

Radiation Oncology Physics Education at WSU

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Future of the Profession

- Who do we want to enter the profession?
- What degrees/training should they have?
- How many should be certified?

What defines us?

- Pros and cons of standardization of MP
 education
- Providing appropriate didactic, clinical, and research training

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WSU Grad Program Demographics

- ~70% BS in physics (20% engineering)
- >50% with at least one graduate degree
- ~20% of students entering MS program have PhD in physics already

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Demographic Changes in MP

- Will the residency requirement change MP demographics?
 - Will the PhD in MP still be appealing?
 - Will PhDs in physics still find it worthwhile?
 - Will more PhDs be ABR certified due to residency selection bias?

Teaching Physicists in Medicine

- · First and foremost, we are physicists
- Physics is not about recursive plug-andchug or memorization and regurgitation
- "Instruction" vs. "Teaching"

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Medical Physics Education at WSU

- Practical concepts built on foundational theoretical coursework
- · Effective teaching methodology
- Incorporating teaching technology

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Curriculum

- AAPM Report #197
 - Rad Phys and Dosimetry
 - Rad Protection and Safety
 - Imaging
 - Radiobiology
 - Anatomy and Physiology
 - Special topics
 - Imaging science, radiation therapy, imaging for treatment guidance and monitoring
 - Laboratory training

Clinical training

• How to provide clinical training?

"...formal academic training can never hope to provide, nor is it necessarily the proper environment for, this clinical training." (AAPM Report #197)

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Skills of the Trade

- Background provided within didactic coursework
- Hands-on laboratories / internships
- · Oral review sessions
- Once residencies are required, should clinical training be minimized in education programs?

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Ancillary skills

- · Seminar course -
 - Research presentation
 - Grant / manuscript writing
 - Leadership skills
 - Effective communication

Ancillary information

- · Seminar course -
 - Medical terminology
 - Radiological anatomy
 - Medical / Research ethics

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Board Exam Preparation

- Fundamental physics & MP, rad bio, and A&P all prior to August ABR Part I date
- · Oral review sessions
- · Oral exam preparation and mock orals

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Gauging Success

- Success of graduates is a measure of the training program
- MP employment success
- Ability to obtain residency position CAMPEP MP grads: ~10%(MS), ~30%(PhD) WSU PhD program('07-'11): 67% WSU MS program('07-'11): 36%





Direction of MP Profession

- Is MP a science or a profession? (are we scientists or technicians?)
- What is it that defines us and makes us valuable to medicine?