



Program information 2023-2024

Penn Radiation Oncology Medical Physics Residency Program

Contact us

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Program size

- Current size: 11 residents
 - 5 two-year positions per year
 - 1 three-year position per year (non-match, off-cycle)

Program diversity

17 alumni 40 alumni (5 current) (6 current)

- PhD: 41 alumni (8 current)
- MS: 15 alumni (3 current)

Welcome to our **program!**

We are a CAMPEP-accredited program designed to educate and train physicists in all aspects of modern radiation oncology physics. Our major components of the two-year residency are: rotations, clinical services, topic-specific didactics, and research. Our program allows the trainee to complete the ABR certification in the speciality of Therapeutic Medical Physics.

Professional development

- Generous funding for travel to conferences and educational expenses
- Textbooks, dedicated work phone for clinical use
- Custom business cards
- Board examination fee
 coverage
- Reimbursemnt for after-hours
 transportation

Highlights

job placement before graduation & ABR pass rate on first attempt in

the past five years

Benefits

- Medical, dental, and vision plan
- Drug prescription plan
- Employee Life Insurance
- Tax-Deferred Retirement Plan
- · Vacation and sick pay

Clinical activities & responsibilities

Each resident is assigned to 2-3 clinical shifts per week, the other days are free for rotation reading, rotation activities, or research. Throughout the whole residency, it is expected that the resident performs in-vivo dosimetry, monthly & annual QA (linacs, protons, CT), mock LINAC commissioning experience, HDR QA, clinical physics staff support services, etc.



Early shift 6am - 2pm

- Checking morning QA
- · Machine troubleshooting
- Assisting clinical activities (initial and weekly chart checks, 4DCT acquisitions)

Regular shift

9am - 5pm

- Machine troubleshooting
- Assisting clinical activities (dosimetry support tasks, initial and weekly chart checks, 4DCT acquisitions, etc.)

Late shift

2pm - end of treatment

- Photon patient-specific QA
- Proton patient-specific QA
- Machine performance checks



Click here for a virtual tour of our facility, narrated by past residents.

Rotations

Our 2-year clinical training program provides a robust curriculum that prepares its alumni to compete for top positions in the field. It is structured into 9 rotations, where the first year is spent largely in didactic instruction and clinical rotations while the second year can be tailored to the individual's personal interests or career goals.

Residents work closely with their mentors throughout the duration of the program, thus ensuring they acquire fundamental knowledge and meet the practical objetives of each rotation.



Learn more about each individual rotation in our program overview prezi made by current residents!



2.5 Months

Basic Treatment Planning

Residents will learn basic aspects of radiotherapy simulation, 3D conformal treatment planning and treatment delivery, participate in treatment planning for clinical cases, patient specific QA and in vivo dosimetry.

3 Months

Beam Data, QA & QC, Radiation Safety

Residents will learn the theoretical and practical aspects of TPS acceptance testing and commissioning & treatment delivery machine QAs. Residents will have hands on experience with a planning algorithm mock commissioning exercise with a mentor.

3 Months

Brachytherapy and Special Procedures

Residents will learn the theoretical and practical aspects of brachytherapy, participate in radiopharmaceutical procedures, HDR clinical cases, HDR commissioning, annual QA, and source exchange calibration.

3 Months

Clinical Practicum at PCAM

Residents will further increase their clinical skills by performing machine QA and patient specific QA and will have the opportunity to participate in developmental or commissioning projects in the department.

3 Months

Proton Therapy

Residents will become familiarized with commissioning of PBS proton systems, treatment planning, patient immobilization strategies, stoichiometric CT calibration, as well as proton machine QA and patient specific QA.



twitter.com/PennMedPhys

med.upenn.edu/medicalphysicsresidency/

MEDICAL PHYSICS RESIDENCY ROTATION ROADMAP

3 Months

Advanced Treatment Planning

Residents will learn the theoretical and practical aspects of highly conformal radiotherapy treatment planning, including IMRT, VMAT, and SRS/SBRT.

1 Month

Imaging

Residents will learn the theoretical and practical aspects of CT, PET/CT, MR simulation and other imaging modalities. Residents will also participate in CT, PET/CT, CBCT and MRI monthly & annual QA.

3 Months

SRS, SRT, and Brachytherapy

Residents will receive training in SRS/SRT and brachytherapy and will participate in planning for GammaKnife Icon, HyperArc on Truebeam Edge, and HDR cases.

2 Months

Clinical Practicum at Satellite Facility

Residents will rotate through a network facility to assist with medical physics duties in a small community clinical setting. This gives residents the opportunity to become familiar with clinical systems that are not available at the main center, like CyberKnife and a single room proton system.

Graduation

Since the program's initial CAMPEP accreditation in 2009, its residents have achieved an outstanding pass rate on the American Board of Radiology certification exam. Program alumni have successfully acquired positions in academic medicine and private practice.

Our facilities & equipment

A multi-modality and multi-location approach

A highlight of Penn's program is the experience residents gain working with innovative treatment technologies. In addition to Roberts Proton Therapy Center, Penn Medicine was the first in the world to use The Varian Halcyon[™]. Other distinguishing features include modalities such as Gamma Knife, CyberKnife, etc.

Perelman Center for Advanced Medicine

- 5 Varian Linear Accelerator vaults (3 TrueBeams & 2 Halycons)
- 5 IBA Pencil Beam Scanning Proton vaults
- 2 Dual Energy CT Simulators
- PET/CT and MRI Simulators
- Newly renovated HDR brachytherapy suite



Lancaster General Hospital

- Varian ProBeam 360° Proton System
- Cyberknife M6
- 4 Varian Linear Accelerators:
 - 2 TrueBeams
 - 2 Halcyons
- HDR brachytherapy



Pennsylvania Hospital

- 2 Varian Linear Accelerators:
 - Edge with HyperArc
 - Clinac
- Gamma Knife Icon
- HDR brachytherapy



Alumni

When you join the Penn community, you become part of a vast alumni network that opens doors to opportunities with leading conventional radiation and proton therapy programs throughout the country and beyond. Program alumni have successfully acquired positions in academic medicine and private practice. Current placements include:

- University of Pennsylvania
- University of California, San Francisco
- The Ohio State University



*There is a small number of alumni in other countries.

Their stories



There's a reason for Penn's reputation: All of the latest instruments and technology are available. But Penn's knowledgeable, experienced faculty is really what makes the difference. Everywhere I turned, there was someone there to answer my question.

Ahmet Ayan, PhD, 11'



The Penn mentorship program is one of a kind. I learned extremely valuable lessons from my mentors and they always went above and beyond to make sure my education was their top priority.

Austin Kassaee, MS, 23'



Life in Philly



A City of Neighborhoods

From sleek skyscrapers to charming brownstones, each region of the city has its own distinct pulse.



Affordable Living

Most affordable major city on the east coast.



Enriching

Center of history, visual and culinary arts, music and professional sports.



Flexible Transportation

Most areas of the city are easily accessible via walking, <u>biking</u>, or <u>public transportation</u>.



Learn more about the physics resident perspective through our newsletter.

See our resident-created virtual guide of Philadelphia on Google Maps!

