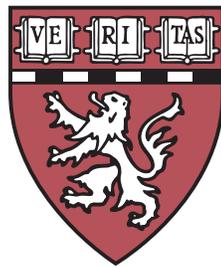


Harvard Medical Physics Residency Program



Handbook

A LETTER FROM THE RESIDENCY PROGRAM DIRECTORS

Dear Resident:

We would like to welcome you to the Harvard Medical Physics Residency Program. This program brings together the medical physics programs at the three major Harvard teaching hospitals: Beth Israel Deaconess Medical Center (BIDMC), Brigham and Women's Hospital (BWH) and Massachusetts General Hospital (MGH). Each has had a long history, tradition, and many achievements, and the fusion brings together these strengths. We have sought to maintain the unique characteristics of three programs while at the same time creating a sense of unity and camaraderie among the residents through a combined curriculum and through joint academic and social events.

The educational philosophy of the Harvard Medical Physics Residency Program can be broken down into four principles:

1. To provide comprehensive clinical education using the technical resources and specialist faculty available at the MGH and Longwood campus (BIDMC and BWH)
2. To provide training in medical physics that goes beyond the requirements of the board exam
3. To develop clinical, translational and/or basic science research skills through a research year
4. To develop future leaders in academic medical physics through this clinical training, research opportunities, and graded responsibility within the program.

Our goal is to provide a clinical training to enable the medical resident to practice independently as a medical physicist and pass the ABR board exam and to educate the next generation of world-class medical physicists-scientists and leaders. We are proud of the training program we offer, and we hope you will consider our program for the next step in your training.

The resources of the three teaching hospitals, together with the talents of our faculty are, we believe, an unparalleled resource. They will provide you with an opportunity to build a strong foundation in both academic and clinical medical physics.

This Handbook has been assembled to serve as an outline of the expectations of the program, to provide you with an overview of our policies and procedures and general information to assist you in your training and development. If you have questions that are not answered here or you believe additional information would be helpful, please let us know.

Sincerely,

Yulia Lyatskaya, Ph.D.
Program Director, BWH
Assistant Professor, Harvard Medical School

Brian Winey, Ph.D.
Associate Program Director, MGH
Assistant Professor, Harvard Medical School

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POLICIES AND PROCEDURES

Goals by Year of Residency

Didactic Courses

We offer CAMPEP accredited courses and encourage all residents to take them.

- Residents with a non-CAMPEP accredited PhD can fulfill all of the required didactic requirements within our residency program.
- Residents with a CAMPEP accredited PhD are asked to take the core courses (Physics I and Physics II) but may opt out of the other courses.
- Residents who have completed CAMPEP accredited courses in their postdoctoral years may opt out of the equivalent courses within our program.

First year: Research

The first year is devoted to research. After written confirmation of the results of the Match, the resident is sent a list of research projects available at BWH or MGH from which to choose. These projects are chosen by the faculty to have a high probability of being completed within the first year. The goal of the research year is to prepare an abstract for the annual AAPM meeting and have the research work completed and a draft manuscript ready by the end of June. Each project is overseen by a mentor who will monitor the progress of the resident throughout the year, primarily through one-on-one or group meetings, if more than one researcher is involved. The mentor will file a report on the resident's progress on a quarterly basis to the program director.

Most didactic courses will be taken during the research year. The residents will meet with the program director on a monthly basis and prepare a report of their research and didactic activities.

Second Year: Clinical Year One

At the start of the clinical year, the resident will undergo a one-week orientation to the clinic. This orientation will include: (i) an overview of the physicist's responsibilities in the clinic; (ii) review of personal conduct issues; (iii) introduction to the patient data management system; (iv) overview of the simulation and treatment process; (v) observation of CT simulations and patient treatments; (vi) review of the clinical conferences that must be attended.

After the orientation, the resident will begin training on clinical modules. A timetable is presented to the resident at the start of the clinical training that outlines the time spent on each module over the two-year training period. It also shows that the residents rotate between MGH and Longwood every six months.¹ The timetable also outlines the amount of time to be spent on the learning process in each module. These times are meant to be only approximate. The first-year clinical modules are treatment equipment,

¹ Note that here and in later references, for the second year residents (first clinical year) the first rotation extends to January 31.

treatment planning, dosimetry and radiation safety. At the beginning of the training, the resident will spend most of the time reading material relevant to the module and interacting with the mentors on each module. After the completion of the reading period, the resident will begin to observe processes and start training in treatment planning. These processes will include IMRT QA, monthly mechanical checks and monthly output checks on the linear accelerators, simulator, OBI and CT checks as well as checks on other devices. After a period of observation, the resident will be able to perform these tasks under supervision. It is expected that by the end of the first six months' rotation, the resident will be able to perform these tasks solo. They will also participate, when the occasion arises, in annual checks on the linear accelerators and any patient-specific treatment dosimetry. Also, at the end of the first rotation, the resident should be able to perform treatment planning in one or two defined areas, which treatment sites depending on whether the training is at Longwood or MGH.

After six months¹, each resident will rotate to the other campus and will have a one-week orientation to a new clinic. The first few weeks will be devoted to further reading and training. The reason for this is that the MGH and Longwood have different treatment planning systems, different record and verify systems and, different linear accelerators. Moreover, the methodologies for various procedures are different for the two campuses. However, for the remainder of the first year, the resident will concentrate solely on the same four modules. At the end of the first training year, the resident is expected to be fully proficient in IMRT QA, all monthly linear accelerator checks, fully understand dosimetry protocols and how they are applied and radiation safety. The resident should also be able to perform annual linear accelerator checks. The resident should also be able to plan patients for all disease sites using 3D treatment planning.

Third Year: Clinical Year Two

In the second year of clinical training, the resident will start the remaining modules, including brachytherapy, stereotactic planning, imaging and informatics, protons and outreach. Education and professional experience will play a greater role in the last quarter of the resident's clinical training. The proton module lasts two months, and the resident will be full-time in the proton clinic during this rotation. The outreach module will consist of the resident staying one month at one of the affiliated clinics of the MGH/BWH system. The purpose of this module is to give the resident experience as a solo physicist in a small clinic. By the end of the 24-month clinical training, the residents will be expected to be competent in all aspects of medical physics as well as knowledgeable about and experienced with multiple treatment planning systems, linear accelerators, and two different types of record and verify system. The resident is expected to complete the clinical training and subsequently be able to function fully in a clinic from the first day.

In addition to the clinical training, the resident is expected to produce four reports per clinical rotation. The nature of this report can vary from a brief written report to a PowerPoint presentation but should include at least one (but no more than two) oral presentation, such as journal club. At the conclusion of the residency, the resident will have completed at least 16 reports.

Educational conferences and seminars

In addition to the research, didactic course and clinical rotation requirements, the residents are expected to attend clinical conferences, seminars, lectures, meetings that are relevant to their training and contribute to their continuing education, and present at journal clubs and departmental physics seminars. The resident is expected to attend at least 80% of the seminars listed below during the clinical years and

attendance should be recorded in the resident's monthly report. Each resident is also required to attend three workshops on ethics or professionalism per year. These should be documented in the monthly reports.

BIDMC

Chart rounds: Friday 8:00-9:00 am, radiation oncology conference room

BWH

Medical physics weekly seminar: Friday, 9:00-10:00 am, CWN conference room

Clinical physics in-service: Bimonthly, Wednesday, 10:00 am -11:00 am

INTRO/Research Showcase/Ethics Rounds: Thursdays 12 – 1 pm, various locations

New case conference: Monday 12:00-1:00 pm, CWN conference room

Brachytherapy chart rounds: Every other Wednesday, 8:00-9:00 am, CWN conference room[^]

Summer lecture series: Every day, 8:00-9:00 am, CWN conference room, July through August*

Morning conference: Every day except Wednesday, 8:00-9:00 am, CWN conference room**

MGH

Chart rounds: Tuesday, 8:00-9:00 am, (site-specific discussions in multiple locations)

Physics seminars: Tuesday, 12 noon-1:00 pm, Goitein conference room

Physics journal club: Thursday, 9:30-10:00 am, Goitein conference room

MGH Cancer Center Grand Rounds: Thursday, 12 noon to 1:00 pm, Simches 3110, October through May

Summer lecture series: Every day, 8:00-9:00 am, Stoneman conference room, July through August*

Case presentation conferences: Every morning except Tuesdays and Wednesdays, 8:00-9:00 am, Stoneman conf. room**

* Residents should attend the summer series once during their residency training

[^] Residents are only required to attend during their brachytherapy rotation

** Residents are not required to attend 80% of morning and case presentation conferences. They are encouraged to attend and should log attendance in their monthly reports.

Mentoring

A mentor for each clinical module is assigned at each hospital. It is the responsibility of the mentors to assign reading material appropriate to the module to the resident and to meet with the resident to discuss what the resident has learned from the material. The mentor will also provide practical training for the module. At first, the resident will watch procedures being performed as the mentor explains what is being done and why. After several occasions watching the procedure, the resident will perform the task under the supervision of the mentor. Finally, when the mentor is satisfied that the resident is fully knowledgeable, he/she can perform the task solo.

In some modules, e.g., treatment equipment, there are many linear accelerators for which the maintenance responsibility falls to different physicists. In that case, those physicists are supervisors who report to the mentor for that module.

Rotations

Resident Orientation

First year residents will meet with the director who will go over the program for the three years, outlining the didactic courses that they will have to take and the expectations for the research year. The second-year residents will undergo a week of clinical orientation that includes: (i) meeting with the director who will

outline their responsibilities in the clinic, (ii) review of infection control, patient privacy and departmental policies with the nurse manager, (iii) patient data base (Mosaik/Whiteboard/Aria) and (iv) clinical observations on simulators, CTs and treatment machines.

Interactions with Your Mentors

At the start of the second year, you will be given the list of mentors for each clinical module and you will meet with those mentors whose modules you will be taking. They will discuss with you their expectations of the rotation and give you initial reading assignments.

Evaluations and Feedback Opportunities

Our program uses the New Innovations system for program evaluations. Evaluations are designed to provide formal feedback channels for the continuous improvement of the resident and of our program. Evaluations are performed on many levels, as noted below.

- Faculty evaluation of the resident during research year (quarterly)
- Resident evaluation of the research year (annually)
- Faculty (clinical mentor) evaluation of resident performance during clinical module (quarterly)
- Resident evaluation of clinical module (per rotation)
- Faculty evaluation of the resident in didactic course
- Resident evaluation of didactic course
- Program Director evaluation of resident performance (annually)
- Resident evaluation of program (at completion)

The style of the evaluations is similar to that mandated by the ACGME for medical residents. For clinical modules, faculty evaluations are performed on a quarterly basis, and take into account not only performance in the modules, but also attendance at rounds, journal club, etc.

Resident feedback is also greatly valued in order to identify areas of development for our program. All information regarding an evaluation is considered strictly confidential; only the executive committee reviews the completed evaluation. Significant resident feedback will generate an agenda item for the Executive Committee Meeting.

Residents are also encouraged to provide feedback to the Program Director, or Associate Program Director, during their monthly meetings. Residents may also directly communicate to any member of the Executive or Oversight Committees. Current members of the Executive and Oversight Committees are listed on our program [website](#). The Executive Committee will also invite a senior resident or recent resident graduate to collect resident feedback for presentation to the Committee. Residents may also voice feedback or concerns to the Harvard Ombuds office or Partners GME office, as noted below.

Oral Assessments

For residents in their clinical years, there will be an oral assessment held every quarter. This examination consists of an approximately 2-hour session at the site where the resident is undergoing training during that rotation, with the mentors questioning the resident on his/her knowledge and understanding of the material learned up to that point. The program director will write a report summarizing this assessment and discuss it candidly with the resident. Both the director and resident will sign the report.

Role and Responsibilities of a Senior Resident

In 2017, the role of Senior Resident in HMPRP was introduced. This duty will be performed by the two third-year residents at their respective locations, BWH and MGH.

What is expected from a Senior Resident?

The role of a Senior Resident is to provide guidance and leadership at a peer level for all residents enrolled in HMPRP and to help coordinate various activities between residents in different years of enrollment. We believe that establishing a formal senior resident role will not only provide a mentoring resource for newer residents, but will also provide an opportunity to develop leadership skills for the senior resident.

Duties and responsibilities

Duties and responsibilities of a senior resident may include:

1. Welcome new (first year) residents, help with introduction to the departments and help them orient themselves on the campuses.
2. Introduce second-year residents to clinic, help plan and participate in orientation week.
3. Lead the residents-with-candidates portion of interviews, and provide formal assessment of the candidates to the Executive Committee.
4. Provide peer-level mentorship to first and second-year residents. This may include quarterly group meetings, monthly one-on-one discussions, coordination of meetings with mentors (e.g., mentor-resident lunches) and coordination of journal clubs and QA shadowing.
5. Provide feedback to mentors and the Executive Committee in case of issues or concerns.
6. Attend Executive Committee meetings annually to present resident feedback.
7. Lead small clinical projects.

RESOURCES

The following resources are available to all medical physics residents.

Academic Appointment

You will receive an academic appointment to the Harvard Medical School as a Clinical Fellow in Radiation Oncology. This appointment provides library privileges at the Harvard Medical School Countway Library of Medicine and other libraries within the Harvard system. You will receive a Harvard Identification Card that will allow you access to these facilities and other privileges.

Libraries

MGH and BWH maintain a selection of those books deemed essential for the didactic and clinical course work. In addition, each of the affiliated hospital maintains a library which can be used during the working day and often after hours. Photocopy services are usually available. This is best arranged through the librarian in each respective Hospital. Online journal access is also available.

The Countway Library is the main Harvard Medical School library. You will need your identification card for admittance. Residents are encouraged to obtain an eCommons username and password through

the Countway library, for easy access to free and subscription-only (through Harvard) online journal articles and textbooks from any internet access site.

Hospital Identification Badges

Each resident is required to obtain a badge from each of the member hospitals:

Beth Israel Deaconess Medical Center
Brigham and Women's Hospital
Dana-Farber Cancer Institute
Massachusetts General Hospital

Badges are issued by the Security Offices at the respective hospitals. Often, the hours when identification badges can be obtained are limited. Also each hospital has its own requirements to obtain an ID badge. The resident should contact Madison Libby (726-8153) or Joanne Arruda (857-215-1489) about obtaining ID badges.

Identification badges should be carried at all times. It is especially important when on call, for a resident to carry all identification badges in order to ensure that Security will unlock doors for you if necessary.

Pagers

Each resident will be issued their own text pager through the Partners system at the beginning of their clinical rotations. This pager number will be kept for 2 years. In order to use the paging system, dial 617-732-5700 OR 617-726-5700 to page another resident. Your password initially is your page number. Text paging is possible through BICS or through the web site <http://www.partners.org> from any in-hospital computer.

Academic Allotment

The program will provide financial support for residents to present HMPRP related work at major national conferences such as AAPM or ASTRO. Residents are supported by the program to attend two AAPM conferences, after the first research year and at the end of the second residency year (end of the first clinical year).

For incoming residents, attendance at the AAPM conference held immediately after they join the program will be up to the discretion of the research mentors assigned to them. Typically, they may go if they are presenting their previous work, but this should be supported by their former institutions. The research mentors may also have the discretion to support them to attend if the mentors feel that the residents will benefit from such attendance. This will be determined on a case by case basis.

Residents are also encouraged to attend local NEAAPM Chapter meetings and will be reimbursed for any related expenses.

Residents are encouraged to become members of the AAPM and NEAAPM and annual dues for these societies will be reimbursed.

First year residents receive during their first week the following textbooks:

1. *Radiobiology for the Radiologist* by Eric Hall

2. *The Physics of Radiation Therapy* by Faiz Khan
3. *Handbook of evidence based radiation oncology*, Hansen and Roach, Editors

All first year clinical residents will receive 2 white clinic coats.

PARTNERS RESIDENTS BENEFITS

The following is a brief description of the Partners Residents Benefits program. For up to date information, please refer to <https://partnershealthcarehr.service-now.com/hrportal/>. To be eligible for benefits you must be regularly scheduled to work at least 87 hours per month at a standard hospital salary of at least \$833.34 per month. The benefits program is designed to give you the flexibility to customize a benefits program that meets your needs and the needs of your family.

Matriculants have 30 days from the date of hire to make benefit elections; coverage is effective as of the hire date. Each year during the annual benefits open enrollment period, you will have the opportunity to change your coverage for the next calendar year. In addition, you may make mid-year changes in response to new “life events”.

Medical Coverage

A broad spectrum of health plans is available to meet your needs. You will receive an additional Medical Participation Choice Pay allocation (only if you elect medical coverage) toward the purchase of medical insurance, the cost of which varies depending on your level of coverage: employee only, employee plus spouse/same-sex partner, employee plus children or family. Please note that if you elect not to be insured by Partners you will be asked to show evidence that you are appropriately insured through another means.

Prescription Drug Coverage

Prescription coverage is available through CVS/Caremark.

Long Term Disability

You may elect Long Term Disability insurance coverage, which would continue your pay at either 60% or 80% if you become disabled for more than 90 days. In addition to the continuance of a portion of your monthly income, you would be able to continue your medical, dental, vision and basic life insurance coverage at the employee rate. The plan has loan repayment options, a portability provision and a feature that protects against future earnings loss due to disability.

Dental Coverage

You may select from two Delta Dental plans: Major or Basic. You will receive an additional Dental Participation Choice Pay allocation (only if you elect dental insurance) toward the purchase of dental coverage, the cost of which varies depending on your level of coverage: employee only, employee plus spouse/same-sex partner, employee plus children or family.

Vision Coverage

Davis Vision provides coverage for basic vision services using a network of participating optometrists. A reduced level of benefit is available for out-of-network services.

Life Insurance and Accidental Death and Dismemberment Insurance

Partners provides you with basic group term life insurance coverage equal to one times your annual base pay as part of your core benefit program. You may choose to purchase additional life insurance or Accidental Death & Dismemberment (AD&D) insurance to increase your level of coverage, and/or you may purchase coverage for your spouse/same-sex partner and/or dependent child(ren).

Flexible Spending Accounts

You may establish reimbursement accounts for health care and/or dependent care expenses. These accounts are used to set aside pre-tax dollars to reimburse out-of-pocket dependent care expenses and/or uninsured medical, dental and/or vision care expenses.

Retirement

Partners offers two types of 403(b) Tax Sheltered Annuity (TSA) accounts through which you can voluntarily save money for retirement through salary reduction. You may make pre-tax contributions through the Traditional TSA and/or after-tax contributions through the Roth TSA Program. These are completely employee-funded.

Transportation—MBTA Pass Program

MBTA and Commuter Rail passes are available to Partners HealthCare System employees at a discount. For first time purchasers, passes can be arranged through Peoplesoft. Payroll deductions may take up to 5 weeks to process. For example, for an employee to receive a pass for April, the application must be received by the last Wednesday in February. The deduction for T-passes would begin in March.

To discontinue participation in the pass program, please make the changes in PeopleSoft. Payroll deduction for pass purchase is made one month in advance of the actual distribution of the pass, i.e. the cost of April's pass is deducted in March. In order to avoid payroll deduction for a pass you do not intend to use, please give at least 5 weeks notice to the Partners HealthCare System Payroll offices.

Athletic Privileges

1. Harvard University offers access to their main athletic facilities to all residents (officers) at Harvard University for a modest fee. For more information contact Harvard Athletics at 495-2211. The Office of Athletic Privileges is located in the basement of Harvard Hall - Johnston Gate, Harvard Yard, Massachusetts Avenue, Cambridge. Regular hours are: 9:00-5:00; summer hours: 9:00 - 4:30.
2. Vanderbilt Hall, located on the corner of Longwood Ave. and Ave. Louis Pasteur offers use of their athletic facilities to residents for an annual membership fee.
3. All residents employed by BWH are eligible for membership to Fitcorp at reduced rates (617-732-7111).
4. Boston Sports Club, located in the Landmark Center, offers discounts for BWH employees but does not have special rates for residents.
5. The Charles River Park Health club is available for MGH residents to use at a discounted rate.

Vacation Time

Each resident receives four weeks of vacation time for each academic year. All vacation requests must be approved by the program director or associate program director.

Interview Days

Each resident receives 5 working days of paid time for job interviews.

ACADEMIC INTEGRITY

Residents and certificate students in the Harvard Medical Physics Residency Program (HMPRP) are expected to demonstrate the highest levels of integrity in the classroom, laboratory, and clinic.

This document primarily outlines expectations and the academic integrity policy for HMPRP didactic courses. Harvard Medical School (HMS) standards for academic integrity are oriented towards medical students and medical school courses and are not very well-suited for HMPRP courses. Therefore, we have developed our own academic integrity policy for academic courses.

Residents and certificate students are also expected to follow all institutional standards for ethical and professional behavior in clinical and research environments. More specific guidance in these areas may be found below in the ‘Other Resources’ section.

Expectations for Didactic Courses

The objective of the didactic courses is to develop an understanding and long-term retention of course material through lectures, individual study and reading, problem sets, and workshops. Our expectations for residents and students are outlined in the following principles.

Class meetings and workshops

Students should attend class meetings regularly and demonstrate engagement in the course. Students should be on time for class meetings. Students who expect to miss a class meeting should notify the course director and the instructor in advance. Failure to attend class meetings consistently is likely to result in failure of the course.

Out of courtesy for others, students should mute their electronic devices (e.g., phones and pagers) during class meetings.

Assigned readings

The scope of most HMPRP courses is such that no single text covers the course material. Moreover, some subjects in the courses are not well-covered by any text. Consequently, instructors may assign reading from a variety of sources: the text book(s), chapters from other books, papers, task group reports, and other materials. Students are expected to complete all assigned readings.

Problem Sets

Students should complete assigned problem sets and homework in a timely manner. Due dates are set by individual instructors, but completed problem sets should typically be returned to the instructor for scoring within 1-2 weeks after being assigned. Late submissions will be scored at the discretion of the instructor and may not be accepted if prior arrangements have not been made with the instructor.

Some problem sets are straightforward while others are very challenging. Students should make their best efforts to fully complete all problem sets and show all of their work to justify their answers. Students at this level should be well aware of the value of unit analysis and are expected to use unit analysis in their solutions wherever appropriate.

When submitting problem set solutions electronically, each student should include his/her name in both the text and the filename of the submitted file to facilitate identification by the instructor.

Collaboration on Problem Sets

Discussing course material and problem sets with other students contributes to learning and is strongly encouraged. Some notes of caution and rules in this area are warranted, however. First, you should think about and attempt to solve problem sets on your own before discussing them with others. Second, if you work together, the work that you submit should still be your own; it should not be copied from another student. You need to work through and understand the solution to the problem set yourself. Finally, discussion of and collaboration on group projects, or extensive group work should be disclosed by recording the names of your collaborators on your solution. Failing to acknowledge collaboration could be regarded as plagiarism.

Good grades on homework achieved by copying the work of another student leads to reduced comprehension of the subject material and will be correlated with poor exam grades. The following section elaborates on the collaboration vs. copying issue.

Collaboration works for you; copying works against you.¹

IF YOU COPY, YOU ARE LESS PREPARED.

MIT Professor David E. Pritchard, the Cecil and Ida Green Professor of Physics, has said, “Doing the work trumps native ability.” Those who invest the time working through the problem sets are better prepared to answer exam questions that call for conceptual thinking.

IF YOU COPY, YOU AREN'T LEARNING.

Research done in 2010 by Professor Pritchard and others showed that those who copied more than 30% of the answers on problem sets were more than three times as likely to fail the subject than those who did not copy.²

IF YOU COPY, YOU VIOLATE THE PRINCIPLES OF ACADEMIC INTEGRITY.

Copying is cheating. When you fail to uphold the principles of academic integrity, you compromise yourself and the [program].

IF YOU COLLABORATE, YOU LEARN FROM YOUR PEERS.

Every student brings a unique perspective, experience, and level of knowledge to a collaborative effort. Through discussion and joint problem solving, you are exposed to new approaches and new perspectives that contribute to your learning.

IF YOU COLLABORATE, YOU LEARN TO WORK ON A TEAM

Gaining the skills to be an effective team member is fundamental to your success as a student, researcher and professional. As you collaborate with your peers, you will face the challenges and rewards of the collegial process.

¹ This section is excerpted from the MIT Handbook on Academic Integrity, retrieved from <http://integrity.mit.edu/handbook/copying-and-other-forms-cheating> on July 17, 2017.

² D.E. Pritchard, “What are students learning and from what activity?” Plenary presentation at the Fifth Conference of Learning International Networks Consortium 2010. Retrieved in July 2017 from <http://linc.mit.edu/linc2010/proceedings/plenary-Pritchard.pdf>

Exams and quizzes

Exams and quizzes, whether in-class or take-home, are designed to assess the fund of knowledge of an individual in a particular subject area. They should be completed by the resident/student alone, without assistance from any other person(s) (except for the course director or his/her designee in response to questions), using only the resources allowed by the course director/instructor.

Cheating and Academic Dishonesty

Copying the work of current or previous students is not acceptable. In addition to being detrimental to learning (as discussed above), this is a form of plagiarism. Again, collaboration is encouraged but all students should be submitting their own work.

Distributing exam questions and problem set solutions to students taking the course in subsequent years is also not acceptable.

Plagiarism is representing the work (exact or similar words, ideas, code, figures, or data) of others as your own, i.e., without properly acknowledging the source. Plagiarism is an offence that can carry very serious consequences including, in many settings, termination. References in the Other Resources section elaborate on this definition of plagiarism.

Other forms of academic dishonesty include but are not limited to:

- Misrepresenting (lying about) a personal or family situation in order to gain an extension or some other exception
- Falsifying or fabricating data
- Using prohibited resources (e.g., notes, books or electronic devices) during an exam or quiz
- Assisting others in any of the above actions

Cheating or other academic dishonesty should be reported to the course director or program director.

Think twice before you cheat or engage in dishonest behavior; consider the consequences. Cheating is damaging to yourself, to your reputation, and to the residency program.

Other Ethical Questions

Additional guidance on ethical questions can be sought from the course directors, program director, and instructors. The HMS Ombuds office is an additional resource for ethical questions. <https://hms.harvard.edu/departments/ombuds-office>. Each hospital has a code of conduct and residents are also expected to adhere to the AAPM Code of Ethics.

However, before posing a question, ask yourself the simple question “Would I want other people to know if I handled the situation in this way?” If you wouldn’t want your colleagues and potential employers to know about it, it is probably a bad idea.

Policy Violations

The consequences of academic integrity policy violations will be decided by the course and program director in conjunction with the instructor. Possible disciplinary actions include but are not limited to the following:

- Receiving zero credit for an assignment, quiz, or exam
- Re-doing an assignment

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- Completing an additional assignment
- Failing a course
- Dismissal from the residency or certificate program

Students should recognize that the damage to one's reputation from a policy violation may be far worse than some of the actions listed above.

Actions taken by the program will be consistent with the Partners GME Adverse Action Policy. Residents who wish to appeal these actions may follow the GME Redress of Grievance Policy:

<http://www.partners.org/Graduate-Medical-Education/Policies-Resources/Policies.aspx>

Other Resources for Ethics/Academic Integrity

General Ethics Guidelines

Ethics at Partners

<http://www.partners.org/About/Ethics/Default.aspx>

Interactions with Industry

<http://www.partners.org/About/Ethics/Interactions-With-Industry/Default.aspx>

BIDMC Code of Conduct

<http://www.bidmc.org/~media/Files/AboutBIDMC/CodeofConduct.pdf>

BWH Code of Conduct

http://www.brighamandwomens.org/about_bwh/humanresources/code_of_conduct.pdf

MGH Ethical Standards Guide

http://apollo.massgeneral.org/compliance/wp-content/uploads/sites/13/2016/12/MGH_Guide_to_Ethical_Standards.pdf

Academic Integrity

MIT has an excellent handbook on academic integrity, available in html and PDF.

<http://integrity.mit.edu/>

<http://integrity.mit.edu/handbook/print-demand>

Research Ethics

Standards for ethical conduct of research may be found in institutional guidelines and policies for HMS, BIDMC, BWH/DFCI, and MGH.

National Academy of Sciences, National Academy of Engineering, and Institute of Medicine. *On Being a Scientist: A Guide to Responsible Conduct in Research: Third Edition*. Washington, DC: The National Academies Press, 2009. <https://doi.org/10.17226/12192>.

<http://navigator.partners.org/Documents/OnBeingAScientist-3rdEd-2009.pdf>

Partner's Responsible Conduct of Research (RCR) Training Program

[http://navigator.partners.org/Pages/Responsible-Conduct-of-Research-\(RCR\).aspx](http://navigator.partners.org/Pages/Responsible-Conduct-of-Research-(RCR).aspx)

MGH Office for Research Career Development archive of seminars for RCR credit

<https://facultydevelopment.massgeneral.org/orcd/rcr-orcd.html>

HMS Guidelines for Investigators in Scientific Research

http://ari.hms.harvard.edu/files/integrity-academic-medicine/files/guidelines_for_investigators_in_scientific_research_0.pdf

International Committee of Medical Journal Editors, "Recommendations for the Conduct, Reporting, Editing, and Publication of Scholarly Work in Medical Journals," December 2016.

<http://www.icmje.org/icmje-recommendations.pdf>

<http://www.icmje.org/recommendations/>

HMS Authorship Guidelines

https://ari.hms.harvard.edu/files/integrity-academic-medicine/files/authorship_guidelines.pdf

Plagiarism

HMS White Paper on Plagiarism and Research Misconduct

https://ari.hms.harvard.edu/files/integrity-academic-medicine/files/white_paper_plagiarism_statement_121510.pdf

<http://www.opencolleges.edu.au/informed/teacher-resources/plagiarism/>

Miguel Roig, “Avoiding plagiarism, self-plagiarism, and other questionable writing practices: A guide to ethical writing,” U.S. Department of Health and Human Services, 2015.

<https://ori.hhs.gov/sites/default/files/plagiarism.pdf>

Professional Ethics

The report of AAPM Task Group 109 (TG-109) delineates ethical and professional guidelines for the conduct of a medical physicist.

<https://aapm.onlinelibrary.wiley.com/doi/full/10.1002/mp.13351><https://www.aapm.org/pubs/reports/detail.asp?docid=181>

AAPM/RSNA Ethics and Professionalism Modules

<https://www.aapm.org/education/onlinemodules.asp>

OMBUDS OFFICE

Some concerns appropriate for the ombuds office include: sexual harassment; racism or other kinds of discrimination; professional/scientific misconduct; research-related issues; authorship; feelings of stress or anxiety; ethics/whistle blowing; personality conflicts/meanness; working conditions; fear of retaliation; favoritism.

The Ombudsperson will assist people with complaints involving interpersonal misunderstandings or conflict. The Ombuds Office is independent of any existing administrative or academic structures and is responsible only to the dean of each school. The office supplements the existing resources available to members of our communities. Speaking with the Ombudsperson will likely increase your awareness of alternative available to you for resolving your concern. Possibilities will be tailored to fit your particular circumstances and take into account any fears you may have about retaliation or other negative career consequences. The goal will be to enhance your ability to deal more effectively with the situation on your own. If more assistance is requested, further information can be gathered on your behalf, referrals can be made to those more expert on a specific concern, or proper authorities at your school or affiliated hospital can be contacted. When appropriate, shuttle diplomacy or mediation can be employed to help find a satisfactory solution.

The Ombudsperson is a designated neutral and, as such, does not advocate for any individual or point of view.

Informal Process

The Ombudsperson will provide you with a safe forum to voice your concerns, evaluate your situation, organize your thoughts, assess your feelings, and decide on what is important and relevant your specific circumstance. Together, the ombudsperson and you will explore options for you to consider. Options can range from simply talking about your problem to pursuing a formal grievance proceeding. You will select the options you prefer. Your privacy will be respected, as conversations will ordinarily remain confidential. No records are kept. In unusual circumstances, such as where information is subpoenaed for

a legal proceeding or there is a potential threat to safety and other options have been exhausted, information may have to be shared. If you have particular concerns about confidentiality, please raise the issue.

Formal Process

If all attempts at resolving the situation informally have failed, you may choose a more formal grievance process. All individuals will be subject to the policies and procedures of Harvard Medical School for their group. If the situation also involves an affiliated hospital, the Ombuds Office will work together with that institution to determine the best way to proceed.

Why?

Harvard's Medical School, School of Dental Medicine, and School of Public Health and the affiliated hospitals are large and complex institutions. Misunderstandings and disagreements can occur. Conflict can drain your emotional energy, decrease your productivity, complicate your dilemma, or add stress. You may need assistance. The Ombuds Office is a place where you will find help to handle interpersonal difficulties.

Who?

You are eligible and welcome if you are affiliated with any of the three schools as a: student, trainee, faculty member, or staff person.

How?

Contact Melissa Brodrick, Ombudsperson, Harvard Medical Area, 164 Longwood Ave, Boston, MA 02115. Call (617)432-4040 (Confidential), (617)432-4041 (Staff Assistant). Fax (617)432-0586.

E-mail melissa_brodrick@hms.harvard.edu

Web Site <http://www.hms.harvard.edu/ombuds/>

HMPRP GRADUATE TRAINEE LEAVE POLICY

The Partners HealthCare System Leave Policy (below) will be used for medical physics residents. For up to date information, please see the full [Graduate Trainee Vacation, Sick time and leave policy](#).

The HMPRP recognizes that some of our residents may face important family obligations as a result of the arrival of a new child. In adopting this leave policy, it is our objective to provide support for these residents within the constraints of the training programs directed by our parent institutions (member hospitals and Harvard Medical School).

Some of the important constraints to be considered are:

- The basic clinical training consists of 24 months of clinical training.
- The program includes a 12 month research rotation in the first year that is considered a critical part of the overall training. This research will be either at MGH or BWH.

Partners Graduate Trainee Leave Policy

General Note:

Since each Graduate Trainee must meet certain education requirements as defined by the program, ACGME and/or by the applicable American Board of Medical Specialties, the Graduate Trainee may be

required by his/her Chief(s) or training program director to make up missed time upon returning from any leave prior to advancing to the next level of training and/or prior to completion of the training program.

Whenever the need for leave is foreseeable, the Graduate Trainee will make a reasonable effort to schedule the leave so as not to unduly burden the program, and give notice no fewer than thirty (30) days before the leave is to begin. If the nature of the leave requires that the leave begin in fewer than thirty days, the Graduate Trainee will give notice as soon as is practical. A Graduate Trainee should give the training program director notice as far in advance as possible regarding planned parental leave or family medical leave; six months (confidential) notice is requested for planned leave after the birth of a child, in order to facilitate appropriate scheduling.

When a leave is taken for a personal medical illness, it will be facilitated through Occupational Health.

I. Vacation Time

See above.

II. Sick Time

A Graduate Trainee is entitled to twelve (12) paid sick days annually upon matriculation, to be used solely for illness significant enough to interfere with the performance of duty. Unused sick days may accrue to a maximum of thirty six (36) days over three years, but they may not be “cashed in”.

III. Family and Medical Leave

A Graduate Trainee may request up to twelve (12) weeks of leave for any of the following reasons:

- (a) Family medical leave: taken in order to care for a spouse, child or parent with a serious health condition. (A “serious health condition” is an illness, injury, impairment or physical or mental condition that involves either inpatient care or continuing treatment by a health care provider.)
- (b) Personal medical leave: taken because of a serious health condition that makes the individual unable to perform the functions of his/her position.
- (c) Parental leave: taken in the event of childbirth or placement of a child for adoption or foster care.
- (d) Qualifying exigency leave: taken to prepare for a covered military member’s active duty. A Graduate Trainee may take 12 weeks of unpaid leave for a qualifying exigency arising from the fact that the Graduate Trainee’s spouse, son, daughter, or parent (“covered military member”) is on active duty or has been notified of an impending call or order to active duty in the Armed Forces. Covered military members include members of the Regular Armed Forces as well as the National Guard and Reserves. Qualifying exigencies fall into 7 categories: short-notice deployment, military events and activities, childcare and school activities, financial and legal arrangements, counseling, rest and recuperation, and post-deployment activities. Active duty or call to active duty status for members of a Regular component of the Armed Forces means duty during deployment to a foreign country. Active duty or call to active duty status for members of the Reserve components of the Armed Forces (i.e. members of the U.S. National Guard and Reserves) means duty during deployment of the member with the Armed Forces to a foreign country under a call to order to active duty in a contingency operation.
- (e) Military Caregiver Leave - Graduate Trainees may take up to twenty-six (26) weeks of unpaid leave for military caregiver leave, taken to care for an injured service member. A Graduate Trainee may take a maximum of 26 weeks of military caregiver leave during a single 12 month period to care for a “covered service member” who is the Graduate Trainee’s spouse, son, daughter, parent, or next of kin who is injured while on active duty, or who had an injury that existed before the beginning of the service member’s active duty and was aggravated by service during active duty in the Armed Forces.

A “covered service member” for these purposes is a current member of the Regular Armed Forces, National Guard, or Reserve, including those on the temporary disability retired list (TDRL), and veterans who are undergoing medical treatment, recuperation, or therapy for a serious injury or illness, if the veteran was a member of the Armed Forces at any time during the period of 5 years preceding the date on which the veteran undergoes the medical treatment, recuperation, or therapy

IV. Additional Provisions Relating to Family and Medical Leave

- Upon return from an approved family or medical leave of absence, the Graduate Trainee will be restored to the position left.
- If enrolled at the time of commencement of an approved family leave, the Hospital will maintain the Graduate Trainee’s health and other insurance coverage at the same levels and cost to the individual during the period of leave.
- Parental leave must be taken within one year of the birth or adoption unless an individual plan for part-time or intermittent leave has been approved by the Program Director.
- If an intermittent or partial leave (i.e., a reduced work schedule) is requested, the Chief and/or training program director may alter the Graduate Trainee’s work schedule in order to accommodate the leave.
- Coverage for Graduate Trainee’s program-related responsibilities. It is understood that it is the responsibility of the Program Director or his/her delegate – not of the Graduate Trainee taking a leave - to make arrangements for coverage of the Graduate Trainee’s clinical responsibilities in the case of family, medical or bereavement leave.
- Make-up requirements. The Graduate Trainee should seek clarity from the Program Director about make-up time as required by the (sub)Specialty Board and/or the Program, and how the need to demonstrate achievement of competency prior to graduation may impact the need for make-up time. In addition, it is the responsibility of the Program Director to determine what specific experiences or activities that may be missed during a leave need to be made up, even if the time spent on leave does not need to be made up

V. Personal Leave of Absence

Program Directors may on occasion, in accordance with the bylaws of the Professional Staff, grant a leave of absence to a Graduate Trainee for any form of extended illness or disability or for other compelling reasons (i.e., personal leave of absence). Such leave must be requested in writing with maximal advance notice prior to the requested leave date.

VI. Bereavement Leave

Bereavement leave: Graduate Trainees may take up to ten (10) work days of bereavement leave following the death of an immediate family member (defined here as a parent or step- parent, sibling or stepsibling, child or step-child, and spouse or domestic partner), with salary continuance. Longer leave, or leave for the loss of other connected individuals, is at the discretion of the Program Director

VII. Salary Continuance

Note: Where salary continuance is provided (as detailed below), this continuance is distinct from paid vacation and is in addition to it. In general, paid vacation can be used to functionally extend the period of salary continuance during a leave, if/when it is feasible, and with Program Director approval for vacation time to be used during the leave.

Salary will be continued as follows:

- Family medical leave: Graduate trainees may not use sick time for family medical leave. Salary will be continued only in exceptional circumstances, at the discretion of the Program Director after consultation with the Chair/Chief.

- Personal medical leave: The Graduate Trainee must use any accrued sick time while on personal medical leave. An additional period of salary continuance may be given at the discretion of the Program Director up to a maximum of ninety (90) days, following consultation with the Chair/Chief. (Long term disability insurance may apply after that period of time.)
- Parental leave: Graduate trainees who are the parent of a new child by birth, adoption, or placement in foster care are eligible for salary continuance for a period of eight weeks following birth, adoption or foster care placement. Accrued sick time cannot be used to extend salary continuance for parental leave. However, if a trainee requires a personal medical leave related to pregnancy or childbirth, and this leave is handled according to the personal medical leave parameters set forth above, the medical leave is separate and in addition to paid parental leave.
- Qualifying Exigency leave: Graduate trainees may not use accrued sick time for qualifying exigency leave.
- Military Caregiver leave: Graduate trainees may not use accrued sick time for military caregiver leave.
- Personal leaves of absence: Graduate trainees may use vacation time, but *not* accrued sick time, for personal leave. Salary will be continued only in *exceptional* circumstances, at the discretion of the Chief.

VIII. Additional items specific to HMPRP regarding Parental leave:

Since CAMPEP requires 2 years of clinical training in the residency, a loss of training time due to parental leave may need to be made up by an extension of the residency. Part or all of the annual vacation time may be used for parental leave to offset the loss of training time. But any parental leave in excess of the applied vacation time must be made up by an extension of the residency. These rules are probably most clearly expressed mathematically:

Paid parental leave time = 8 weeks

Extension time (weeks) = time of leave – applied vacation time

Unpaid time (weeks) = time of leave – applied vacation time – paid parental leave time

One factor residents may wish to consider when planning parental leave is the ABR Exam. Part II of the ABR is typically taken in the late summer, following the usual residency completion time (June 30). The ABR requires the residency to be completed by a certain date (typically August 31st). Depending on the length of residency extension, an extension could make the resident ineligible to sit for Part II in the same calendar year as graduation. In that case, the resident would sit for Part II in the calendar year following graduation from the residency program.

Parental Leave Policy Summary

- The length of parental leave may be up to 12 weeks.
- The length of paid parental leave provided is 8 weeks.
- Vacation time may be applied to parental leave.
- Parental leave time that is not vacation time will need to be made up with an extension of the residency.
- Residents are encouraged to take the time that they need during this very special time in their lives.

PRE-EMPLOYMENT DRUG SCREENING

Partners Healthcare now requires pre-employment drug testing for new employees. Details relating to Graduate Medical Education Trainees are below. The full policy is available [here](#).

Offers of employment for professional staff, including graduate medical education (GME) trainees - recruited directly or via a national match program - are conditional and depend on successful completion of pre-employment drug screening and the credentialing process for appointment to the professional staff. Conditions of employment can be found at <https://www.partners.org/For-MedicalProfessionals/Employment-Conditions.aspx>.

Drug testing should be undertaken within two weeks of an accepted offer (or confirmation of a match) at Partners. A delay in completing the drug testing process can prevent completion of the credentialing process in time for the GME program's start date. Testing can be done at:

- Partners Occupational Health sites in and around Boston (utilizing saliva testing), or
- Quest laboratories: those who live internationally or out of state will be referred to the nearest Quest Laboratory collection site for their drug screening (utilizing urine testing).

Drugs included in the screen Testing is limited to cocaine, amphetamine, methamphetamine, PCP, opiates, barbiturates, benzodiazepines, and methadone.

The medical review officer will contact individuals whose test indicates the presence of one of the substances noted above, generally within 7-10 days of the testing. If there is documentation of a valid prescription, the test will be reported to Occupational Health as "negative". A screen that indicates the presence of any drug, legal or illegal, for which the medical review officer cannot verify valid use will be reported to Occupational Health as a positive test. The medical review officer will indicate to the individual with a positive screen whether the determination is of a positive or negative test result.

Results (negative or positive) are not reported to outside agencies (state board of medicine, etc.).

Candidates who refuse to participate in a drug screen or who fail to complete the screening in the necessary time frame will not be eligible for employment.

Candidates with a positive test can meet with Occupational Health Services to discuss any questions or concerns of a technical nature related to testing. Candidates who wish to dispute a positive result have the right to request that the sample be tested at a second independent certified lab at their own expense. For this reason, positive samples are maintained at the lab for a period of one year. In the case of a positive test, the hospital's chief medical officer, chief of service, and program director, in conjunction with the vice president of Human Resources, will determine on a case-by-case basis whether additional circumstances need to be considered.

HMPRP DUE PROCESS POLICY

The residency program maintains an "open door" policy for residents to discuss and resolve the administration of policies, interpersonal relationships, and work performance as they arise.

We do recognize that not all problems may be resolved during this informal procedure. Therefore, we have adopted a formal grievance procedure for residents that want to pursue a problem beyond the informal procedure. This procedure is designed to provide unbiased and timely resolution of problems and will hold no adverse affect upon the resident as a result of utilizing this procedure. These policies are noted at: <http://www.partners.org/Graduate-Medical-Education/Policies-Resources/Policies.aspx>

Partners Graduate Trainee Redress of Grievances Policy

1. Grievances pertaining to the training program, faculty or work environment should first be directed to the training program director in writing, and copied to the Service Chief and the Director of Graduate Medical Education. If the Graduate Trainee prefers to request advice

about a possible grievance prior to or in lieu of directing a complaint to the training program director, s/he should contact the Director of Graduate Medical Education (DGME) or the Associate Director of GME (ADGME).

2. A written response to the grievance should be provided by the training program director within two weeks. If no response is received or if the response is not satisfactory to the Graduate Trainee, the Graduate Trainee should contact the Director or Associate Director of Graduate Medical Education. The DGME (or ADGME) will meet with the Graduate Trainee and the training program director if further information is needed, and will present the issue to either the Hospital-based GME Committee or the Partners Education Committee for resolution.

Graduate Trainee Adverse Action Process

1. "Adverse action" includes any of the following actions by the Hospital/training program: revocation or suspension of a right or a privilege; censure; written reprimand; imposition of a fine; required performance of public service or of a course of education; counseling or monitoring arising out of the filing of a complaint or a formal charge reflecting on the Graduate Trainee's competence to practice medicine.

The following actions are also included, only if related to the Graduate Trainee's competence to practice medicine or to a complaint or allegation regarding any violation of law, regulation or bylaw: restriction or non-renewal of a right or a privilege; denial of a right or privilege; resignation; leave of absence; withdrawal of an application; termination or non-renewal of a contract, or non-promotion to the next level of training.

2. Adverse action may be taken for due cause which shall include, but is not limited to, any of the following reasons:

- a. Professional incompetence, or conduct that might be inconsistent with or harmful to good patient care or safety, lower than the standards of the Medical/Professional Staff, or disruptive to Hospital operations;
- b. Conduct which calls into question the integrity, ethics or judgment of the Graduate Trainee, or which could prove detrimental to the Hospital's patients, employees or operations;
- c. Violation of the bylaws or policies and procedures of the Professional/Medical Staff, the Hospital or Harvard Medical School;
- d. Misconduct in science; and
- e. Failure to perform duties.

3. Allegations of Misconduct in Science

Any allegation of misconduct in science pertaining to a Graduate Trainee shall not be governed by the procedures described here, but shall be addressed and resolved pursuant to the process set forth in the Bylaws of the Medical/Professional Staff and/or applicable policies.

4. Initiation of Adverse Action

The adverse action process may be instituted by the relevant Department Chair/Service Chief. The Department Chair/Service Chief shall give written notice of the action or proposed action and the reason for it to the affected Graduate Trainee. The Graduate Trainee shall also be notified of his/her right to a hearing as described below, in the event the Department Chair/Service Chief recommends one or more of the following adverse actions: revocation or suspension of a right or privilege; non-renewal of the Graduate Trainee agreement or non-promotion to the next level of training; and, if related to professional competence or a complaint or allegation regarding a law, regulation or bylaw, the restriction, reduction, or non-renewal of a right or privilege.

In the event that the adverse action is one which does not entitle the Graduate Trainee to a hearing, the action of the Department Chair/Service Chief shall be the final decision of the Hospital/training program in the matter.

5. Hearing Procedure

(a) In the event that the proposed adverse action is one which entitles the Graduate Trainee to a hearing, the Graduate Trainee shall also be advised of his/her right to appear with counsel and to introduce witnesses or evidence, subject to the limitations set forth in section (d) below. The Graduate Trainee shall have thirty days after such notice to request a hearing. Failure to do so shall constitute a waiver. In the event that the Graduate Trainee does not make a timely request for a hearing, the action of the Department Chair/Service Chief shall be the final decision of the Hospital/training program in the matter.

(b) If the Graduate Trainee requests a hearing, the Director of Graduate Medical Education shall appoint a hearing committee which shall consist of not less than three persons. One member shall be a Graduate Trainee. No person who has actively participated in the initiation of the adverse action or proposed action shall be appointed to the hearing committee.

(c) The Department Chair/Service Chief whose adverse action or proposed action occasioned the hearing or his/her designee shall have the initial obligation to present evidence in support of the action or proposed action. Thereafter, the Graduate Trainee requesting the hearing shall have the burden of providing by clear and convincing evidence that the action or proposed action was arbitrary or capricious, or unsupported by substantial evidence.

(d) The hearing need not be conducted strictly according to rules of law relating to the examination of witnesses or the presentation of evidence. The hearing committee shall consider such evidence as reasonable persons are accustomed to rely on in the conduct of serious affairs. The hearing committee may take notice of any general, technical, medical or scientific fact within the specialized knowledge of the committee, and shall decide all other procedural matters not specified in this policy. The Graduate Trainee may not retry, and the hearing committee and the Hospital/training program may rely on and accept as true, any finding of fact contained in a final decision by the applicable licensing, certifying or regulatory authority, or by Harvard Medical School in any investigation it conducts, provided the Graduate Trainee was a party to the proceeding in which the finding of fact was made.

(e) The hearing committee shall issue a written report of its findings of fact and recommendations concerning what adverse action(s), if any, should be taken by the Hospital. A copy shall be sent to the affected Graduate Trainee, the Director of Graduate Medical Education, the Chief Medical Officer and the relevant Department Chair/Service Chief.

6. Appellate Review

The Graduate Trainee or the Department Chair/Service Chief may request that the Board of Trustees conduct an appellate review of the matter, or the Board may conduct a review on its own initiative. The Board may provide for such review by a Board committee appointed for the purpose. If neither the Graduate Trainee nor the Department Chair/Service Chief request appellate review, and the Board does not decide to conduct such review on its own initiative, the decision of the hearing committee shall be the final decision of the Hospital/training program in the matter.

The proceedings of the Board of Trustees or Board appellate review committee shall be based on the record of the hearing, the report of the hearing committee and any written response which the affected Graduate Trainee and the relevant Department Chair/Service Chief wish to make. At the sole discretion of the Board of Trustees or Board appellate review committee, it may also consider new or additional

information. If it does so, it shall share this information with the affected Graduate Trainee, the Department Chair/Service Chief and the hearing committee and give them the opportunity to respond.

The Board of Trustees or Board appellate review committee shall issue its decision in writing. A copy shall be sent to the affected Graduate Trainee, the Director of Graduate Medical Education, the Chief Medical Officer and the relevant Department Chair/Service Chief(s). It shall be the final decision of the Hospital in the matter.

7. Summary Adverse Action

The relevant Department Chair/Service Chief or his/her designee with the concurrence of the Chief Medical Officer, if available, may make an immediate summary suspension or take other immediate summary adverse action whenever such action is deemed necessary to maintain acceptable standards of care, safety, operation, integrity or ethics at the Hospital/training program. The person effecting such adverse summary action shall send a written report of such action and the reason(s) thereof to the Graduate Trainee involved, the Director of Graduate Medical Education and the Chief Medical Officer within three days of taking action. The Graduate Trainee may request review of this action within thirty days.

Upon such request the Director of Graduate Medical Education shall appoint a committee to review the summary suspension or other action. Within fourteen days of the Graduate Trainee's request, the committee shall decide whether the action appears to be substantiated by fact and is reasonable and should be continued in force, or whether it should be lifted. The committee shall send prompt written notice of its decision to the Graduate Trainee involved, the relevant Department Chair/Service Chief, the Director of Graduate Medical Education and the Chief Medical Officer.

LISTING OF PROFESSIONAL ORGANIZATIONS

American Association of Physicists in Medicine (AAPM)

<http://www.aapm.org>

Mission/Function:

The objectives of the American Association of Physicists in Medicine are to promote the application of physics to medicine and biology, to encourage interest and training in medical physics, and to prepare and disseminate technical information in this and related fields. The scientific activities of the AAPM primarily involve radiological physics of ionizing radiation (dosimetry, physics of radiologic diagnosis and therapy, radiation safety, etc.), but there is an increasing emphasis on the physics of non-ionizing techniques for the diagnosis and treatment of disease.

The association publishes the monthly journal, *Medical Physics*, as well as a newsletter covering developments in the profession and the association. AAPM also publishes a scientific monograph series, a symposium proceedings series, and a technical report series.

MEMBERS:

Membership is open to individuals who are engaged in the application of physics to medicine and biology in medical research or educational organizations.

New England Chapter of the AAPM (NEAAPM)

<http://chapter.aapm.org/NE/NE.html>

Mission/Function:

The objectives of the New England Chapter of the American Association of Physicists in Medicine are to bring together medical physicists in the New England area through a series of meetings. The year begins with a half-day winter meeting, followed by the Young Investigators' Symposium in spring. The summer meeting is an all-day affair located at a resort or hotel in the area. The final meeting, the annual meeting, is held in the fall and includes the society's board meeting and election of new officers.

MEMBERS:

Membership is open to individuals who are engaged in the application of physics to medicine and biology in medical research, industrial or commercial organizations or educational organizations.

American Society for Therapeutic Radiology and Oncology (ASTRO)

<http://www.astro.org>

Mission/Function:

The purposes of the society, (ASTRO), are to extend the benefits of radiation therapy to patients with cancer or other disorders; to advance its scientific basis, and to provide for the education and professional fellowship of its members. Active members are board certified physicians, radiation physicists and radiation biologists who confine their professional practice to radiation oncology or in support of radiation oncology.

American Board of Radiology (ABR)

<http://www.theabr.org>

Mission/Function:

The American Board of Radiology was organized and administered its first certification examinations in radiology in 1934. The purposes of the ABR are to improve the quality of medical service to the public; to improve the quality of graduate education in radiology; to encourage the study of radiology and to evaluate the standards of training in radiology; to arrange, control, and conduct investigations and examinations for specialists in radiology and radiological physics in order to evaluate the qualifications of voluntary candidates for certification by the ABR; to grant and issue certificates in the field of radiology, diagnostic radiology, diagnostic radiology with special competence in nuclear radiology, radiation oncology, and radiological physics and its subfields to voluntary candidates who have been found qualified by the board; to maintain a registry of holders of such certificates; and to serve the public, physicians, hospitals, and medical personnel by preparing and furnishing lists of practitioners who have been certified by the board. The ABR certifies individuals, while the RRC/ACGME certifies the program. Useful information about the ABR is available through its website.

MEMBERS/SPONSORS:

The ABR is sponsored by the American College of Radiology, the American Roentgen Ray Society, The Radiological Society of North America, the American Radium Society, the American Medical Association 'Section on Radiology', the American Society for Therapeutic Radiology and Oncology, the Association of University Radiologists, and the American Association of Physicists in Medicine. In 1981, the first physicist member was elected to the board of trustees, nominated by the American Association of Physicists in Medicine.

American College of Radiation Oncology (ACRO)

<http://www.acro.org>

Mission/Function:

The American College of Radiation Oncology was founded in 1989 to represent radiation oncologists and radiation oncology in the socio-economic and related arenas. It was organized to meet the interests of radiation oncology as they diverge from diagnostic radiology. Thus far, ACRO's activities have been primarily directed towards lobbying efforts and legal representation in Washington, D.C. However, the organization has also devoted resources towards educational concerns, including sponsorship of the Radiation Oncology Self-Assessment Program (ROSAP) and supplemental fellowship training for residents. ACRO sponsors the Howard Wong Fellowships which provide \$2000 for a resident to spend at least one month at an outside institution.

Membership is open to radiation oncologists and physicists in the United States, and to radiation oncology administrators through associate membership. The Board of Chancellors and officers are elected from members representing all types of practices including university, hospital based, free-standing, fee for service, HMO, government, etc.

American College of Radiology (ACR)

<http://www.acr.org>

Mission/Function:

The objectives of the American College of Radiology are to advance the science of radiology, to improve radiologic service to the patient, study the economic aspects of the practice of radiology, and to encourage improved and continuing education for radiologists and allied professional fields. The staff of the ACR supports the operations of the Radiation Therapy Oncology Group (RTOG), the Particle Clinical Trials Program and the Radiologic Diagnostic Oncology Group (RDOG). The staff also supports the efforts of the Patterns of Care Study in Radiation Oncology (PCS).

The American College of Radiology consists of more than 28,000 members and fellows in diagnostic and therapeutic radiology, radiologic physics, and related disciplines. Full regular membership in the ACR is open to radiologists and physicists who achieve certification by the American Board of Radiology or an equivalent board. Other classes of membership are open to qualified individuals practicing radiology full-time or working in allied fields. Members are structured into chapters which not only offer local programming, but also serve as geographic districts for representation on the ACR council, the policy making body of the college.

Radiation Research Society

<http://www.radres.org>

Mission/Function:

The Radiation Research Society is a professional society of biologists, physicists, chemists, and physicians contributing to the knowledge of radiation and its effects. The society's objectives are to promote original research in the natural sciences relating to radiation, to facilitate integration of different disciplines in the study of radiation effects, and to promote the diffusion of knowledge in these fields.

American Association of Medical Dosimetrists (AAMD)

<http://www.medicaldosimetry.org>

Mission/Function:

The objectives of the American Association of Medical Dosimetrists are to promote the proper application of medical radiation dosimetry, to clarify and strengthen the position of dosimetrists within the radiation therapy community, to establish guidelines for the training and continuing education of dosimetrists, and to develop more direct lines of communication among dosimetrists. The AAMD also publishes a journal, *Medical Dosimetry*.

Members:

Full membership is open to individuals who are primarily involved with the application of medical radiation dosimetry with a minimum of one year of full-time experience. Other membership classifications are available for individuals not fulfilling full membership classifications. Student membership is open for individuals who are currently enrolled in a formal dosimetry training program. Corporate membership is available for corporations who are interested or involved in the field of radiation dosimetry.

Society for Radiation Oncology Administrators (SROA)

<http://www.sroa.org>

Mission/Function:

As an organization for radiation oncology administrators, SROA's aims are: a) to improve the administration of the business and non-medical management aspects of radiation oncology and the practice of radiation oncology as a cost effective form of health delivery; b) to provide a forum for dialog

between the members of professional interest; c) to disseminate information to and among members of the society; and d) to promote the field of radiation oncology administration.

Members: Active members are persons currently engaged in the administrative responsibilities of radiation oncology at the executive, divisional, or departmental level, on a full or part-time basis. These persons have a spectrum of responsibilities including 1) the supervision of personnel (technical, clerical, and ancillary employees); 2) budgetary responsibility in at least two of the following areas: personnel, operating expense, capital equipment; and 3) development of operational procedures and guidelines for radiation oncology departments. SROA has no sponsors, but it maintains liaisons with AAPM, AAMD, ACMP, ACR, AHCRA (American Health Care Radiology Administrators), ASRT, ASTRO, the Associations of Educators in Radiological Sciences, Inc., ARRO, the Manpower Summit, and RSNA Associate Scientists Consortium.

American Radium Society

<http://www.americanradiumsociety.org/>

Mission/Purpose:

The American Radium Society is an organization of physicians and other scientists with common interests in cancer therapy. Its members include radiation oncologists, surgeons, gynecologists, medical oncologists, radiologists, and physicists. It is said to be the oldest multidisciplinary oncology society. Its primary purpose is the education of its membership and other cancer care professionals, by providing a forum for multidisciplinary discussion.

Active membership may be held by physicians and allied scientists. Physicians must be graduates of recognized medical colleges, and in good standing of their local medical community. They must have an active and sustained interest in the objectives of the society as evidenced by adequate formal training and continuing practice in those branches of medicine which are closely allied in the management of cancer. They must be certified by a board or have equal qualifications. If there is an oncology board in their specialty, they must be certified by that subspecialty board to provide evidence of qualifications in oncology.

American College of Radiology Institute

Mission/Function:

The American College of Radiology Institute (ACRI) was established as a corporate entity separate from the American College of Radiology to develop, produce, and distribute educational materials for radiology. This role differs from that of the publications section of the ACR in that the materials produced by ACRI are primarily non-print based.

WEBSITE

A website has been created for those interested in our program. Feel free to browse:

<http://www.harvardmedphys.org>

