The Professional Doctorate in Medical Physics - FAQ

George Starkschall, PhD
Department of Radiation Physics

Disclaimer

• Almost everything in this presentation is my (biased) opinion, and may not necessarily reflect the views of my employer or any of the organizations I purport to represent

What is the Professional Doctorate (PD) degree?

• Medical Physics degree granted upon successful completion of training program
• Program consists of didactic course work + intensive clinical training
What is the rationale for the PD degree?

• In 2014, ABR will require that all candidates for certification in radiological physics must have completed a CAMPEP-accredited residency.

What is the rationale for the PD degree?

• Minimum training requirements for entry level into medical physics profession:  
  – 2 yr didactic instruction (MS degree)  
  – 2 yr clinical training (residency)  
• “First professional degree” (FPD) in medical physics awarded after 4 yr postbaccalaureate program.

What is the rationale for the PD degree?

• Digression:  
  – Note meaning of “minimum training requirements”  
  – Not to be interpreted with negative connotation.
What is the rationale for the PD degree?

- In many professions, 4 yr FPD is called a “doctorate degree”
  - MD
  - DDS
  - DVM
  - Etc.
- In some other countries (e.g., UK), FPD medical degree is bachelor’s degree (MBBS) – 5 yr post-secondary program
  - MBBS = MD in US

Would such a degree satisfy ABR requirements for board eligibility?

- CAMPEP has indicated that a program that meets the requirements of AAPM Report 79 (academic education requirements) and AAPM Report 90 (clinical residency requirements) would achieve CAMPEP accreditation
- ABR would grant individual completing such a program eligibility to sit for board exam

What is the issue, then?

- Should the first professional degree in medical physics be called a “doctorate degree”?
How does the PD degree differ from the PhD degree?

- Both degrees require didactic medical physics education – approximately 2 yr
- PhD – research degree
  - Several years’ research leading to dissertation
- PD – professional degree
  - Two years’ clinical training to enter professional practice

What would be some advantages of the PD?

- All medical physicists would have title “doctor”
  - More prestigious title
  - Eligible for faculty status and benefits in academic institution (maybe)
  - Politically advantageous (?)

Why would a student prefer to seek a PD rather than a PhD?

- PD is shorter and more direct route toward career in clinical medical physics than PhD
  - 4-5 yr post-baccalaureate vs 5-6 yr + 2 yr residency
Why would a student prefer to seek a PhD rather than a PD?
• PhD provides appropriate mentored research training in preparation for academic career

Where would a PD program be academically housed?
• Not completely clear at this time
• Possibly in graduate program
  – Graduate programs view mission to be research, rather than professional, training
• Possibly in medical school
• Possibly in school of allied health
• Other possibilities?

Where would support for the PD program come from?
• PD program would require additional clinical instructional resources
• Funding support would come from student tuition
• The PD program is designed to be a self-sustaining method of training medical physicists
Why would a PD student be willing to pay tuition to attend a program?

- In the same way that medical students, dental students, or veterinary students pay tuition
- Salaries for medical physicists are comparable to or greater than those for others holding professional doctorates, including physicians

Some salaries (from salary.com)

<table>
<thead>
<tr>
<th>Job title</th>
<th>25%ile</th>
<th>75%ile</th>
</tr>
</thead>
<tbody>
<tr>
<td>Psychologist</td>
<td>$66,834</td>
<td>$87,495</td>
</tr>
<tr>
<td>Optometrist</td>
<td>$94,555</td>
<td>$117,698</td>
</tr>
<tr>
<td>Dentist</td>
<td>$111,937</td>
<td>$154,831</td>
</tr>
<tr>
<td>MD – general</td>
<td>$124,520</td>
<td>$164,735</td>
</tr>
<tr>
<td>Med Phys</td>
<td>$124,762</td>
<td>$166,731</td>
</tr>
<tr>
<td>MD – peds</td>
<td>$132,104</td>
<td>$174,633</td>
</tr>
</tbody>
</table>

Would PD students have the opportunity to do research?

- Programs could require research as part of the program
- Research likely to be clinically focused
Would a medical physicist with a PD qualify for an academic tenure-track position?

- An academic physicist with a PD would be more likely to hold a clinical faculty position.
- A PD might not compete as successfully as a PhD for peer-reviewed funding.
- A tenure-track position is possible, especially for a PD with postdoctoral research training.

Wouldn’t a PD degree tend to lessen the status of a PhD degree?

- Depends on the individuals holding the degrees.
- PD more qualified to provide clinical support than PhD without ABR.
- PhD more qualified to pursue research program.
- Likely to be exceptions.

Wouldn’t a PD degree tend to lessen the status of a PhD degree?

- Does an individual with a PhD providing clinical physics support and not pursuing a research program lessen the status of the PhD degree?
Wouldn’t a PD degree tend to lessen the status of a PhD degree?

- “a convincing case can be made that the professional doctorate has a clearly defined place in the hierarchy of US higher education degrees, and it should be perceived as different from and not as a substitute for the research doctorate”

What impact would PD programs have on MS programs?

- Applicant demand for MS programs may be reduced (or even eliminated)
- If MS + residency = PD, why not get PD?

What will happen to MS physicists if PD becomes the standard of training?

- Issue will need to be addressed
- Previous precedents
  - Legal training: introduction of JD degree to replace LLB
What impact would PD programs have on PhD programs?

- Applicant demand for PhD programs may be reduced
  - Many students enter PhD programs with primarily clinical goals
  - More employment opportunities in clinical, rather than research, positions
  - These students would be more likely to enter PD programs

What impact would PD programs have on residency programs?

- Programs provide clinical, not didactic, training
- Residency may be conduit only for PhDs (in medical physics or other disciplines) into field

What impact would PD programs have on PhD programs?

- Future PhD students likely to be more committed to research careers
- PhD + residency will be route for academic medical physicist
  - PhD + residency likely to provide full funding (unlike PD)
  - Possibility of PD/PhD programs (analogous to MD/PhD)
    - 2 yr didactic + 3 yr research + 2 yr clinical
What impact would PD programs have on postdoctoral programs?

• Presently, postdoctoral program is primary mechanism for PhDs in other fields to enter medical physics

What impact would PD programs have on postdoctoral programs?

• Applicant demand for postdoctoral positions may decrease (or go away) if residency is required to enter profession
  – If few residency programs available, postdocs may not be able to compete successfully against medical physics PhDs
  – If many residency programs available, may not need postdoctoral experience to enter residency program

What impact would PD programs have on postdoctoral programs?

• It is possible that the PD will be the route for PhDs in other fields to enter the medical physics profession
  – The increased complexity of medical physics may require more extensive training such as that only provided by the PD
Is the PD a good thing for the profession?

- Not the question
- The PD will happen
  - Several institutions are presently developing programs
- Important that it be done right

...and a take-away reminder

- We’re not the first
- PDs have been instituted in many professions
- Let’s not reinvent the wheel

Thank you – and now for the not-so-FAQs