The changing landscape in medical physics education

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Past-President
Chair, Board of Directors
Society of Directors of Academic Medical Physics Programs

Outline

• Number and type of MP programs
• ABR eligibility changes
• Doctor of Medical Physics degree
• Statistics report
• Calibration of students, residents, jobs
• Key deadlines

Number of graduate programs
(US/Canada)

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<th>2008</th>
<th>2009</th>
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<th>2011</th>
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<td>- not clinically oriented</td>
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*MS/PhD 33
*MS only 11
*PhD only 4
*Other 4
*Unknown (new) 1

2008 2009 2010 2011
CAMPEP-accredited: | 17   | 20   | 27   | 31   |
Non-CAMPEP:     | 34   | 32   | 26   | 22   |
                  | 51   | 52   | 53   | 53   |
Unlikely to seek accredit |       |      |      |      |
- no response   | 6    |      |      |      |
- not clinically oriented | 8    |      |      |      |
- no univ support | 1    |      |      |      |
Number of residency programs

(US/Canada)

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<th>Year</th>
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<th>Non-CAMPEP</th>
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<td>2009</td>
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<td>Non-CAMPEP:</td>
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Preparing our students and programs for changes in ABR Board eligibility requirements

Changes in ABR board eligibility

- ABR mandated changes formulated in 2002
- Starting in 2012, persons taking Part 1 of the ABR board must have graduated from or be enrolled in a CAMPEP-accredited graduate program or residency
- AAPM Board voted to endorse a requirement for CAMPEP-accredited residency
- ABR extended deadline from 2012 to 2014
- Starting in 2014, persons taking Part 1 must complete a CAMPEP-accredited residency to be eligible for Part 2
- These deadlines apply to applicants for Part 1 of the exam. If you have completed Part 1 by these deadlines, you are OK.
To prepare students for board eligibility:

- Graduate programs must become CAMPEP accredited now
- Residency programs must become CAMPEP accredited soon
- An adequate number of residency or residency-equivalent slots is needed soon
- How are we doing in preparing for these mandates?

**The bottom line is …**

Summary of AAPM Summit Meetings
(Chicago, 2008-2010)

- There are challenges in developing enough residency slots by the 2014 deadline
- Solutions under consideration
  - Encourage existing programs to develop new or additional traditional residency slots
  - Develop distributed, or “hub-and-spoke” residencies
  - Consider new professional Doctor of Medical Physics degree (students would pay tuition for 4 years)

Status of DMP degree programs

- One CAMPEP-accredited program has launched (Vanderbilt)
- Another program has started but is not yet CAMPEP-accredited (Texas Tech)
- Several other schools considering starting DMP degree
CAMPEP/SDAMPP Graduate Program Survey Results  
(Jan 1 - Dec 31, 2009)

E. Jackson, PhD  
Chair, CAMPEP GEPRC  
Chair, SDAMPP Outcome & Statistics Committee

Programs Responding

- 23 of 25 CAMPEP-accredited programs responded (18 US / 5 Canadian)
- 6 non-CAMPEP-accredited programs responded (all US)
- 28 programs offered MS degrees
- 21 programs offered PhD degrees
- 20 programs offered both degrees
- 8 offered only MS / 1 offered only PhD

Enrollment / Graduates / Attrition

- Enrolled Students:
  - MS/MSc: 333
  - PhD: 345
  - Total: 678
- Graduates:
  - MS/MSc: 147
  - PhD: 63
  - Total: 210
- Average attrition rate: 3.7%
Delay Before First Job

- MS/MSc: 4.3 months
- PhD: 1.2 months

*This does not include students who went on for additional degrees or a residency.*

MS/MSc Graduate Destination

- Entered RP residency: 15 (12.1%)
- Entered IP residency: 2 (1.6%)
- Junior med phys job: 62 (50.0%)
- Went on for another degree: 22 (17.7%)
- Took job in industry: 3 (2.4%)
- Other: 20 (16.1%)

PhD Graduate Destination

- Entered RP residency: 10 (16.4%)
- Entered IP residency: 3 (4.9%)
- Junior med phys job: 18 (29.5%)
- Went on for another degree: 0 (0.0%)
- Took job in industry: 5 (8.2%)
- Post-doc position: 16 (26.2%)
- Other: 9 (14.8%)
# Students Who Entered Board Exam Process

- ABR: 104
- CCPM: 1
- ABMP: 0
- ABSNM: 0

Plans for DMP

- Plans for a DMP?
  - No: 21
  - Under consideration: 1
  - In preparation: 3
  - Awaiting CAMPEP accreditation: 1

Plans for Residencies

- Plans for a New or Additional Residencies?
  - No: 4
  - Under consideration: 7
  - In preparation: 2
  - Expect approval soon: 2
  - Awaiting CAMPEP accreditation: 5
  - Already accredited: 5

- How many new slots/yr?
  - Rad Phys: 27
  - Diag Phys: 6
SDAMPP Residency Program
Survey Results
(Jan 1 - Dec 31, 2009)

E. Jackson, PhD
Chair, SDAMPP Outcome & Statistics Committee

FINAL version - 8/6/2010

Programs Responding
• 35 programs responded
  – CAMPEP-accredited 23
  – not CAMPEP-accredited 12
• US programs 30
• Canadian programs 5
• 30 therapy physics / 5 imaging physics

Applicants
• # applications received 1651
• # applicants offer admission 65 (3.9%)
• # applicants matriculated 60 (3.6%)
Entering Class

- Backgrounds:
  - CAMPEP med phys program: 49.2%
  - non-CAMPEP med phys program: 23.1%
  - Non-med phys program: 24.6%
  - Other: 3.1%
  - MS/MSc degree: 24.2%
  - PhD degree: 75.8%

Residency Slots

- # Slots/yr:
  - Rad phys: 47.5
  - Diag phys: 6.0
- Total # enrolled:
  - Rad phys: 88
  - Diag phys: 11
- # completed residency (3.0% attrition):
  - Rad phys: 36
  - Diag phys: 6

# Residents Who Entered Board Exam Process

- ABR: 48
- CCPM: 8
- ABMP: 0
- ABSNM: 0
Job demand per year (2010): ~200
Students graduating per year (2009): ~200-220
Estimated CAMPEP residency slots per year needed (2014): ~170-205
CAMPEP Residency slots per year available (2010): ~60-100

Projections from Center for Health Workforce Studies (presented at AAPM, July 21, 2010)
- Slight oversupply of MP graduates 2010-2013
- Slight undersupply of MP residents available for job market 2015-2017
- Substantial shortage of MP residents available for job market >2017
- Lack of residencies will be the bottleneck, unless substantial number of residencies are created by 2014
- Impact of long-term substantial shortage may mean that associated fields will step in and take on tasks customarily done by MPs, resulting in long-term loss of MP jobs in the field

Reminder: ABR Deadlines
- Must have application accepting by Sept 30, 2010 in order to meet the 2012 ABR mandate if not in a CAMPEP accredited program
- Must have application accepted by Sept 30, 2012 in order to avoid the 2014 residency requirement mandate
- Can apply later in the year if graduation takes place between Sept 30 and Dec 31
- Late filing deadline of Oct 31 with a late fee
- PhD students must ensure they do not exceed the time limit between Part 1 and Part 2; may want to defer Part 1 until later in their graduate training
- MS students generally should sign up to take Part 1 by Sept 30 in the year they enter graduate school
- Important to confirm these deadlines directly with the ABR
### Other items of note

- ABR will be turning over responsibility for determining Part 1 eligibility to CAMPEP through accreditation process
- Programs must have an approved mechanism for non-physics majors to meet eligibility requirements
- If you are a non-physics major, you MUST meet these eligibility requirement for undergraduate physics minor if you intend to take the ABR exam
- CAMPEP is now starting a registry for all board-eligible students in accredited programs; this will enable students not interested in taking the ABR exam to bypass the CAMPEP requirements

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### Thank you

For comments or questions:

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www.sdampp.org