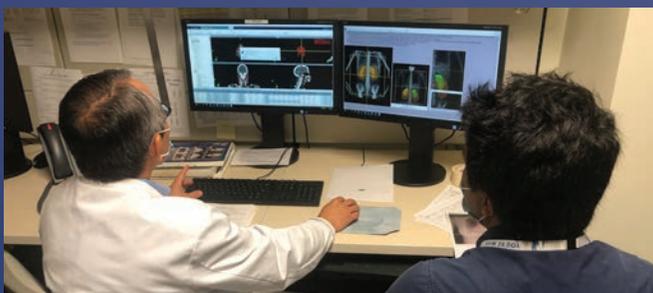
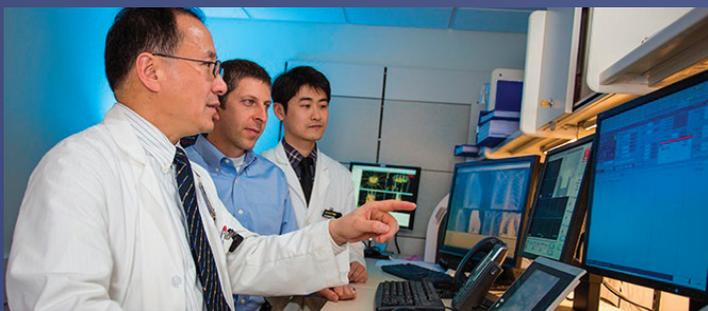




Department of Radiation Oncology

Duke University School of Medicine

Duke University Medical Physics Residency Program



DukeHealth

What procedures do you perform?

Duke provides a **broad range of radiation treatment techniques**, from 2D/3D techniques to advanced radiation therapy techniques including image-guided radiation therapy, SRS/SBRT, IMRT, VMAT, TBI/TSI, IORT and electron beam therapy. Further, we have an **active brachytherapy program** providing high dose rate brachytherapy for gynecological, prostate and intraoperative sites; low dose rate brachytherapy for treatment of prostate cancer; and eye plaque brachytherapy for treatment of ocular melanomas.

What resources do you have?

Duke's Department of Radiation Oncology boasts an impressive array of resources. With **eight LINACs on the main campus**, and multiple satellite locations, residents are likely to participate in important clinical activities such as **LINAC commissioning**. Main campus includes the following Varian LINACs and HDR units as well as imaging equipment.

- 4 TrueBeams
- 2 TrueBeam Stx with HD MLCs, ExacTrac, 6D couch
- Philips Brilliance CT
- GE Discovery RT590
- Siemens Biograph mCT PET/CT
- BrainLab Airo Mobile CT
- Siemens 3.0T Skyra MR simulator
- 2 GammaMedPlus iX HDR afterloaders

Additionally, we have licenses for cutting edge software like VelocityAI, MIM, Brainlab iPlan and Varian Developer Mode.

What are resident responsibilities?

From the first day of the residency, **residents are valued members of our team** and are responsible for many clinical tasks under the supervision of our faculty members:

- Patient specific QA (IMRT and VMAT, electron cutout measurements, and in-vivo dosimetry)
- Machine-specific QA (monthly & annual) for: External Beam Therapy and Brachytherapy; imaging equipment (MR, PET, CT, CT simulator)
- Heavily involved in clinical treatment planning for all treatment sites
- Weekly chart rounds



Training at Duke played a large role in shaping the kind of physicist I am today. I was given the opportunity to not only learn from **some of the most renowned physicists and physicians in radiation oncology**, but to collaborate with them and help **make a difference in patient care**. While the technology and special procedures speak for themselves, the style of teamwork and commitment to training residents is really what distinguishes the Duke residency program. I was provided with all of the necessary tools to become an independent and safe medical physicist and **I couldn't be more grateful for that experience.**

—Irina Vergalasova, PhD, Former Resident

What is the curriculum?

There are three main components to the training: clinical rotations, didactic courses and seminars.

The clinical rotations in 24-month training time cover:

- Quality assurance (QA) of LINAC and simulators
- Acceptance test and commissioning of LINAC
- Output calibration of LINAC
- In-depth treatment planning
- Chart checking
- Design and fabrication of treatment aids
- Imaging in radiation oncology
- Image-guided radiation therapy (IGRT)
- Special procedures: SRS, SBRT, TSI/TBI
- Brachytherapy (LDR, HDR, real-time HDR for prostate, endobronchial, sarcomas, skin, eye plaque)
- In-vivo dosimetry and application of dosimeters
- Radiation safety

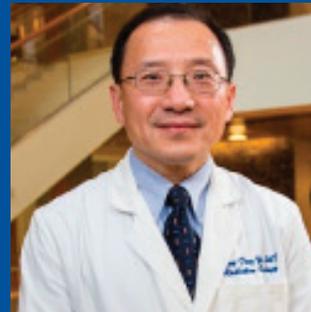
Each rotation covers several training topics with multiple learning objectives. **Each training topic is individually evaluated and summarized at the end of the rotation through a report and oral examination** mimicking the ABR Part 3 exam.

Didactic courses include:

1. Radiobiology
2. Radiation physics
3. Radiation therapy physics
4. Anatomy and physiology for medical physicists
5. Advanced photon beam radiation therapy
6. Radiation protection
7. Medical imaging physics

Applicants are expected to have finished most or all of the courses (equivalency is determined by the residency program) prior to start of residency. The rest will be made up during residency. However, CAMPEP limits the number of makeup courses to two within the two-year clinical training period.

Seminars include departmental weekly chart rounds, grand rounds, morning conference, Resident Lecture series and other related talks.



Duke has excellent teachers, an impressive array of resources and a collaborative environment geared towards **producing the next generation of exceptional medical physicists.**

—**Fang-Fang Yin, PhD,**
Director, Division of Radiation Physics

Are there research opportunities?

Research is an integral component of our residency training. Our residents have research opportunities in both cutting-edge novel technology development and clinically-oriented projects, as well as working with radiation oncologists on clinical trials. Further, residents have resources and opportunities in other partner departments (radiology, computer science, BME) for research collaborations.

See our resident scholarly activities:
bit.ly/MedPhysScholarlyActivities »

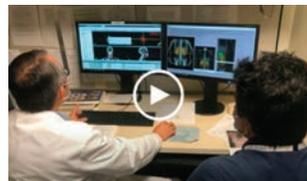


Why Duke?

- Top-ten medical school and university
- Prestigious medical center
- Large and expanding practice (>150 patients/day)
- State-of-the-art equipment and advanced procedures
- Excellent teams of physicists, radiation oncologists, dosimetrists and therapists
- Research opportunities in various topics
- Travel funding for scientific meeting
- Excellent placement statistics
- Affordable and exciting life in the Research Triangle area

View our **Why Duke? residency program video**, with interviews from faculty, staff, alumni and residents

bit.ly/DukeMedPhys »



Duke Recognized as a 'Best Employer'

Duke has been named as a best place to work by many prestigious publications and organizations. **Learn more »** or for more on Duke's *Forbes* 'Best Employer' designation for 2022, **click here »**

Duke Named 'Best Employer for Women' in 2021

Duke University is among the best employers for women in 2021, according to *Forbes*. **Learn more »**

Duke Ranked as a 'Best Employer for Diversity' in 2020

Forbes ranked Duke eighth on the 2020 list and first for educational industries. **Learn more »**



Our institutional culture is built upon our history and values. Our shared values – **respect, trust, inclusion, discovery and excellence** – are more than aspirations. Our values dictate our conduct and drive our culture.

—Duke University

Learn more about Duke's values »

Duke Benefit

- Competitive compensation level with annual salary reviews
- Excellent benefits package including medical, dental and vision (four health plan options)
- Health and dependent care reimbursement accounts
- Retirement plan that allows you to build retirement savings by contributing before-tax and/or Roth after-tax payroll deductions
- Employee tuition assistance program
- Children's tuition grant program
- 14 paid holidays annually
- Paid vacation
- Paid sick leave
- Employee Assistance Program
- Free health, financial and other relevant seminars and workshops
- Paid parent leave and childcare resources
- Discounted rates for Duke Fitness Club program
- Vendor discounts, including automotive, fitness, entertainment, restaurant, theater, home improvement, sporting events, hotels, technology, travel and more

Learn more about Duke's benefits

Application Information

***radonc.duke.edu/education/
medical-physics-residency »***



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