- Students must ensure the space is tidy after using the classrooms for mini courses.
- **At no time may students eat in either the MSH or West classroom.**
- Failure to abide by clinical classroom etiquette will result in disciplinary action.

Clinical Education: Policies, Procedures & Student Responsibilities

The application of theory learned in the classroom is applied to the clinical environment throughout the student's clinical education.

The following procedures are to be utilized when a student attempts to satisfy all Performance Objectives:

The clinical instructor(s) maintains all ongoing processes where the student must:

- Observe the Instructor perform the specific procedure.
- The student will assist the Instructor perform the specific procedure.
- Have the Instructor observe the student enact the same procedure.
- Have the Instructor critique and correct any possible errors.
- Prior to the student's attempt to satisfy a specific performance objective, the student must successfully perform the procedure previously.
- Having satisfied the above criteria, the student can request (at their own discretion), that the Instructor evaluates their performance for Clinical Competency.
- The student must perform each step of the procedure correctly and consistently to be deemed successful in satisfying any attempted objective.

Clinical competency evaluation forms are maintained to record student grades and progress and to communicate their performance. All records are maintained electronically on Trajecsys and verified by the Program Director. A student not successful in completing their clinical requirements will be **ineligible** for graduation. The program uses the Clinical Performance Evaluation form, Clinical Competency Evaluation, and Procedure Log to document and evaluate student progress during the clinical practicum.

All educational activities of the Program are maintained with various channels of communications. Methods of communication include, but are not limited to, scheduled clinical site visits by the Program Director, intermittent telephone calls, written correspondence, advisory committee meetings, and formal and informal conversations with the Clinical Supervisors and formal student/program director meetings.

Each student is provided with a Clinical Education Handbook during the required **Orientation to Clinical Education** session on the first day of the clinical practicum. Due process policies for students participating in the clinical education component are in place, as is the behavioral and technical objectives and standards, attendance academic standing, probation and dismissal and pregnancy policies.

Clinical Education Plan

2 Month clinical rotation schedules will be provided to each student and the clinical preceptors during orientation.

At the start of each clinical rotation, the clinical preceptor will introduce the department the first day of a student's clinical assignment. Students will be oriented to the hospital and the department. Students will present a "Student Intake Form" (appendix 2) on the first day of each 2-month clinical rotation. This document will review student experience, goals, objectives, and expectations.

The "Plan" for the clinical education component of this program is to satisfactorily complete all clinical competencies and required assignments. All clinical courses will have competency objectives incorporated into an evaluation instrument.

Students are evaluated by the clinical staff at the end of each 2-month rotation. These evaluations will be utilized to establish a final grade (Pass/Fail) for the clinical education session and are kept in the student's file. The first two months of the clinical year, students will be evaluated using the "Student Evaluation."

Specialty rotations in SRS planning, proton therapy, radiation therapist shadowing, and with a physician will be assigned throughout the clinical year.

Instructional methods used to teach all clinical coursework include: Demonstrations, Personal Experiences, Case Study, Lecture and Planning Techniques.

Following successful completion of the clinical year, students receive a Clinical Completion Record inclusive of the following:

1. 235 days of clinical education in accordance with the Time & Attendance Policy
2. Clinical competency requirements and satisfactory clinical performance evaluations for clinical rotations
3. Study Units with the minimum passing grade of 75%

235 Clinical education days	Complete
Clinical competency requirements	Complete
Clinical performance evaluations	Satisfactory
Study units	
Exams 30%	_____
Assignments 10%	_____
Papers & presentations 20%	_____
QA 10%	_____
Logs 10%	_____
Monthly clinical evaluations 20%	_____

Final clinical non-credit, non-degree certificate program grade: _____
Final transcript grade documented as Pass/Fail: Pass/Satisfactory

Direct Supervision Policy

All clinical activities involving a patient shall require appropriate supervision by a staff medical dosimetrist/physicist or any appropriate clinical staff member, e.g. RN, CMD, MD, RTT, etc. As follows:

- Students must never begin the treatment planning process (contouring, registration, pulling images, planning) without notifying the proper clinical preceptor first.
- See Appendix 13: The Department Policy and Procedures for Medical Dosimetry Students

Professional Confidentiality

One of the major restrictions that a health care profession imposes is the need to maintain strict confidentiality of medical and personal information about a patient. Medical records are comprised of many parts including the following: histories, diagnostic images, and radiographic film records. They must be handled confidentially and cannot be revealed to the patient, family, or others outside the department without the direct consent of the patient's physician. Medical information should only be shared with individuals who are involved in the patient's care and must know this information for treatment purposes. Information should never be discussed with the student's family or friends even in the most general terms, as **this would be violating the patient's rights.**

An invasion of privacy can be as obvious as releasing medical information to the press, or as subtle as discussing a patient's condition with a co-worker in a public place. Students must maintain confidentiality and ensure the privacy of each patient.

Students must maintain strict confidentiality of all health information of patients at Mount Sinai sites during and after the course of their clinical rotations. Students may neither use nor disclose health information of patients to which they have access, other than as expressly authorized by the clinical affiliate. Students may not record any patient-identifiable information on their personal documents (e.g. Clinical logs). Students must be familiar with and adhere to Mount Sinai's HIPAA policy.

Policy on Disabilities

Student Accessibility Support Center (SASC):
If you have a physical, psychological, medical or learning disability that may impact your course work, please contact Student Accessibility Support Center, ECC (Educational Communications Center) Building, Room 128, (631) 632-6748. They will determine with you what accommodations, If any, are necessary and appropriate. All information and documentation is confidential. Students who require assistance during emergency evacuation are encouraged to discuss their needs with their professors and Student Accessibility Support Center. For procedures and information go to the following website: http://www.stonybrook.edu/ehs/fire/disabilities

Policy on Evaluations with Program Director

Each student will meet with the program director/assistant program director within 1 week of the end of each clinical rotation. The students will be prepared to discuss the following:

- Intake form (inclusive of goals, expectations)
- Attendance sheet (daily clinic, quality assurance and chart rounds)
- Evaluation (from preceptor)
- Record of involved procedures
- Record of competency form

Academic Integrity

Each student must pursue his or her academic goals honestly and be personally accountable for all submitted work. Representing another person's work as your own is always wrong. Faculty is required to report any suspected instances of academic dishonesty to the Academic Judiciary. Faculty in the Health Sciences Center (School of Health Profession's, Nursing, Social Welfare, Dental Medicine) and School of Medicine are required to follow their school-specific procedures. For more comprehensive information on academic integrity, including categories of academic dishonesty please refer to the academic judiciary website at
http://www.stonybrook.edu/commcms/academic_integrity/index.html

Academic Standing, Probation, and Termination Policy

Students must achieve a minimum **75%** (equals "C"/pass) in all of the following non-credit didactic courses to qualify for graduation: Clinical Radiation Oncology, Simulation, Professionalism, Treatment Planning, Radiation Protection and Physics.

Procedure follows the SHP policies and procedures on probation and termination contained in this book.

The program director will recommend to the dean in writing, (within five working days) that the student be placed on probation. Probation/termination is indicated by the following:

- A student who has been placed on probation (e.g., failure of a pre-requisite) may not ordinarily be permitted to participate in full-time clinical practice, except under extraordinary circumstances, and at the discretion of the program faculty and the dean.
- A student enrolled in the program will be recommended for probation if a grade of less than 75% (equals minimum passing grade of "C") in any required didactic course within the program's curriculum.
- A student that does not complete 2 competencies successfully per month, or who fails a competency attempt 2 times will be given a warning. Any second warning will result in probation.
- A student that fails 6 competencies throughout the course of the clinical year will be placed on probation.
- A student that receives under a 3.0 evaluation or who logs patient learning logs less than 2 times per week will be given a warning. Any second warning will result in probation.
- A student given a warning or placed on probation will undergo remediation with the program director and relative clinical preceptors.
- Unsatisfactory, disrespectful, and/or unethical clinical performance alone will result in a recommendation to the dean for probationary status and/or possible termination from the program.
- Any student will be recommended for termination from the Medical Dosimetry Program if, while on probation, their academic grade(s) falls below 75% and/or a grade of unsatisfactory in any clinical education evaluation(s).
- Students who fail (less than 75% or "C") two (2) required courses in one (1) semester will be recommended by memo to the dean, for termination from the program.
- A student who receives both a didactic course grade of less than 75% and one or more unsatisfactory clinical evaluations will be recommended, by memo, to the dean for termination from the program.
- A student placed on probation twice will be recommended for termination from the Medical Dosimetry Program.

If the requirements of ethical behavior, health, good academic and clinical standings are not met, the student may be placed on probation or dismissal from the program.

Student Appeal Process for Academic Standing Issues

See the Stony Brook University SHP Student Handbook for the student appeal policy and procedure. This policy can be found on page 9, section G: Https://healthtechnology.stonybrookmedicine.edu/sites/default/files/2021%20SHTM%20Student%20Handbook%20for%20Certificate%20Programs.pdf

Student Grievance Policy and Procedure

See the Stony Brook University SHP Student Handbook for the Academic Grievances Policy.

Critical Incident Management

Stony Brook University and the Mount Sinai Health System expect students to respect the rights, privileges, and property of other people. Faculty are required to report to the Office of University Community Standards any disruptive behavior that interrupts their ability to teach, compromises the safety of the learning environment, or inhibits students' ability to learn. Faculty in the HSC Schools and the School of Medicine are required to follow their school-specific procedures. Further information about most academic matters can be found in the Undergraduate Bulletin, the Undergraduate Class Schedule, and the Faculty-Employee Handbook.

Liability Insurance

Students are required to provide proof of professional liability insurance coverage. A policy can be purchased from CM&F Group. Students are required to carry a minimum of $1,000,000 policy coverage. The annual policy coverage should begin on the first day of clinical rotations. Approximate cost is $39.00/year. The policy cover page, including dates of coverage and coverage amount needs to be submitted to the program director. Students are not permitted access to the clinical areas without documented proof of liability coverage.

https://www.cmfgroup.com/professional-liability-insurance/radiation-imaging-diagnostic-professional-insurance/medical-dosimetrist-insurance/

PREGNANCY POLICY

The **pregnancy policy** of the Stony Brook University Medical Dosimetry Program is designed to reduce the potential for radiation exposure to the fetus and to assure that the student participates in an academic and clinical curriculum that will enable the student to meet the objectives of the program.

In the event that a student becomes pregnant while enrolled in the program, the individual has the option of whether or not to inform the Program Director of the pregnancy. If the student chooses to inform the Program Director, it must be in writing. In the absence of

this voluntary, written disclosure, a student cannot be considered pregnant. Upon receipt of a written, voluntary disclosure of pregnancy, the student shall be given a choice of three (3) options, as follows:

1. To continue full participation in the program modified by program officials to exclude or postpone assignments and/or employ additional safety precautions for those procedures that carry greater potential for occupational radiation exposure.
2. To continue full participation in the program without modification or interruption.
3. To withdraw completely from clinical training.

If a student chooses to discontinue clinical education, the student will be permitted to complete the didactic portion of the curriculum. The student will be required to be in attendance only during scheduled classroom hours as is possible. The remaining clinical training hours and all clinical competencies shall be completed at a time mutually agreed upon following the course of pregnancy. The student shall be eligible for certification and licensure only upon satisfaction of all program graduation criteria.

If a student chooses to continue with Clinical Education:

- The program officials shall determine the exact form and content of the plan for clinical training should modification be selected by the student.
- A fetal exposure monitor will be issued and possibly additional shielding materials made available if necessary.
- The plan must not compromise the program objectives or the education of the other class members.
- Efforts shall be made to allow the student to continue in the program as long as medically advisable and educationally valid.
- The student shall meet with the Radiation Safety Officer to be advised of the most current information available regarding possible medical risks of radiation exposure to the fetus and the radiation exposure monitoring guidelines to be followed.
- The student must adhere to the pregnancy policy of the clinical education center to which assigned.

DECLARATION OF PREGNANCY

I, _____, do hereby make this voluntary declaration of pregnancy. My estimated date of conception was _____, 20___.

It has been explained to me that I am making this voluntary declaration of pregnancy. I understand this means the Medical dosimetry Program/Licensee must take measures to ensure that the total dose to the embryo/fetus during the entire pregnancy from occupational exposure does not exceed 0.5 rem (5 msv). If, as of this date, the total dose to the embryo/fetus is 0.45 rem (4.5 msv) or greater, the total dose to the embryo/fetus during the remainder of the pregnancy shall not exceed 0.05 rem (0.5 msv).

It has been explained to me that these measures may include the reassignment of clinical rotations and corresponding learning objectives to those that will result in lower occupational exposure or the placement of certain restrictions on the duties that I perform.

It has also been explained to me that I may revoke the declaration of pregnancy at any time and that the revoking of the declaration must be in writing.

_____ _____

(Student) Medical Dosimetrist Date

_____ _____

Radiation Safety Officer Date

Sample Document
(Not to be used as an official form)

Subpart B—Radiation Protection Programs
Source: 56 FR 23396, May 21, 1991, unless otherwise noted.

§20.1101 Radiation Protection Programs

a) Each licensee shall develop, document, and implement a radiation protection program commensurate with the scope and extent of licensed activities and sufficient to ensure compliance with the provisions of this part. (See §20.2102 for recordkeeping requirements relating to these programs.)
b) The licensee shall use, to the extent practicable, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).
c) The licensee shall periodically (at least manually) review the radiation protection program content and implementation.
d) To implement the ALARA requirements of §20.1101 (b), and notwithstanding the requirements in §20.1301 of this part, a constraint on air emissions of radioactive material to the environment, excluding Radon-222 and its daughters, shall be established by licensees other than those subject to §50.34a, such that the individual member of the public likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of 10 mrem (0.1 msv) per year from these emissions. If a licensee subject to this requirement exceeds this dose constraint, the licensee shall report the exceedance as provided in §20.2203 and promptly take appropriate corrective action to assure against reoccurrence.

[56 FR 23396, May 21, 1991, as amended at 61 FR 65127, Dec. 10, 1996]

§20.1208 Dose to an embryo/fetus

a) The licensee shall ensure that the dose to an embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed 0.5 rem (5 msv). (For recordkeeping requirements, see §20.2106.)
b) The licensee shall make efforts to avoid substantial variation above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in paragraph (a) of this section.
c) The dose to an embryo/fetus shall be taken as the sum of—
    1) The deep-dose equivalent to the declared pregnant woman; and
    2) The dose to the embryo/fetus from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman.
d) If the dose to the embryo/fetus is found to have exceeded 0.5 rem (5 msv), or is within 0.05 rem (0.5 msv) of this dose, by the time the woman declares the pregnancy to the licensee, the licensee shall be deemed to be in compliance with paragraph (a) of this section if the additional dose to the embryo/fetus does not exceed 0.05 rem (0.5 msv) during the remainder of the pregnancy

CRITERIA FOR PROGRAM COMPLETION

In order to successfully complete the clinical program in Medical Dosimetry and to be eligible to receive a Certificate of Completion, each student must satisfy the following criteria:

1. Complete 235 days of clinical education in accordance with the Time & Attendance Policy

2. Complete Clinical Competency requirements and receive satisfactory Clinical performance evaluations for each assigned clinical rotation.

3. Complete each Study Unit with the minimum passing grade of 75%

Clinical Year Grading System

Student's final clinical grade will be calculated based on the following courses, evaluations, and deliverables:

- Exams
- Assignments
- Papers and Presentations
- QA
- Log Completion
- Clinical Evaluations

Students will receive numerical grades in class; however, transcript grades will be documented as Pass/Fail.

Student Deliverables

In addition to completing treatment competencies, effective August 1st, students are to complete the following activities and submit deliverables as required:

- 1 quality assurance attendance per month to be entered in Trajecsys (Appendix 7)
  - Date of QA attendance must be communicated to educational team
- Grand rounds once per quarter
  - Deliverable: Essay on key take-aways (Appendix 8)
- Journal Club presentation once per quarter
- Deliverable: Presentation on key take-aways (Appendix 9)
- Log submission, three submissions/week, to be entered in Trajecsys
- Term 1 Exam/Presentation
- RTT rotation
  - Deliverable: Essay on key take-aways and experiences
- Physician Rotation
  - Deliverable: Essay on key take-aways and experiences

Students are not permitted to work on program deliverables while in clinic. Doing so will result in disciplinary action.

Grade	Numerical Equivalent	
A	95-100	
A-	90-94	
B+	88-89	
B	85-87	
B-	80-84	
C+	78-79	
C	75-77	**Passing grade for the program is 75*
C-	70-74	
F	<70	

Guidelines for Clinical Supervisors/Instructors When Filling Out Evaluation Forms

Evaluation forms are designed to evaluate either the cognitive, psychomotor, and/or effective skills of students. When evaluation forms are being filled out, the ratings and comments should address the competency and skills that can be expected of a medical dosimetry student, not an experienced medical dosimetrist.

Please refer to the following where applicable:

Cognitive Skills: Deal with the application of knowledge and the development of Intellectual abilities.

Psychomotor Skills: Deal with behavioral tasks involving physical action.

Affective Skills: Deal with interest, attitudes, and value.

CLINICAL BEHAVIOR EVALUATION

The student evaluation form (appendix 3 and appendix 4) must be completed via Trajecsys by clinical preceptors, including appropriate (online) signatures, each month. Clinical preceptors work with the medical dosimetry team assigned to the student for the month when completing monthly evaluation forms in Trajecsys.

Instructors/Evaluators are encouraged to elaborate upon the student's strengths and/or areas that need improvement based upon the content of this evaluation and overall student/instructor/patient interactions in the comments section. Evaluators are requested to address any "no" answer(s) in the evaluation.

CLINICAL COMPETENCY POLICY

Starting the third month of the clinical year (August) a minimum of 2 treatment planning competencies are due by the last day of each month. All competencies must be completed prior by the end of the evaluation period in order to ensure a timely grade.

A list of all required competencies can be found in appendix 10.

Instructions for Completing Competency Forms

Evaluations will not be considered complete unless all the information requested on the form in the student section is filled out entirely.

The student must present the treatment planning directive (and Rx to be delivered) to the clinical preceptor prior to accessing the patient dataset. The student must explain the competency details to the clinical preceptor at the beginning of each competency. During this presentation, the student must explain the site, dose, diagnosis, histology, imaging and any other relevant information.

The supervising instructor must check off the appropriate areas on the Competency Form as each task is correctly performed (appendix 11 and appendix 12).

If a student commits an error while attempting to plan, the evaluation process is terminated at that point. The error is then indicated on the worksheet and entered into Trajecsys. The sheet that reflects the error must be kept on file and the student must repeat the process from the beginning.

All completed Competency Forms will be kept in the student's folder and submitted to the program director, along with the other evaluation forms, by the last clinical day of the clinical month rotation.

Please note: students will be evaluated for specialty rotations (CT Sim, physician and brachytherapy), through submitted essay, reflective journal and worksheet.

SPECIALTY ROTATIONS

Specialty rotations include internships to better understand departmental function, and patient experience in Radiation Oncology. Students will spend 1 week under a physician's supervision and service to understand patient consults, on treatment visits and follow-ups, nursing education, as well as the communication between the department and patient. Students will spend multiple days during clinical skills orientation rotating with RTTs, learning how radiation is delivered through treatment machines. While rotating to the Blavatnik Family – Chelsea Medical Center at Mount Sinai, students will shadow brachytherapy procedures alongside radiation oncologists, Vishal Gupta, MD. In March, students will complete a 2-week observational rotation at the New York Proton Center to shadow proton therapy procedures. Students will observe and participate in SRS Planning techniques throughout the clinical year across clinical settings as they arise.

Physician Specialty - Rotation

Goal: To educate the student to the role of the radiation oncologist in delivering quality care to cancer patients undergoing radiation therapy.

Student Objectives: Course objectives are consistent with the professional curriculum of the ASRT and approved by the Joint review Committee on Education in Radiologic Technology (JRCERT) standards for accreditation. Www.JRCERT.org

- Understand the fundamentals of the required physician for informed consent, side effects of radiation therapy and the expected outcomes. Identify anticipated side effects (both acute and chronic) based upon both the tumor location and anatomy within the treatment field.
- Understand the *need* and *procedure* for obtaining a patient's consent. All new patients must sign a written consent form filled out by their attending radiation oncologist prior to receiving treatment planning and radiation therapy treatments.
- Discuss aspects of clinical evaluation, therapeutic decision-making and informed consent.
- Understand the process and explain the need of new patient orientation which includes the following:
    - Introduction of the radiation oncology health care team;
    - Verification of patient's identity;
    - Tour of radiation oncology department (e.g., reception area, parking validation, refreshments);
    - Patient waiting area (e.g., changing area, lockers, gowns);
    - Nursing station;
    - Simulator; and
    - Treatment area to include patient's treatment unit.
- Understand new patient assessment to include the following:
    - View "Introduction to Radiation Therapy" video;
    - Nursing assessment and knowledge base evaluation;
    - Reinforcement of appropriate patient education information both verbal and written;
    - Preparation of patient information packet with site-specific handouts; and
    - Referral to social worker if needed.
- Understand evaluation of patient's support systems at home including:
    - Transportation;
    - Nutrition;
    - Pain management; and
    - Self-care.
- Understand nursing documentation chart.
- Understand on-treatment patients including:
    - Monitoring of weight and blood pressure each visit;
    - Appropriate graphic sheet charting;
    - Updating medications on summary list;
    - Monitoring weekly blood work results;
    - Reviewing anticipated changes related to specific treatment site; and
    - Documenting telephone conversations (e.g., instruction on the proper utilization of telephone contact sheets).

- Understand chart review including:
  - Ensuring physician's orders are properly endorsed;
  - Appropriate chart order (e.g., pathology, history, physical, are in order and all documents are filed under the proper section); and
  - Nursing progress notes are properly endorsed to include the following:
    - Nursing assessment is complete;
    - Ambulatory care summary list current;
    - Physician list current and accurate; and
    - Pathology reports and current laboratory results are filed in chart.
- Understand continuing assessment, education, and management of on-treatment patients to ensure optimum quality of life while going undergoing radiation therapy treatments.
- Understand follow-up procedures including:
  - Follow-up questionnaire must be filled out properly;
    - Obtain outside data (if not presently available from chart)
    - Document results of in-house diagnostic work-ups (if not present in chart)
  - Document current weight and blood pressure;
  - Update medications and current attending physicians involved in the patient's total care;
  - Coordinate diagnostic work-ups for date of follow-up visit and for future visits as well; and
  - Follow-up of results of all ordered diagnostic work-ups and evaluations ordered prior to or after patient's follow-up visit.

Reflective Journal: Journal is to be 4 pages in length (double spaced). Student should reflect on their experience and understanding of patient consults, on treatments visits, follow ups and nursing education. Students are to highlight the communication observed between physicians, nurses, radiation therapists, medical dosimetrists and support staff. Journal is to be completed one week following a student's physician rotation.

Brachytherapy Specialty – Embedded into Clinical Rotations

Goal: To educate the student on the role of brachytherapy in the treatment of cancer.
Student Objectives: Course objectives are consistent with the professional curriculum of the ASRT and approved by the Joint review Committee on Education in Radiologic Technology (JRCERT) standards for accreditation. Www.JRCERT.org

- Discuss quality control procedures and recommend tolerances for the safe handling of brachytherapy sources and remote afterloading equipment
- Identify appropriate clinical applications for brachytherapy
- Compare and contrast brachytherapy delivery systems
    - High-dose rate (HDR)
    - Low-dose rate (LDR)
- Understand isotopes, methods of radiation production, half-life, energy and radiation protection
- Understand proper brachytherapy communication, and patient observation
- Assess the patient before, during and after brachytherapy procedures
- Understand emergency procedures relative to brachytherapy treatments and machinery
- Describe the elements of a radiation protection survey for patients undergoing Brachytherapy in the operating room and inpatient settings
- Understand storage, remote after loaders, surveys, licensing, documentation, management of accidents, handling and quality assurance for brachytherapy procedures.

Deliverable: Key takeaways as noted above to be entered in Trajecsys via logs.

Radiation Therapist Observational Specialty - Rotation

Goal: To educate the student on the role of the radiation therapist in delivering radiation therapy.
Student Objectives: Course objectives are consistent with the professional curriculum of the ASRT and approved by the Joint review Committee on Education in Radiologic Technology (JRCERT) standards for accreditation. Www.JRCERT.org

- The purpose of this rotation is for medical dosimetry students to better understand the role of the radiation therapist and continuity of care in the radiation oncology department from simulation to planning to treatment. Medical dosimetry students will shadow RTTs in the simulation and treatment environment, learn from RTTs in the clinic and didactic environment and log key takeaways from ASRT clinical refresher videos.

Deliverable: Key takeaways as noted above to be entered in Trajecsys via logs.

Reflective Journal: Journal is to be 2 pages in length (double spaced). Student should reflect on their experience and understanding of patient setup, simulation procedures, treating patients, and patient care. Students are to highlight the communication observed between physicians, nurses, radiation therapists, medical dosimetrists and support staff. Journal is to be completed one week following a student's therapy rotation.

OBSERVATIONAL ROTATIONS

An observation site is used for student observation of the operation of equipment and/or procedures. These sites provide opportunities for observation of clinical procedures that are not available at the RTT Program's main clinical settings. Students may not assist in, or perform, any aspects of patient care during observational assignments.

Proton Observational Rotation

New York Proton Center (NYPC) Location: 225 East 126th Street, New York, NY 10035
NYPC Clinical Preceptor: Andy Shim | andy.shim@nyproton.com| (646) 968-9034

Students will spend 4 weeks observing medical dosimetrists at the New York Proton Center (NYPC), a consortium between the Mount Sinai Health System, Memorial Sloan Kettering Cancer Center and Montefiore Medical Center, managed by Prohealth. Students will report to the NYPC chief of Dosimetry and will be under direct supervision at all times. Students will receive a dosimeter badge at the start of their observational rotation, badge results will be shared with the Dosimetry Program director immediately once received.

Proton Observation Rotation Objectives
At the conclusion of the Proton Observational Rotation, students will be able to:

- Categorize radiation therapy equipment:
  - Proton cyclotron
    - Components
    - Methods of radiation production
    - Accessories
    - Compensation
- Explain proton:
  - Properties
    - Energy deposition
    - Bragg peak advantage
  - Clinical applications and treatment planning
    - Motion management and mitigation strategies
    - Patient positioning
    - Imaging workflow
    - Treatment planning
    - Treatment delivery

Deliverable: Key takeaways as noted above to be entered in Trajecsys via logs.

COVID-19 POLICY

The impact of COVID-19 continues to vary widely among radiation therapy programs. The Dosimetry Program will adhere to guidelines given by the New York State, Stony Brook University and the Mount Sinai Health System.

The Dosimetry Program will continue to fulfill the didactic and clinical competency requirements outlined by the AAMD and in compliance with the Joint Review Committee on Education in Radiologic Technology (JRCERT). The Dosimetry program's contingency plan is to provide virtual clinical education inclusive of, but not limited to, student projects, research and virtual mini courses. The Dosimetry Program is prepared with robust online educational resources and support from Stony Brook University, the Mount Sinai Health System and the American Association of Medical Dosimetrist (AAMD). The following guidelines will be followed:

- Students in clinical settings are not to participate in clinical care of patients suspected or known to have COVID-19.
    - When a patient is no-longer on precautions the students may participate in clinical care of these patients
- Students must abide by the Mount Sinai Health System policies and personal protective equipment (PPE) guidelines. MSHS COVID-19 policies can be found at: https://www.mountsinai.org/about/covid19/staff-resources
- Students should remain aware of national guidelines from the CDC concerning precautions for viral illness (COVID-19) risk mitigation and exposure response.
- Students must stay home if they are ill with fever, with or without respiratory symptoms.
- All students are to check for any signs of illness before reporting to clinical rotations and notify their program director and clinical supervisor if they become ill.
- If a student experiences COVID-19 systems, they will complete COVID-19 testing and the Dosimetry Program will provide guidance on when the student is approved to return to clinic.
    - If a student is determined not fit for duty by EHS due to diagnosed COVID-19 illness, the student will remain in isolation until cleared to return to clinic. The student will be assigned make up assignments due 1 week upon return to clinic
- Accommodations due to COVID-19 Related Exposure/Illness: Academic and clinical accommodations may be made for testing, missed assignments, missed work and lost time due to quarantine and/or testing.
- Additional information can be found at:
- Https://www.cdc.gov/coronavirus/2019-ncov/index.html
- Https://www.mountsinai.org/about/covid19/staff-resources
- Https://www.stonybrook.edu/commcms/studentaffairs/caps/resources/covid-19-resources.php

Appendices

Appendix 1: Personal Exposure Monitoring Policy

THE MOUNT SINAI HOSPITAL, NEW YORK POLICY AND PROCEDURE	SUBJECT NO. 7 RS7 - Policy # 7
DEPARTMENT: Radiation Safety SUBJECT: Personal Exposure Monitoring	

Original date of issue 12/15/2014

Reviewed:	12/2014						
Revised:	12/2014						

Personal Exposure Monitoring Program

A. General Purpose

Any individual who, during the performance of normal occupational duties, is likely to receive a dose in excess of 10% of the annual limit (5,000 mrem/year) must be monitored for radiation exposure. The Radiation Safety Office in conjunction with the Radiation Safety Committee (RSC) will decide whether or not a group of workers requires monitoring. It is the responsibility of each monitored worker to comply with the policies and procedures regarding the monthly/quarterly exchange of the radiation monitoring dosimeters. Individuals, who mishandle their dosimeters, including chronic failure in mandatory timely exchange, will be reported to their department head and/or hospital administration as violating rules and regulations.

Radiation exposure records are reviewed as soon as they are received by the Radiation Safety Office (typically every 2 weeks). Hard copy of staff exposure records are maintained in the Radiation Safety Office and are always available for review during normal working hours. Digital exposure records are available upon email request.

B. Dosimeter Types

Whole body dosimeters (P1, Black color) are to be worn on the front trunk of the body underneath any lead apron. P1 dosimeters are exchanged monthly for clinical workers and quarterly for research workers.

Collar dosimeters (P13, Red color) are to be worn on the collar outside any lead apron or thyroid shielding. P13 dosimeters are worn by all fluoroscopy users and are exchanged monthly. Lead apron and thyroid collar shields must be used during the procedures. Physicians performing Interventional Procedures will wear a collar dosimeter only. The Effective Dose Equivalent for these individuals will be determined by EDE2 calculations based on NCRP 122 recommendation.

Page 1 of 4

Ring or finger dosimeters may be worn by physicians performing fluoroscopy or cardiac catheterization procedures and by individuals who handle radioactive material or sources. Ring monitors shall be worn on the hand expected to get the largest exposure.

Fetal dosimeters (P17 with picture of fetus) are to be worn on the abdomen (always under lead apron when used) by declared pregnant workers.

C. Thyroid Monitoring

Thyroid counts are performed on the following groups of employees:

1. Thyroid burden of Nuclear medicine personnel who helped prepare or administer a dosage of iodine-131 is measured within 3 days after administering the dosage. NYCDOH Article §175.03(k) requires maintaining a record of each thyroid burden measurement, date of measurement, the name of the individual whose thyroid burden was measured, and the initials of the individual who made the measurements.
2. Thyroid burden of Radiation Safety personnel who monitor therapeutic I^{131} patients are measured within three days after the treatment.
3. Thyroid burden of laboratory personnel who perform radioiodinations with volatile I^{125} or I^{131} are measured within three days after each procedure.

D. ALARA (As Low As Reasonably Achievable) Program

Mount Sinai Medical Center is committed to the implementation of a program to maintain radiation exposure to staff, visitors, and patients As Low As Reasonably Achievable. The program is implemented through the constant review of personnel monitoring records by the Radiation Safety Office. Results of these audits are presented to the Radiation Safety Committee and recommendations are made. The below table summarizes the ALARA level limits:

Quarterly ALARA Levels

Type	Level I	Level II
Whole Body	125 mrem	375 mrem
Lens of Eye	325 mrem	1,125 mrem
Extremity	1,250 mrem	3,750 mrem

Note: These limits have been adopted from NYCDOH regulatory guide 10.8

ALARA Level I: Each incident will trigger a notification process to the individual and/or their supervisor, as well as report to the quarterly Radiation Safety Committee meeting.

ALARA Level II: The Radiation Safety Office will investigate each such incident. The results of each investigation will be presented to the quarterly Radiation Safety Committee meeting.

E. Annual Limits on Exposure

Annual limits on occupational radiation exposure are in addition to any other radiation exposure one receives for medical diagnoses or treatment or from background sources. They are designed to limit risks from occupational exposure to be comparable to risks in other safe industries. The table below lists annual occupational exposure limits. The limits are:

Annual Exposure Limits

Type of Exposure	Annual Limit
Total Body Deep Dose	5,000 mrem
Any Organ	50,000 mrem
Lens of Eye	15,000 mrem
Skin or Extremity	50,000 mrem
Natural Background (NCRP 160)	620 mrem

Annual exposure histories (Form 5s) are provided to all monitored staff as required by regulation as soon as they become available each year.

F. Declaration of Pregnancy for Radiation Workers

In addition to the limits listed above, there are explicit limits applied to the embryo/fetus of a pregnant radiation worker. In order for the fetus to be monitored, the pregnant worker must declare the pregnancy in writing to the Radiation Safety Office. The declaration of pregnancy is voluntary and confidential. The table below lists the specific limits to the embryo/fetus:

Period of Exposure	Amount
Entire Gestation (9 months)	500 mrem
Each Month during Gestation	50 mrem

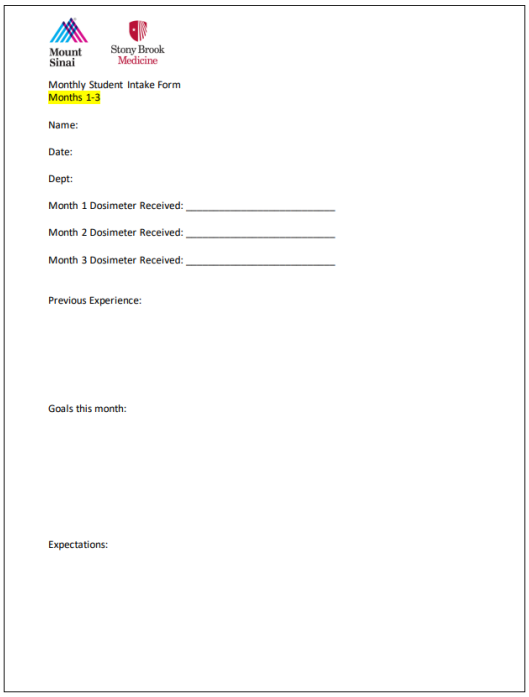
As soon as the Radiation Safety Office is notified of a declared pregnancy, the individual will undergo a confidential consultation with the Radiation Safety Officer. The employee's occupational exposure history will be reviewed and if the limits indicated above are likely to be exceeded, recommendations will be made to ensure that these limits are adhered to during the course of the pregnancy. A fetal monitoring dosimeter will be issued which must be worn beneath any lead apron on the abdomen to measure the exposure.

G. General Procedures for Handling Dosimeters

All departments with individuals who are issued radiation dosimeters must adhere to the following procedures:

1. Dosimeters must be exchanged monthly/quarterly for processing by the contract service company. All badges are to be returned to the service company within one week of return to the Radiation Safety Office.
2. Control dosimeters are kept in the Radiation Safety Office and are returned with personnel monitors for accurate processing of badges.
3. Personnel dosimeters assigned to individuals shall not be worn by anyone else.
4. Personnel dosimeters must not be taken home and must be kept in a background level area when not being worn.
5. New employees who are assigned dosimeters and who were monitored at previous employment must submit information about previous employer so that their occupational exposure histories can be obtained.
6. Each department must appoint a badge coordinator and alternate to coordinate the requirements of this section. These individuals, who will meet with Radiation Safety Office personnel to discuss badge issues, will be responsible for maintaining departmental compliance with the regulations and obtaining and coordinating necessary information with the Radiation Safety Office.
7. If an employee is aware that his/her badge has been exposed (unexpectedly), it is the employee's responsibility to notify the Radiation Safety Office immediately.

Appendix 2: Student Intake Form
Months 1-3



Monthly Student Intake Form
Months 1-3

Name:

Date:

Dept:

Month 1 Dosimeter Received: _____

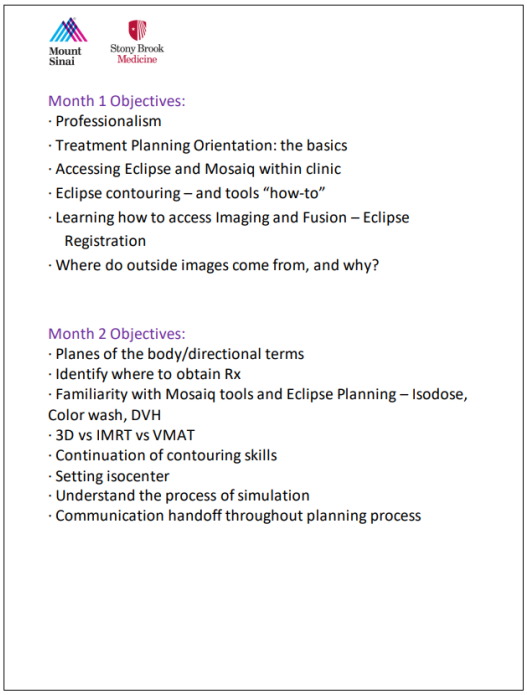
Month 2 Dosimeter Received: _____

Month 3 Dosimeter Received: _____

Previous Experience:

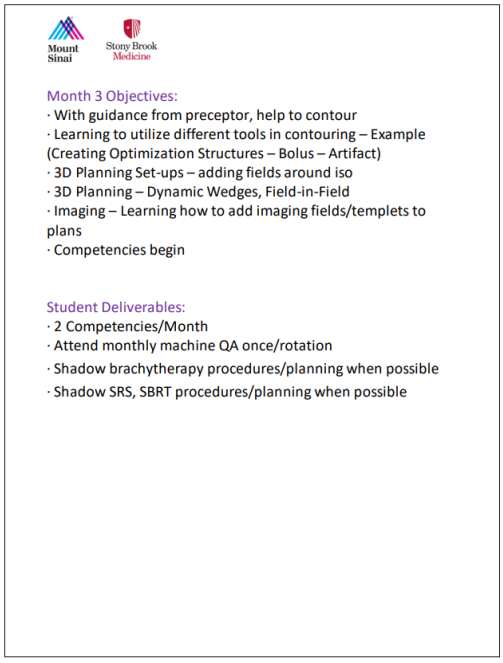
Goals this month:

Expectations:



Month 1 Objectives:
· Professionalism
· Treatment Planning Orientation: the basics
· Accessing Eclipse and Mosaiq within clinic
· Eclipse contouring – and tools "how-to"
· Learning how to access Imaging and Fusion – Eclipse Registration
· Where do outside images come from, and why?

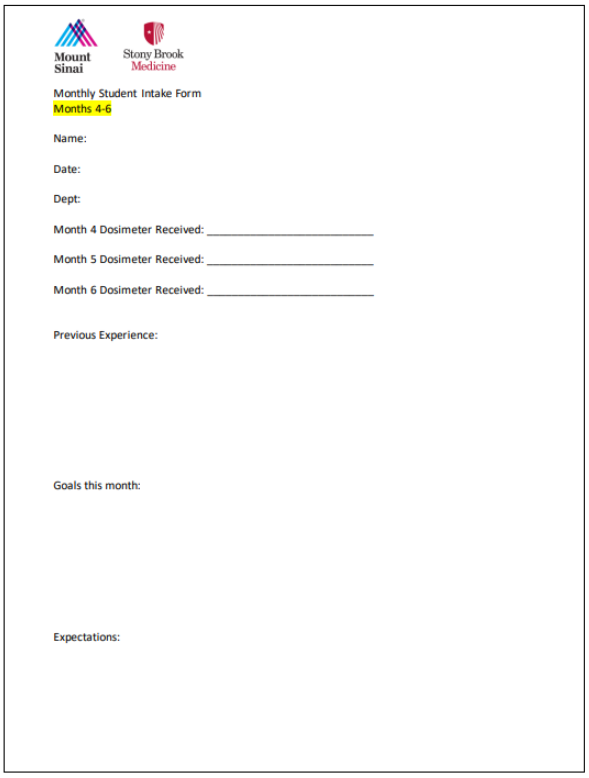
Month 2 Objectives:
· Planes of the body/directional terms
· Identify where to obtain Rx
· Familiarity with Mosaiq tools and Eclipse Planning – Isodose, Color wash, DVH
· 3D vs IMRT vs VMAT
· Continuation of contouring skills
· Setting isocenter
· Understand the process of simulation
· Communication handoff throughout planning process



Month 3 Objectives:
· With guidance from preceptor, help to contour
· Learning to utilize different tools in contouring – Example (Creating Optimization Structures – Bolus – Artifact)
· 3D Planning Set-ups – adding fields around iso
· 3D Planning – Dynamic Wedges, Field-in-Field
· Imaging – Learning how to add imaging fields/templets to plans
· Competencies begin

Student Deliverables:
· 2 Competencies/Month
· Attend monthly machine QA once/rotation
· Shadow brachytherapy procedures/planning when possible
· Shadow SRS, SBRT procedures/planning when possible

Months 4-6



Monthly Student Intake Form
Months 4-6

Name:

Date:

Dept:

Month 4 Dosimeter Received: _____

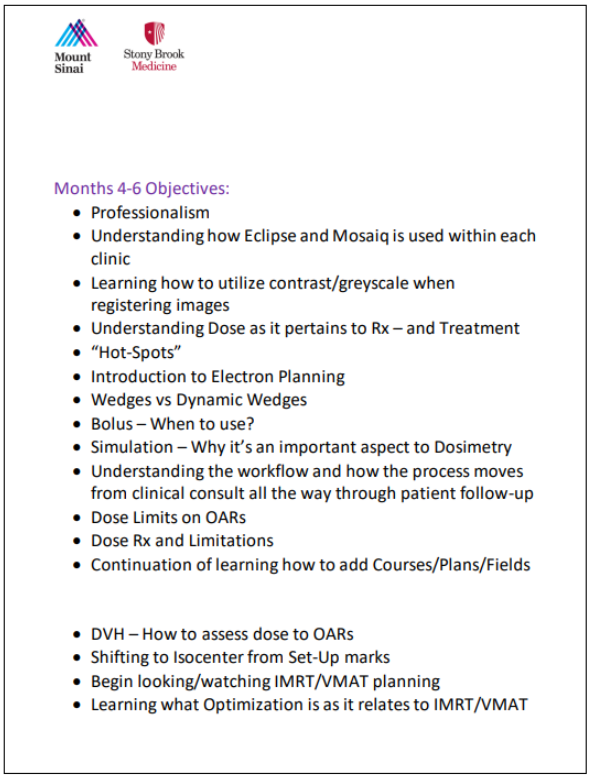
Month 5 Dosimeter Received: _____

Month 6 Dosimeter Received: _____

Previous Experience:

Goals this month:

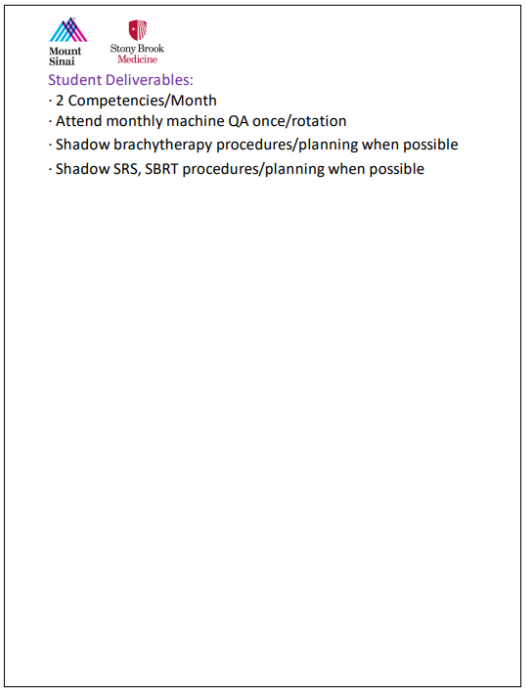
Expectations:



Months 4-6 Objectives:

- Professionalism
- Understanding how Eclipse and Mosaiq is used within each clinic
- Learning how to utilize contrast/greyscale when registering images
- Understanding Dose as it pertains to Rx – and Treatment
- "Hot-Spots"
- Introduction to Electron Planning
- Wedges vs Dynamic Wedges
- Bolus – When to use?
- Simulation – Why it's an important aspect to Dosimetry
- Understanding the workflow and how the process moves from clinical consult all the way through patient follow-up
- Dose Limits on OARs
- Dose Rx and Limitations
- Continuation of learning how to add Courses/Plans/Fields

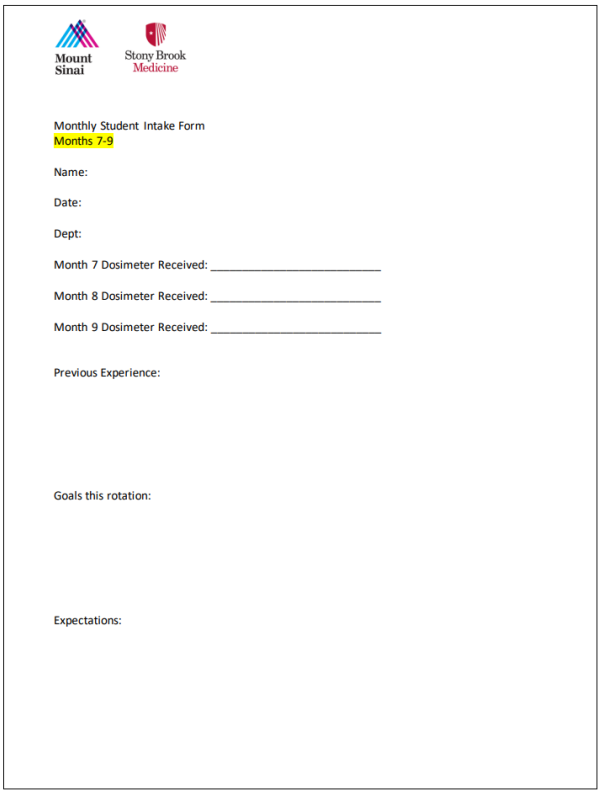
- DVH – How to assess dose to OARs
- Shifting to Isocenter from Set-Up marks
- Begin looking/watching IMRT/VMAT planning
- Learning what Optimization is as it relates to IMRT/VMAT



Student Deliverables:

· 2 Competencies/Month
· Attend monthly machine QA once/rotation
· Shadow brachytherapy procedures/planning when possible
· Shadow SRS, SBRT procedures/planning when possible

Months 7-9



Monthly Student Intake Form
Months 7-9

Name:

Date:

Dept:

Month 7 Dosimeter Received: _____

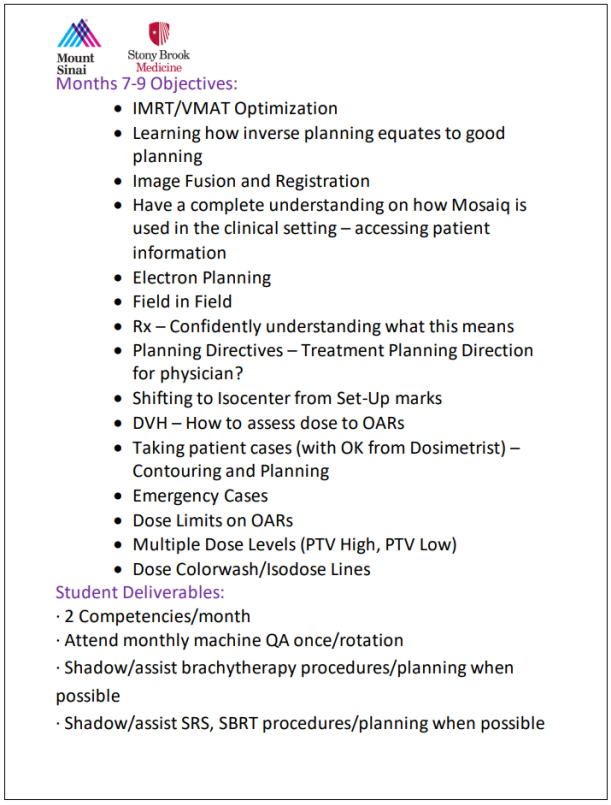
Month 8 Dosimeter Received: _____

Month 9 Dosimeter Received: _____

Previous Experience:

Goals this rotation:

Expectations:



Months 7-9 Objectives:

- IMRT/VMAT Optimization
- Learning how inverse planning equates to good planning
- Image Fusion and Registration
- Have a complete understanding on how Mosaiq is used in the clinical setting – accessing patient information
- Electron Planning
- Field in Field
- Rx – Confidently understanding what this means
- Planning Directives – Treatment Planning Direction for physician?
- Shifting to Isocenter from Set-Up marks
- DVH – How to assess dose to OARs
- Taking patient cases (with OK from Dosimetrist) – Contouring and Planning
- Emergency Cases
- Dose Limits on OARs
- Multiple Dose Levels (PTV High, PTV Low)
- Dose Colorwash/Isodose Lines

Student Deliverables:

· 2 Competencies/month

· Attend monthly machine QA once/rotation

· Shadow/assist brachytherapy procedures/planning when possible

· Shadow/assist SRS, SBRT procedures/planning when possible

Months 10-12

Monthly Student Intake Form
Months 10-12

Name:

Date:

Dept:

Month 10 Dosimeter Received: _____

Month 11 Dosimeter Received: _____

Month 12 Dosimeter Received: _____

Previous Experience:

Goals this month:

Expectations:

Months 10-12 Objectives:

- IMRT/VMAT Optimization
- Image Fusion and Registration
- Have a complete understanding on how Mosaiq is used in the clinical setting – accessing patient information
- Electron Planning
- Planning Directives – Treatment Planning Direction for physician?
- Planes of the body/directional terms
- DVH – How to assess dose to OARs
- Taking patient cases (with OK from Dosimetrist) – Contouring and Planning
- Re-Planning with help from Dosimetrist
- Emergency Cases
- Multiple Dose Levels (PTV High, PTV Mid, and PTV Low)
- Deformable Registration
- Isocenter Shifts

- Dosimetry student should be able to move throughout treatment planning process with direct supervision but minimal help from dosimetrist.

Student Deliverables:

· 2 Competencies/month
· Attend monthly machine QA once/rotation
· Shadow/assist brachytherapy procedures/planning when possible
· Shadow/assist SRS, SBRT procedures/planning when possible
· NYPC Observational Rotation
· Submitting to plans to insurance: 3D and IMRT
· Resume, Interview Workshop

NYPC

New York Proton Center

Student Intake Form – Observational Rotation

Student Name:

Date:

Dosimeter Badge Received: _____

Previous Experience:

Goals this rotation:

Expectation:

Onboarding:

- Clock in/out daily using Trajecsys (location = NYPC)
- Complete daily NYPC attestation
- Receive dosimeter badge
- Introduction to NYPC team

Objectives:

- Observe NYPC workflow and EMR system
- Categorize radiation treatment planning system
  - Proton Cyclotron
  - Components
  - Treatment Planning System
  - Methods of radiation production
  - Accessories
- Explain proton:
  - Properties
    Energy Deposition
    Bragg Peak advantage
  - Clinical applications and Treatment Planning
    Imaging Workflow
    Planning System Used
    Back-Up Planning?
    Registrations

Thank you NYPC Staff!

Appendix 3: Clinical Evaluation Form
To be entered via Trajecsys

Monthly Clinical Evaluation
To be entered into Trajecsys

Name:

Site:

YES/NO

1. Student consistently presents a neat and professional appearance and in required uniform to include film and student ID badges.
2. Does this student exhibit confidence in approaching new tasks?
3. Is this student generally helpful in assisting staff and patients?
4. Does student occasionally appear disoriented or inconsistent?
5. Does student generally display a logical "common sense" approach to performing required tasks?
6. Does student have difficulty focusing on required tasks?
7. Does this student follow instructions/directions and work well under pressure?
8. Is student's confidence level shaken after committing an error?
9. Does this student handle constructive criticism in a positive manner?
10. Does this student tend to rationalize, argue, blame others for, or deny their errors?
11. Is this student's professional behavior and clinical skills progressing in accordance with expectations?
12. Does student assist in keeping their assigned workplace neat and orderly?
13. Does this student generally demonstrate professional behavior and courtesy?
14. Does the student work well with others and volunteer to assist those in need?
15. Student actively seeks learning experiences and appears eager to demonstrate acquired knowledge.
16. Student generally anticipates what is required for each patient procedure and performs task(s)without prodding.

Instructors/Evaluators Comments Sheet: (Attach additional sheet if needed)
Please use this form if you wish to elaborate upon the student's strength and/or area, that you feel, need improvement based upon the content of this evaluation and overall student interactions.
For this evaluation period the student's overall performance has been:

Satisfactory_____ Unsatisfactory_____

Clinical Preceptor's Signature/Date: _____ Students Signature/Date: _____

Appendix 4: Journal Club Presentation Rubrics

Journal Club Presentation Rubric

Center for Radiation Sciences Education
Journal Club
Presentation Rubric

Student: _____ Literature Title: _____

Prompt: The purpose of this presentation is to research, understand, and share a piece of academic literature that relates to radiation therapy.
Journals: JAMA Oncology, Canada's Journal of Medical Imaging and Radiation Sciences, ASRT Publications: Radiologic Technology, Radiation Therapist, Scanner.
Length: 20 minute maximum

	A (100-90)	B (89-80)	C (79-70)	D (69-60)	F (Less than 60)	Total Points
Content Development, Sources, and Evidence	Demonstrates skillful use of high-quality, credible, relevant sources. Communicates, organizes, and synthesizes information from sources.	Demonstrates use of relevant sources. Inadequately communicates, organizes, and synthesizes information from sources.	Demonstrates an attempt to use sources. Communicates fragmented information so intended purpose is not fully achieved.	Demonstrates a weak attempt to use sources although incorrectly. Communicates incorrect information.	Uses sources inappropriately. Does not achieve intended purpose. Sources are misquoted, taken out of context, or incorrectly paraphrased.	
Organization	Organizational pattern is clearly and consistently observable, slides are clear and with appropriate amount of content making the presentation cohesive and appealing.	Organizational pattern is somewhat observable and presentation slides are generally clear.	Organizational pattern is intermittently observable and presentation slides present too much text.	Organizational pattern is weakly observable although hard to follow throughout the presentation, presentation slides are lacking content or overwhelming in amount of text.	Organizational pattern is not observable, slides are unclear and difficult to follow.	
Language	Language choices are imaginative, memorable, and compelling and enhance the effectiveness of the presentation.	Language choices are thoughtful and generally support the effectiveness of the presentation.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation.	Language choices are elementary and minimally support the effectiveness of the presentation.	Language choices are unclear and minimally support the effectiveness of the presentation.	
Growth	Central message is convincing and strongly supported, highlighting many aspects of student learning content.	Central message is consistent with the supporting material highlight some points of learning.	Central message can be deduced, but is not explicitly stated in the presentation. Unclear learning experiences.	Central message is weak and unclear. Key takeaways are misunderstood.	Central message is unclear and unorganized. Lacking content learned.	
Speech	Demonstrates high-quality speaking performance in clear tone and organization. Presentation is engaging and holds strong eye contact throughout.	Demonstrates generally clear tone and organization. Presentation is generally engaging and eye contact is present.	Speaking performance is moderate, lacking eye contact and clear tone.	Speech is rushed or challenging to follow.	Speaking performance is poor, lacking eye contact and clear tone.	

Appendix 5: Grand Rounds Rubrics

Center for Radiation Sciences Education
Journal Club
Presentation Rubric

Student: _____ Literature Title: _____

Prompt: The purpose of this presentation is to research, understand, and share a piece of academic literature that relates to radiation therapy or medical dosimetry.
Journals: JAMA Oncology, Canada's Journal of Medical Imaging and Radiation Sciences, AAMD, ASRT Publications: Radiologic Technology, Radiation Therapist, Scanner or the International Journal of Radiation Oncology - Biology - Physics (IJROBP), known in the field as the Red Journal.
Length: 20 minutes maximum

	A (100-90)	**B (89-80)**	**C (79-70)**	**D (69-60)**	**F (Less than 60)**	**Total Points**
Content Development, Sources, and Evidence	Demonstrates skillful use of high-quality, credible, relevant sources. Communicates, organizes, and synthesizes information from sources.	Demonstrates use of relevant sources. Inadequately communicates, organizes, and synthesizes information from sources.	Demonstrates an attempt to use sources. Communicates fragmented information so intended purpose is not fully achieved.	Demonstrates a weak attempt to use sources although incorrectly. Communicates incorrect information.	Uses sources inappropriately. Does not achieve intended purpose. Sources are misquoted, taken out of context, or incorrectly paraphrased.	
Organization	Organizational pattern is clearly and consistently observable, slides are clear and with appropriate amount of content making the presentation cohesive and appealing.	Organizational pattern is somewhat observable and presentation slides are generally clear.	Organizational pattern is intermittently observable and presentation slides present too much text.	Organizational pattern is weakly observable although hard to follow throughout the presentation, presentation slides are lacking content or overwhelming in amount of text.	Organizational pattern is not observable, slides are unclear and difficult to follow.	
Language	Language choices are imaginative, memorable, and compelling and enhance the effectiveness of the presentation.	Language choices are thoughtful and generally support the effectiveness of the presentation.	Language choices are mundane and commonplace and partially support the effectiveness of the presentation.	Language choices are elementary and minimally support the effectiveness of the presentation.	Language choices are unclear and minimally support the effectiveness of the presentation.	
Growth	Central message is convincing and strongly supported, highlighting many aspects of student learning content.	Central message is consistent with the supporting material highlight some points of learning.	Central message can be deduced, but is not explicitly stated in the presentation. Unclear learning experiences.	Central message is weak and unclear. Key takeaways are misunderstood.	Central message is unclear and unorganized. Lacking content learned.	
Speech	Demonstrates high-quality speaking performance in clear tone and organization. Presentation is engaging and holds strong eye contact throughout.	Demonstrates generally clear tone and organization. Presentation is generally engaging and eye contact is present.	Speaking performance is moderate, lacking eye contact and clear tone.	Speech is rushed or challenging to follow.	Speaking performance is poor, lacking eye contact and clear tone.	

Appendix 6: MD Rotation Rubric

Specialty Rotation Reflective Journal
MD Rotation

Student: _____ Topic: _____

Prompt: See student handbook
Length: 4 pages double spaced
Format: APA
Due: 1 week post completion of MD special rotation

	A (100-90)	B (89-80)	C (79-70)	D (69-60)	F (Less than 60)	Total Points
Content Development, Sources, and Evidence	Demonstrates skillful use of high-quality, credible, relevant sources. Communicates, organizes, and synthesizes information from sources.	Demonstrates use of relevant sources. Inadequately communicates, organizes, and synthesizes information from sources.	Demonstrates an attempt to use sources. Communicates fragmented information so intended purpose is not fully achieved.	Demonstrates a weak attempt to use sources although incorrectly. Communicates incorrect information.	Uses sources inappropriately. Does not achieve intended purpose. Sources are misquoted, taken out of context, or incorrectly paraphrased.	
Organization	Organizational pattern (specific introduction and conclusion, and sequenced material within the paper) is clearly and consistently observable and makes the content of the paper cohesive.	Organizational pattern is somewhat observable within the paper.	Organizational pattern is intermittently observable within the paper.	Organizational pattern is weakly observable although hard to follow throughout the paper.	Organizational pattern is not observable within the paper.	
Language	Language choices are imaginative, memorable, and compelling and enhance the effectiveness of the paper.	Language choices are thoughtful and generally support the effectiveness of the paper.	Language choices are mundane and commonplace and partially support the effectiveness of the paper.	Language choices are elementary and minimally support the effectiveness of the paper.	Language choices are unclear and minimally support the effectiveness of the paper.	
Growth	Central message is convincing and strongly supported, highlighting many aspects of student learning content.	Central message is consistent with the supporting material highlight some points of learning.	Central message can be deduced, but is not explicitly stated in the presentation. Unclear learning experiences.	Central message is weak and unclear. Key takeaways are misunderstood.	Central message is unclear and unorganized. Lacking content learned.	
Errors	Paper is error free.	Paper includes minor errors.	Paper presents errors throughout.	Paper has significant errors.	Paper presents with substantial errors which make the content hard to follow.	

Appendix 7: Medical Dosimetry Program Required Competencies

Radiation Treatment Procedure	Date Completed	Verified by Preceptor's Signature
HEAD AND NECK		
Primary Brain (3D Conformal or VMAT/IMRT)		
Primary Head and Neck VMAT/IMRT		
THORACIC		
Lung		
Esophagus		
Intact Breast Tangentials		
Chest Wall Tangentials w/ Supraclavicular and Axilla Fields		
ABDOMEN		
3 or 4 Field Abdomen (VMAT/IMRT)		
Para-aortic or Nodal Irradiation		
PELVIS		
3 Field Pelvis with Wedges		
4 Field Pelvis		
Prostate		
Limb Melanoma/Sarcoma		
Brachytherapy		
Interstitial Implant		
Intracavitary HDR		
Other		
Craniospinal Irradiation		
Palliative (Brain/Spine)		
Lymphoma/Mantle		
Electron Beam Planning		
Fusion (MRI/PET)		
Re-Irradiation or Composite Planning		
Simultaneous Integrated Boost (SIB)		
Stereotactic Body Radiation Therapy (SBRT)		
Additional Recommended Activities		
TBI*		
Brachytherapy HDR Procedure*		
Proton Treatment Planning*		
Stereotactic Radiosurgery*		

Anus/Vulva Conventional 3D Technique		

Observational Simulation Procedures (to be submitted via Trajecsys)			
	Date Completed	**Patient ID#**	**Instructor(s) Verification**
Brain			
Breast			
Head and Neck			
Thorax			
Extremity			
Pelvis			

Appendix 8: Competency Form

MEDICAL DOSIMETRY
TREATMENT PLANNING COMPETENCY FORM

Student Name: _____

Treatment Plan for:_____

Evaluator(s): _____

Once competency is submitted for evaluation, please notify the program office.

Date of Submission	
Date Graded	
Date Reviewed with Student	
Date of Presentation	

Please mark each task as P (pass), F (fail), or NA (not applicable). Please indicate at the bottom of the page whether the competency as a whole is a Pass or Fail. **The competency is a Fail if the pla is not treatable or unacceptable for treatment or has an error that makes a significant differenc in the distribution as calculated by the treatment planning computer.**

Major Tasks: Failure on any major task constitutes competency failure.	**Pass**	**Fail**	**NA**	**Comments**
Prescription				
Isocenter/calc point placement				
Tumor volume coverage				
Hot spot distribution				
Block/MLC placement/margin				
Beam angles/placement				
Structures identified/outlined				
Organs at risk dose				
Intensity modulation devices (wedges, compensators, FIF, bolus)				
Dose engine				
Heterogeneous/Homogenous setting				
Planning time (within 16 hours for 3d, 24 for IMRT)				
Record and verify (Mosaiq, Aria, etc)				
Software Use: Software errors that cause a major shift in the distribution may be competency failure; other minor errors reduce competency grade.	**Pass**	**Fail**	**NA**	**Comment**
Image transfer/fusion				
Couch				
Dose grid				

Minor Tasks: Failure on any minor task reduces competency grade	**Pass**	**Fail**	**NA**	**Comment**
Printing				
Minor contours				
Paper chart				
Hand calculations				
Electronic secondary calculations (Diamond, RadCalc, etc)				
Observe simulation				
Observe patient treatment				

Therapist initials/date

_____

_____

PASS ☐ **FAIL** ☐

Additional Comments:

Student Signature:_____

Clinical Evaluator Signature:_____

Appendix 9: 2023 Student Orientation Handbook School of Health Profession's Health Science. https://healthprofessions.stonybrookmedicine.edu/programs/hs/about/information/seniors

Stony Brook
School *of* Health Professions

2023 STUDENT ORIENTATION HANDBOOK
SCHOOL OF HEALTH PROFESSIONS

Academic Policies and Procedures, Rules and Regulations

Including
(in the order in which they appear)

I. School of Health Professions Mission and Vision Statement

II. School of Health Professions Policies and Procedures
A. Academic Standing
B. Academic Dishonesty
C. Grievance
D. Independent Study and Readings
E. Course Waiver
F. Challenge Exam

III. Dean's Memorandum on Uniform Regulations, Miscellaneous Rules and Points of Information

IV. Student Responsibilities for Clinical Education

V. Student Accessibility Statement

VI. School Statement on Diversity, Equity and Inclusion

VII. Policies on Non-Discrimination and Sexual Harassment- Please see the following website: http://medicine.stonybrookmedicine.edu/ugme/mistreatment_policy

VIII. Student Participation on School Committees

Certificate Programs
(Anesthesia Technology, Medical Dosimetry, Radiation Therapy, Radiologic Technology, Paramedic)

Appendix 10: Mount Sinai Info Sheets

Mount Sinai Hospital Info Sheet
Hess – 1470 Madison Ave SC Level
1184 – 184 5th Ave MC Level

Dosimetry Clinical Preceptor:
Alan Yu: 212-241-4968

Physics
1184 Physics General Number x41722 (212-241-1722)
HESS Physics Number x59490 (212-824-9490)
Ming Chao: 212-824-9478
Thomas Chum: 212-241-7768
Tian Liu: 212-241-7764
Vicky Qu: 212-241-5697
Rendi Sheu: 212-241-9074
Junyi Xia: 212-824-9476

Attending Radiation Oncologist:
Dr. Bakst – HN, Breast, TBI
Dr. Buckstein – Liver, GI
Dr. Dharmarajan – Palliative
Dr. Goodman – Assoc Director Tisch Cancer Institute, GI
Dr. Green – Breast
Dr. Lazarev – Various
Dr. Rosenzweig – Systems Chair, Lung
Dr. Samstein – Precision Immunology Institute, Brain/Lung
Dr. Salgado – Palliative/HN
Dr. Stock – Prostate

Machines: 1184
21EX: x40228
TrueBeam3: x45233
21iX: x45765
CT SIM: x45224

Machines: Hess
TrueBeam1: x59488
TrueBeam2: x59486
CT SIM: x594952

Therapy:
Maria Dimopoulos: 646-951-7969
Danielle McDonagh: 347-587-9541
Keith Edwards: x59484
Cindy Vavasis: x48911

Dosimetry:
Vishruta Dumane: 917-596-1098
Victoria Olsen: 917-846-2631

Mount Sinai West Info Sheet
1000 10th Ave: Lower Level

Dosimetry Clinical Preceptor:
Ching-ling Teng: 212-523-5330

Dosimetrists
Helen Chen: 212-523-7518

Attending Radiation Oncologist:
Dr. Dutta – All
Dr. Gliedman – Prostate/Breast/Brain/SRS
Dr. Nehlsen – All
Dr. Rosenzweig – Lung
Dr. Saitta – GYN/Breast
Dr. Stewart – Prostate

Physics:
Edward Sudentas: 212-523-7437
Ching-Ling Teng: 212-523-5330
Luke Fu: 212-523-8056

Machines: 1184
TrueBeam: x364640
IX: x364691
CT SIM: x368838

Therapy:
Maria Dimopoulos: 646-951-7969
Danielle McDonagh: 347-587-9541
Natosha Houston: 212-523-6898

Dosimetry:
Vishruta Dumane: 917-596-1098
Victoria Olsen: 917-846-2631

Mount Sinai Downtown: Union Square Info Sheet
10 Union Square East: Lower Level

Dosimetry Clinical Preceptor:
Si Ning Chen: x446249

Dosimetrists
Niral Shah: x446249
Cyril Tai: x446249

Attending Radiation Oncologist:
Dr. Chadha – Breast
Dr. Liu – HN
Dr. Stewart – Prostate/HN
Dr. Gupta – SBRT Lung
Dr. Rosenzweig – Lung
Dr. Choi – Pelvis/Anal

Physics:
Chang Seon Kim: x448096
Nadia Vassell: x251791
Ahmad Amoush: x448040
Yong Hum Na: x448639

Machines: 1184
TrueBeam: x446091
IX: x448031
CT SIM: x448085

Therapy:
Maria Dimopoulos: 646-951-7969
Danielle McDonagh: 347-587-9541
Tuan Tran – Lead Therapist: x448031

Dosimetry:
Vishruta Dumane: 917-596-1098
Victoria Olsen: 917-846-2631

Mount Sinai Chelsea Info Sheet
The Blavatnik Family Chelsea Medical Center at Mount Sinai
325 West 15th St

Dosimetry Clinical Preceptor:
Si Ning Chen: x446249

Dosimetrists
Niral Shah: x446249
Cyril Tai: x446249

Attending Radiation Oncologist:
Dr. Gupta – GYN
Dr. Chadha – Breast
Dr. Saitta – GYN/Breast

Physics:
Chang Seon Kim: x448096
Nadia Vassell: x251791
Ahmad Amoush: x448040
Yong Hum Na: x448639

Machines: 1184
EX:
TrueBeam
CT SIM

Therapy:
Maria Dimopoulos: 646-951-7969
Danielle McDonagh: 347-587-9541
Denise Kraemer: 212-367-1796
Katherine Gelpi – Lead RTT: x448031

Dosimetry:
Vishruta Dumane: 917-596-1098
Victoria Olsen: 917-846-2631

Mount Sinai
Stony Brook Medicine

Preceptor	Spiro Kartsonis, DABR Spiro.Kartsonis@mountsinai.org T:516-445-0764
Dosimetrist	Inna Veksman **Inna.Veksman@mountsinai.org**
Shifts	9-5 pm
Chart Rounds	

Mount Sinai Queens

23-22 30th Ave.
Astoria, NY 11102
LL Level

Attending Radiation Oncologists:
Dr. Resende-Salgado – Breast. Prostate, GYN, Palliative
Dr. Saitta- Breast and other various sites (Th)
Dr. Lazarev- CNS and other various sites

Machines:
MLC 120:

- **LL Rad Onc treatment machines**

Center for Radiation Sciences Education

Maria Dimopoulos: 646 – 951 – 7969

Vishruta Dumane: 917 – 596 – 1098

Danielle McDonagh: 347 – 587 – 9541

New York Proton Center Info Sheet
225 East 126th Street

Dosimetry Clinical Preceptor:
Andy Shim: 646-968-9034 / ashim@nyproton.com

Dosimetrist:

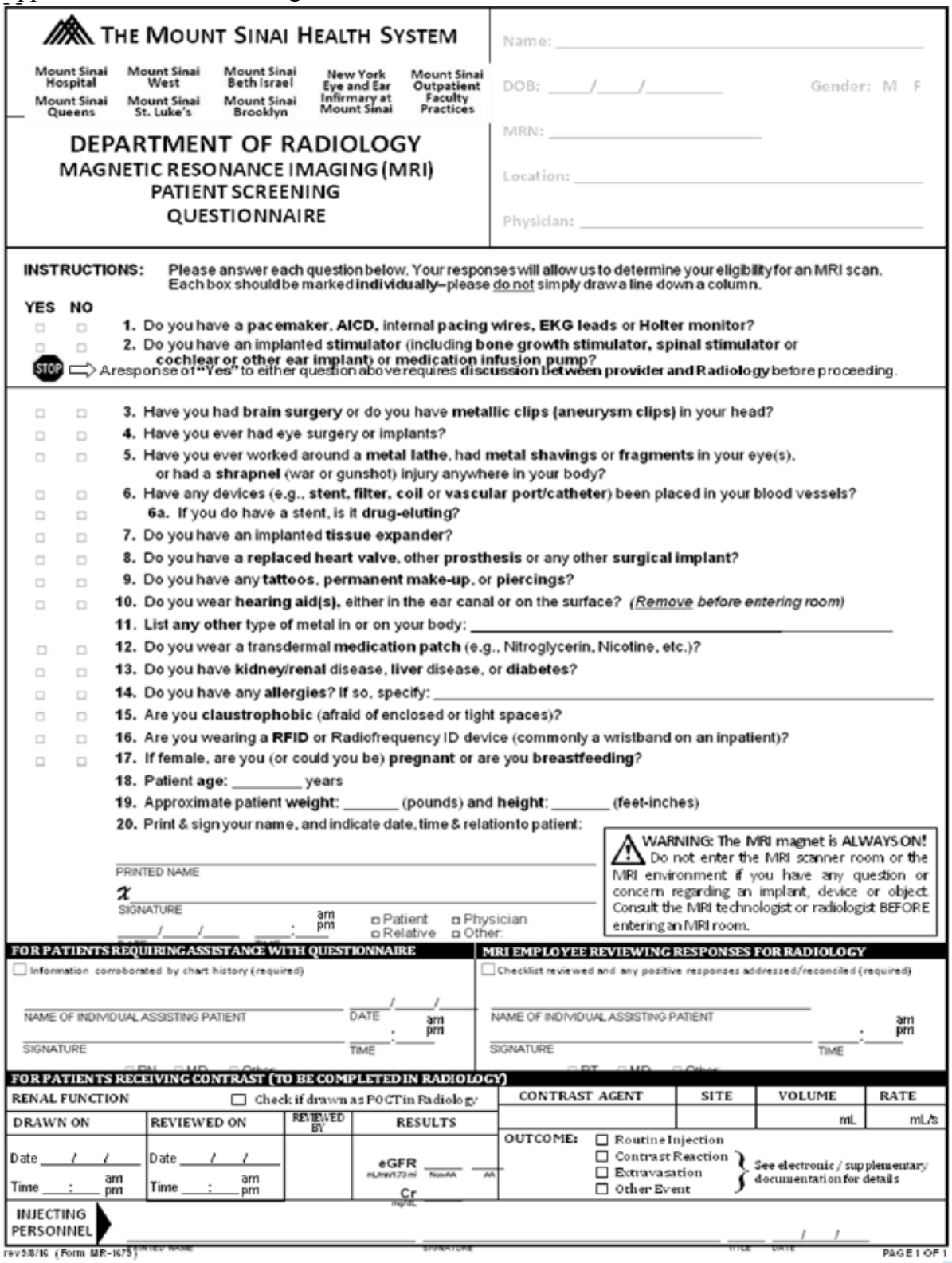
Attending Radiation Oncologist:
Dr. Charles Simone, Chief Medical Officer
Dr. Isabella Choi, Clinical Director/Director of Research
Dr. Arpit Chhabra, Director of Education
Dr. Shaakir Hasan, GU
Dr. Robert Press, HN

Therapy:
Anh Kha – Supervisor
Andrew Okhuereigbe – Lead RTT
Donny Longo – Lead RTT

Machines:
Machine 1: Peds Anesthesia – CSI, HN, GI, GU
Machine 2: Vision/Align RT – SBRT, CSI, HN, Brain, GI, GU
Machine 3: SDX – SBRT, CSI, HN, Brain, GI, GU
Machine 4: Fixed Beam – Brain, HN, Prostate, Pelvis

Facilities:
Parking Info – Open, free parking lot connected to NYPC building on E 126th Street

Appendix 11: MRI Screening Form



THE MOUNT SINAI HEALTH SYSTEM

Mount Sinai Hospital | Mount Sinai West | Mount Sinai Beth Israel | New York Eye and Ear Infirmary at Mount Sinai | Mount Sinai Outpatient Faculty Practices
Mount Sinai Queens | Mount Sinai St. Luke's | Mount Sinai Brooklyn

Name: _____
DOB: ____/____/_____ Gender: M F
MRN: _____
Location: _____
Physician: _____

DEPARTMENT OF RADIOLOGY
MAGNETIC RESONANCE IMAGING (MRI)
PATIENT SCREENING
QUESTIONNAIRE

INSTRUCTIONS: Please answer each question below. Your responses will allow us to determine your eligibility for an MRI scan. Each box should be marked **individually**–please do not simply draw a line down a column.

YES NO

1. Do you have a **pacemaker**, **AICD**, internal **pacing wires**, **EKG leads** or **Holter monitor**?
2. Do you have an implanted **stimulator** (including **bone growth stimulator**, **spinal stimulator** or **cochlear or other ear implant**) or **medication infusion pump**?

STOP ⇨ A response of "**Yes**" to either question above requires **discussion between provider and Radiology** before proceeding.

3. Have you had **brain surgery** or do you have **metallic clips (aneurysm clips)** in your head?
4. Have you ever had eye surgery or implants?
5. Have you ever worked around a **metal lathe**, had **metal shavings** or **fragments** in your eye(s), or had a **shrapnel** (war or gunshot) injury anywhere in your body?
6. Have any devices (e.g., **stent**, **filter**, **coil** or **vascular port/catheter**) been placed in your blood vessels?
   - **6a.** If you do have a stent, is it **drug-eluting**?
7. Do you have an implanted **tissue expander**?
8. Do you have a **replaced heart valve**, other **prosthesis** or any other **surgical implant**?
9. Do you have any **tattoos**, **permanent make-up**, or **piercings**?
10. Do you wear **hearing aid(s)**, either in the ear canal or on the surface? (*Remove before entering room*)
11. List **any other** type of metal in or on your body: _____
12. Do you wear a transdermal **medication patch** (e.g., Nitroglycerin, Nicotine, etc.)?
13. Do you have **kidney/renal** disease, **liver** disease, or **diabetes**?
14. Do you have any **allergies**? If so, specify: _____
15. Are you **claustrophobic** (afraid of enclosed or tight spaces)?
16. Are you wearing a **RFID** or Radiofrequency ID device (commonly a wristband on an inpatient)?
17. If female, are you (or could you be) **pregnant** or are you **breastfeeding**?
18. **Patient age:** _____ years
19. Approximate patient **weight:** _____ (pounds) and **height:** _____ (feet-inches)
20. Print & sign your name, and indicate date, time & relation to patient:

PRINTED NAME
X SIGNATURE
____/____/____ ____:____ am pm ☐ Patient ☐ Physician ☐ Relative ☐ Other:

WARNING: The MRI magnet is ALWAYS ON! Do not enter the MRI scanner room or the MRI environment if you have any question or concern regarding an implant, device or object. Consult the MRI technologist or radiologist BEFORE entering an MRI room.

FOR PATIENTS REQUIRING ASSISTANCE WITH QUESTIONNAIRE
☐ Information corroborated by chart history (required)
NAME OF INDIVIDUAL ASSISTING PATIENT ____/____/____ DATE
SIGNATURE ____:____ am pm TIME
☐ RN ☐ MD ☐ Other

MRI EMPLOYEE REVIEWING RESPONSES FOR RADIOLOGY
☐ Checklist reviewed and any positive responses addressed/reconciled (required)
NAME OF INDIVIDUAL ASSISTING PATIENT
SIGNATURE ____:____ am pm TIME
☐ RT ☐ MD ☐ Other

FOR PATIENTS RECEIVING CONTRAST (TO BE COMPLETED IN RADIOLOGY)

RENAL FUNCTION ☐ Check if drawn as POCT in Radiology

DRAWN ON	REVIEWED ON	REVIEWED BY	RESULTS
Date ____/____/____ Time ____:____ am pm	Date ____/____/____ Time ____:____ am pm		eGFR mL/min/1.73 m² Non-AA ____ AA ____ Cr mg/dL ____

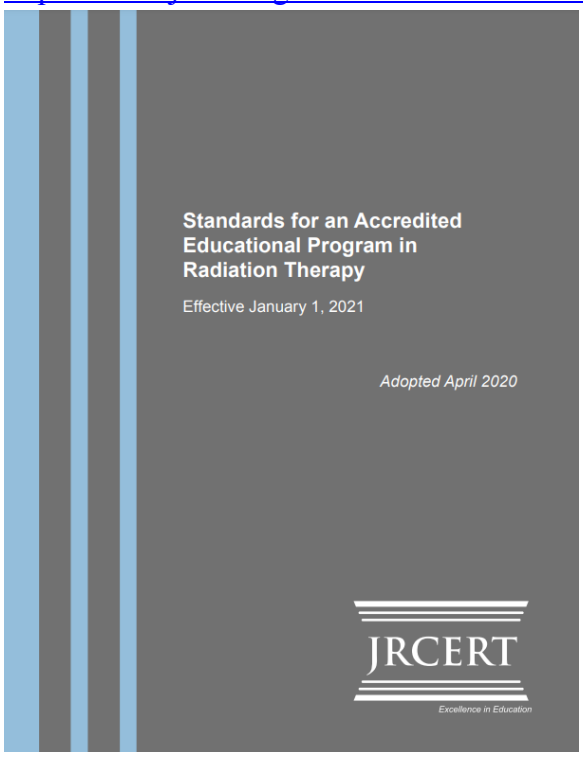
CONTRAST AGENT	SITE	VOLUME	RATE
		mL	mL/s

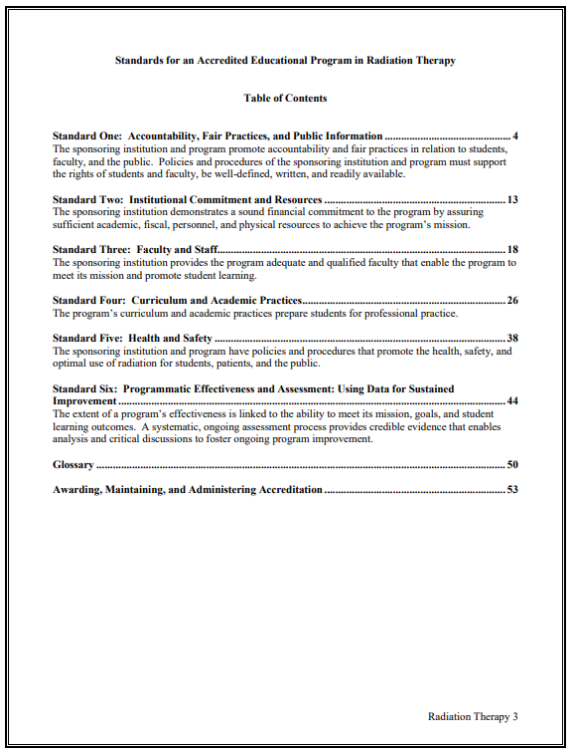
OUTCOME: ☐ Routine Injection ☐ Contrast Reaction ☐ Extravasation ☐ Other Event — See electronic / supplementary documentation for details

INJECTING PERSONNEL _____ _____ _____ ____/____/____
PRINTED NAME SIGNATURE TITLE DATE

rev5/8/16 (Form MR-1675) PAGE 1 OF 1

Appendix 11: JRCERT Standards
https://www.jrcert.org/accreditation-information/accreditation-standards-2021/

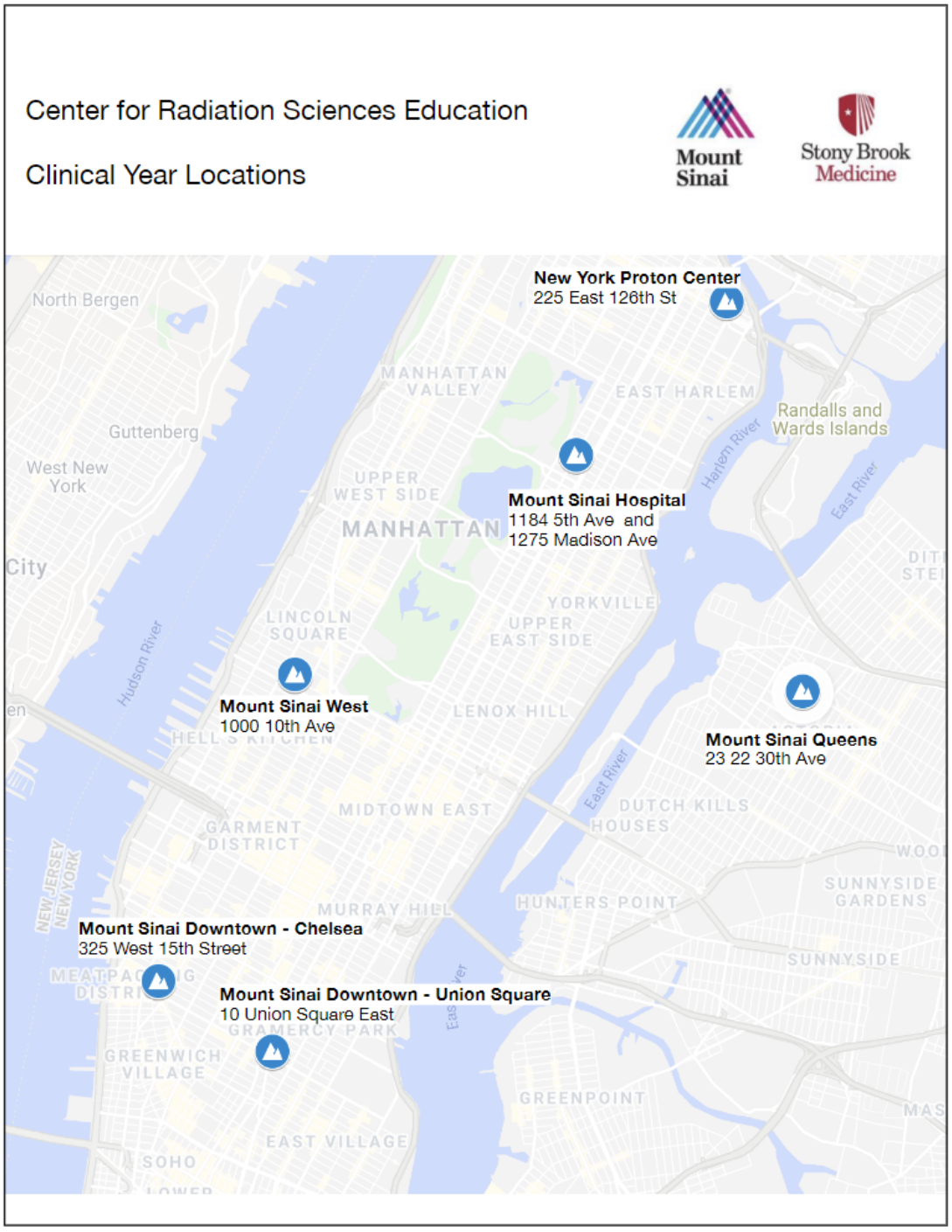




Standards for an Accredited Educational Program in Radiation Therapy

Table of Contents

Appendix 12: Clinical Year Locations



Appendix 13: Medical Dosimetry Student Policy and Procedure

THE MOUNT SINAI HEALTH SYSTEM, NEW YORK STANDARD: POLICY AND PROCEDURE	SUBJECT NO. RO 4.63
DEPARTMENT: Mount Sinai Health System Department of Radiation Oncology SUBJECT: **Medical Dosimetry Students**	

Original date of issue: March 15, 2023

Reviewed:	SS 3/23					
Revised:						

Policy

The department of Radiation Oncology participates in the clinical instruction and education of students in Medical Dosimetry.

Purpose

All students enrolled in the Center for Radiation Sciences Education Medical Dosimetry Program at Stony Brook University are required to be under DIRECT SUPERVISION by a medical dosimetrist/physicist employed by Mount Sinai Health System. Direct supervision for treatment planning procedures is defined as reviewing and approving all work done by the student including but not limited to importing patient data; contouring; image fusion; treatment planning; secondary dose calculations; creation of QA/verification plan; and exportation and approval of items in MOSAIQ. Additionally, students involved in patient contact procedures require DIRECT SUPERVISION by a credentialed practitioner (e.g., radiation oncologist, physicist, nurse practitioner, nurse, physician assistant, radiation therapist) who is physically present, reviews the procedure with the student, evaluates the condition of the patient, and approves and/or delivers the procedure. Patient contact procedures include but are not limited to simulation, treatment, brachytherapy and physician observations.

Procedure

1. All students are required to follow the rules outlined in their Medical Dosimetry Program Student Handbook.

2. All students will be orientated through the Mount Sinai Health System's New Beginnings Program and expected to understand the institution's mission, vision, and values and all departmental policies and procedures.

Appendix 13 cont.

3. Prior to sending the physician a patient's plan to review, all aspects of the plan must be reviewed and approved by a medical dosimetrist/physicist in Treatment Planning Systems.

4. After thorough review, a students' work must be electronically approved in MOSAIQ by the staff medical dosimetrist/physicist responsible for the plan.
    A. The plan approval PDF must be approved by medical dosimetrist/physicist
    B. If a treatment field is approved by a student, a medical dosimetrist/physicist must re-approve the student's approval with their own initials for approval of fields (i.e., re-approve the fields)
    C. If a site setup is approved by a student, a medical dosimetrist/physicist must re-approve their approval with their own initials for approval of site setup
    D. A student's name is permitted on secondary calculation documents (e.g., Rad Calc, MU Calc Document) if a staff medical dosimetrist/physicist has verified the calculation is correct and signs the Plan Approval PDF (bullet point A)

5. All aspects of a patient's treatment plan in MOSAIQ must be reviewed by staff medical dosimetrist/physicist including:
    A. Dose action points
    B. Digitally reconstructed radiographs (DRRs)
    C. Dose constraints
    D. SBRT special consults
    E. Bolus
    F. Setup notes
    G. Plan Documents
    H. Site Setup

6. A student is only permitted to initiate email correspondence with physicians regarding patient plans once they've successfully progressed through 4 months of clinical internship, completed a Professional Interactions mini course, and earned a 90% or higher on a Communications Study Unit. The Center for Radiation Sciences Education staff will communicate these achievements with clinical preceptors once students are approved to initiate email correspondence with physicians.

7. Students are required to participate clinically and demonstrate proficiency in the planning of patients following the required curriculum of their educational program. Hallmarks of radiation oncology and planning techniques are taught in the following courses:
    A. Stony Brook University senior year
        i. HAN 395: Radiation Physics in Medicine
        ii. HAN 482: Radiation Pathology
        iii. HAN 487: Introduction to Treatment Planning

Appendix 13 cont.

iv. HAN 492: Radiation Oncology/Medical Physics II

B. Mount Sinai Radiation Oncology clinical year mini courses
   i. Optimization in Eclipse - A Discussion of Strategies
   ii. Planning for Every Patient
   iii. Breast Planning
   iv. Using TrueBeam Advanced Imaging and Gating to Facilitate a More Targeted Delivery

8. The clinical preceptor and departmental supervisor will evaluate the student for clinical and technical competency and report any concerns to the education team (i.e., Associate Director, Program Director and Assistant Program Director). Remediation plans will be communicated with the dosimetry and physics leadership teams in each respective location.
   A. Clinical preceptors are defined as per Joint Review Committee on Education in Radiologic Technology (JRCERT) as:
      i. Proficient in supervision, instruction and evaluation
      ii. Documenting two years' clinical experience in the professional discipline
      iii. Holding current Medical Dosimetrist Certification Board (MDCB) certification or equivalent
         1. Equivalent qualifications are certification by the American Board of Medical Physics (ABMP) as a medical physicist. Appropriate credentials, other than MDCB, American Board of Radiology (ABR), or ABMP certification and/or registration, may be used for qualified healthcare professionals supervising students in specialty areas (e.g., radiation oncologist or a registered radiation therapist supervising students' observation of therapeutic procedures)