

# **Atrium Health Wake Forest Baptist Medical Physics Resident Handbook**

The medical physics residency program in Radiation Oncology is a joint program between Atrium Health Levine Cancer Institute (LCI) and Atrium Health Wake Forest Baptist, hereafter referred to as the Residency Program. The program is designed to provide training in clinical radiation oncology physics consistent with the guidelines recommended by the Commission on Accreditation of Medical Physics Education Program, Inc (CAMPEP) and American Association of Physicist in Medicine (AAPM) report 249 (2013).

## **Program Website URL**

<https://school.wakehealth.edu/education-and-training/residencies-and-fellowships/medical-physics-residency>

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## **Program Evolution and History**

Atrium Health Wake Forest Baptist is a nationally prominent academic medical center in Winston-Salem with an integrated health care network that incorporates hospitals, clinics, physician practices, diagnostic centers and other primary and specialty care facilities serving the

residents of 24 counties in northwest North Carolina and southwest Virginia. Atrium Health Wake Forest Baptist is an NCI-Designated Comprehensive Cancer Center.

Atrium Health (formerly Carolinas HealthCare System), based in Charlotte, NC, is one of the nation's leading healthcare organizations with more than 900 care locations in North Carolina, South Carolina, and Georgia. Atrium Health Levine Cancer Institute (LCI) provides patients with access to nationally renowned physicians and state-of-the-art treatments at over 25 cancer care locations, including 9 radiation therapy centers.

In October 2020 Atrium Health and Wake Forest Baptist Health joined together as a single enterprise. The Wake Forest School of Medicine is the academic core of Atrium Health. The aim of the Residency Program is to leverage the resources of Atrium Health LCI and Atrium Health Wake Forest Baptist to offer an enhanced educational experience for the medical physics residents.

The medical physics section at Atrium Health Wake Forest Baptist has strong academic ties to the graduate education programs in Physics and Biomedical Engineering. This has led to a long tradition of informally training medical physicists since 1996 for clinical and academic careers in medical physics. This has included trainees from academic and clinical backgrounds. Academic trainees have traditionally been graduate students and post-doctoral associates from physics or related fields who have received "on-the-job" clinical training concurrent with their scholarly and research responsibilities. Most graduates have applied and been successfully admitted to medical physics residency programs after completing training at Atrium Health Wake Forest Baptist. Recently the section has received formal graduate school approval for a dedicated Graduate Medical Physics degree granting program and has applied for graduate program accreditation from CAMPEP. The next step for the section is to initiate a formal CAMPEP approval for a medical physics residency program.

## **Leadership and Faculty**

Led by the residency program Director and Associate Director, the program's faculty and staff have deep experience in medical physics. The program leadership includes the Director, Associate Director, the Steering Committee, and Rotation Mentors.

### **Program Director and Associate Director**

The Program Director has the ultimate responsibility for the Residency Program and are responsible to all reporting entities. The Associate Director will assist the Director with direction of the residency and will be from the opposite region as the director. The Director and Associate Director will have primary responsibility for the operation of the Residency Program in their respective geographic region, but they must also work together to ensure that the overall Residency Program maintains consistent standards in both geographic regions.

### **Steering Committee**

The Steering committee is responsible for oversight of the physics residency program. This includes review of the direction of the program as a whole, and of the performance and progression of individual residents. The steering committee consists of medical physics leadership, medical physicists, radiation oncologists, medical dosimetrists, representatives from administration, and the program director and associate director.

## **Curriculum**

The residency curriculum consists of eight clinical rotations that are constructed from nine competency modules. The modules are as follows:

1. Accelerator QA and Detector Systems
2. Acceptance Testing and Commissioning
3. Treatment Planning and Simulation
4. IMRT/IGRT/Motion Management
5. Brachytherapy (HDR & LDR)
6. SRS and SBRT
7. Radiation Safety and Shielding Special Procedures (TBI, TSET)
8. Professionalism, Ethics and Leadership
9. Quality and Safety

Modules 1-7 are primarily clinical in nature and will be completed during the clinical rotations. Modules 8 and 9 will be mainly seminar format. All nine competency modules will be completed within the two-year program duration.

## **Completion of a Rotation**

The following steps are required for successful completion of a rotation:

- Clinical competency evaluation: Residents are required to document their activities weekly in a report listing the procedures and clinical conferences in which they performed, observed, or participated. Copies of these reports are to be forwarded to their rotation mentor and discussed with the resident. The report will be forwarded to the Program Director/Associate Director for the appropriate region and placed in the resident's record. Should the resident's clinical performance be less than minimally satisfactory, the rotation mentor will contact the appropriate Program Director/Associate Director.

The rotation mentor must certify the satisfactory completion of all rotation competencies and performance goals (see Appendix C). If the resident has not earned a satisfactory score for all competencies and performance goals by the end of the rotation period, the rotation can be extended at the discretion of the Program Director to allow the resident the opportunity to address her/his deficient area(s). Failure to do so will result in dismissal from the program. The residency program will not be extended beyond the scheduled two-year duration.

- An oral examination: The oral exam is given by a minimum of the mentor and two physics members of the Program Faculty. At least one of the members must be from the other region. The oral examination consists of three parts: a 5-10 minute presentation by residents to summarize the rotation and the knowledge/experience learned, a 20 minute ABR-style oral exam, and a free-flowing discussion covering anything about the rotation. The oral exam will be scored in different categories. An overall pass/fail is determined based on the total score (1-3 to pass). Residents who receive an unsatisfactory score can proceed to the next rotation and repeat the examination no more than four weeks later. A second unsatisfactory score can lead to dismissal from the program.
- At the end of the first year (approximately month 11-13), additional time will be allotted during an end of rotation oral exam to provide a “free-flowing” discussion covering any material and/or rotation skills that the resident has already completed. The discussion will be scored in different categories. An overall pass/fail is determined based on the total score (1-3 to pass).

The Program Director will consider giving special consideration to individuals who fail the rotation due to unexpected reasons such as family emergencies or acute health issues.

To do a full evaluation of our program at the end of each clinical rotation, the resident will fill out a mentor evaluation form and submit directly to the Program Director/Associate Director for the appropriate region. The Steering Committee will review anonymized mentor evaluations and provide specific and constructive recommendations for improvement to the mentor(s).

### **Successful Completion of the Program**

To successfully complete the residency program, the resident must complete all rotations. In addition, an end-of-program oral exam will be given by an examination committee consisting of at least two physics members of the Steering Committee and a selection of rotation mentors. At least two members of the examination committee must be from the other region. The end-of-program oral exam will be given as soon as practical once the “Full Practice” rotation starts. Subject matter of the exam is at the discretion of the examination committee and could include all competencies and topics covered in the previous year's rotations. ABR style exams will test for practical skill and knowledge, familiarity with relevant literature, and theoretical underpinnings of relevant medical physics.

The examination is scored pass/fail. Residents who pass the examination will receive a graduation certificate. Residents who fail the examination have a second chance to pass the examination before receiving the graduation certificate.

Resident will fill in an end-of-program evaluation form. The feedback from graduating residents will be used to improve the training of the future residents.

- Residents are admitted to the Residency Program with the expectation that they will follow program expectations in good faith and complete the program in the allotted time. In the event that participating residents fail to demonstrate appropriate academic performance, clinical competence, or ethical behavior, the following procedure for remediation and/or dismissal shall be followed:
  - The Program Director/Associate Director from the appropriate region will document the nature and occurrence of the problem(s) by means of evaluations, personal interviews, academic data, and/or other documentation.
  - Both the Program Director and Associate Director will discuss the situation and agree on an educational enhancement plan.
  - The Program Director/Associate Director for the appropriate region will meet with the resident and provide him/her with a written educational enhancement plan that details the nature of the problem, the conditions and timetable for resolution, and the consequences if the problem is not resolved. At the end of the time interval described in the educational enhancement plan, the Program Director and Associate Director will discuss the progress of the resident. The Program Director/Associate Director from the appropriate region will provide the resident with written notification of one of the following conditions:
    - The resident has met the conditions outlined in the educational enhancement plan and no further action is required, or
    - The resident has not met the conditions outlined in the educational enhancement plan and will be placed on probation for a period not to exceed four weeks.

If the Program Director and Associate Director cannot agree on the findings of the written notification, then the decision of greater than 50 percent of the Steering Committee will prevail.

- In the event a probationary period is required, the Program Director will collect information during the probationary period, discuss the information with the Steering Committee, and conduct a follow up review with the resident on the established date.
- At the time of the follow-up review, the Program Director will make one of the following decisions:
  - Acceptance of the resolution of the problem
  - Continuation of the probationary period (maximum of two weeks)
  - Dismiss the trainee for failure to meet academic or performance standards.
  - Only one educational enhancement plan is allowed per rotation and a maximum of two educational enhancement plans are allowed for the duration of the residency. Once the limits to the educational enhancement plans have been reached, situations arising that would require an additional educational enhancement plan would result in dismissal from the program.

In addition to the procedures outlined above, physics residents are required to abide by the [code of conduct](#) provided to all hospital employees. Violations of the code of conduct that result in termination as a hospital employee result in automatic termination from the Residency Program.

Residents are at-will employees of Atrium Health and they receive the same benefits as full time employees. Therefore, common human resource issues are dictated by institution policy and not the residency program or departments.

The Medical Physics Residency Program is fully funded and supported by Atrium Health Wake Forest Baptist, Atrium Health, and the Departments of Radiation Oncology. In support of the educational mission of the Program, incoming residents are provided:

- Salary and benefits commensurate with that received by other hospital employees.
- A dedicated shared residents' office, touchdown space, or cubicle space located in the Department of Radiation Oncology. Each resident space is assigned to a single resident, and includes a telephone, computer with network access, and standard office supplies.
- Access to departmental copiers, fax machines, meeting rooms, and teleconferencing facilities
- Access to hospital online computing resources, including email, online storage, and remote access to clinical and educational software
- Access to the hospital and university library system, including all major medical and physics journals
- Safety orientation and review through the Department of Environmental Health and Safety, including annual training in:
  - o Radiation safety
  - o Biological safety
  - o Fire safety and emergency training
  - o HIPAA and patient safety
  - o TB and bloodborne pathogens

## **Benefits**

Benefit information can be found at the following links.

- [https://www.wakehealth.edu/about-us/careers/benefits#:~:text=Health%20and%20Welfare&text=Medical%20plan,accounts%20\(Health%20and%20Dependent%20Care\)](https://www.wakehealth.edu/about-us/careers/benefits#:~:text=Health%20and%20Welfare&text=Medical%20plan,accounts%20(Health%20and%20Dependent%20Care))
- <https://teammates.atriumhealth.org/human-resources>

Residents are provided 20 workdays per year of time off. This number does not include holidays. We will inform potential residents of the leave policy at the time of interviews. If no interview is conducted, the resident will be informed of the leave policy at the time of the offer or the deadline of the Med Phys Match. If more than 20 additional days of leave are needed, then the residency will need to be extended by the same number of days in order to ensure that the full curriculum is covered.