The Role of CAMPEP in Education and Training of Medical Physicists

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CAMPEP is a nonprofit organization whose objectives are the review and accreditation of educational programs in medical physics

The mission of CAMPEP is to promote consistent, high quality education and training of medical physicists from graduate school through professional practice by accrediting education programs that meet defined standards.

Graduate Programs
Residency Programs
Continuing Education Programs

Who are We? We are you

- CAMPEP is an umbrella organization with a board comprised of two representatives from each sponsoring organization:
  - American Association of Physicists in Medicine
  - American College of Medical Physics
  - American College of Radiology
  - Canadian College of Physicists in Medicine
- Criteria for sponsorship requires "a purpose (in whole or in part) of promoting medical physics".

Organization

- Officers
  - President and Chairman of the Board – John Hazle
  - Vice President – Tim Solberg
  - Secretary/Treasurer – Geoff Clarke
- Directors
  - Charles Coffey, Gino Fallone, Bill Hendee, Rich Maughan, and Ervin Podgorsak
- Standing committees
  - Graduate Education Program Review Committee (Ed Jackson)
  - Residency Education Program Review Committee (Bruce Gerbi)
  - Continuing Education Review Committee (Bruce Thomadsen)
- Task Groups
  - Professional degree accreditation requirements (Geoff Clarke)

Who defines "the education standard"?

- The standards for education are determined by the collective bodies of associations representing professional medical physicists.
  - AAPM
  - ACMP
  - ACR
  - CCPM
  - SNM
  - ISMRM

CAMPEP's role

- To assist in development of educational standards that meet practice expectations defined by appropriate professional societies.

- To verify that these standards are being adhered to by those organizations participating in the educational process.

- Our success should be measured by the Board pass rates of those educated in CAMPEP programs:

  ABR, ABMP, CCPM, ABSNM

CAMPEP

Commission on Accreditation of Medical Physics Educational Programs, Inc.

Graduate Education Programs

- Guidelines for Accreditation
- Application Template
- Accredited Programs

2009 ABR UPDATE

Residency Education Programs

- Guidelines for Accreditation
- Application Template
- Accredited Programs
- Residency Program Funding from Medicare

Continuing Education Programs

Attendees get Transcripts here

Board of Directors

Review Committee Chairs

Policies and Procedures

Bylaws

Contact Information

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ABOUT CAMPEP

» 2009 ABR UPDATE «

Please see the linked document for important changes to graduate and residency qualifications related to the changes in the criteria for ABR certification.

CAMPEP is a nonprofit organization whose objectives are the review and accreditation of educational programs in medical physics.

Accreditation is a voluntary, non-governmental process of peer review, the objective of which is to ensure a program or institution has met a defined standard. Thus accreditation serves as public recognition that a program provides a quality service or education.

Accreditation is sometimes confused with certification. In general, institutions and programs are accredited and individuals are certified. Some examples of types of institutions that may be accredited are health care institutions such as hospitals and educational institutions such as colleges or universities. More information on general accreditation of healthcare organizations can be found from the Joint Commission on Accreditation of Healthcare Organizations (**www.jcaho.org**) and of higher education from the Council for Higher Education Accreditation (**www.chea.org**).

CAMPEP offers specialized accreditation of medical physics educational programs such as degree-granting programs, clinical residencies, continuing education and short courses. In some instances, CAMPEP accreditation of a program may permit students to receive funding in the form of scholarships, loans or grants.

The **Process** of CAMPEP accreditation of degree granting and clinical training programs requires that the program submits a self assessment report giving evidence of compliance with requirements. After review of this report, a survey team conducts a program site visit to validate the assessment. If successful, accreditation is granted for a period of 5 years. Renewal requires submission of an updated self assessment report.

The **Survey Team** consists of senior medical physicists with experience in both clinical practice and educational programs. Generally, the survey team will also include a physician.

Medical Physics is the application of physics and related sciences to the practice of medicine. More information on medical physics may be obtained from the 4 sponsoring organizations of CAMPEP.

Introducing CAMPEP Online Application Submission System and Medical Physics Continuing Education Credit (MPCEC) Repository

Once you have accessed the CAMPEP system, you can:

- Submit an Educational Program or Activity Application
- Update your personal Profile record maintained in the database
- Access your personal CAMPEP Transcripts for approved programs held after April, 2006

Guidelines for Accreditation
of
Graduate Educational Programs in Medical Physics

Commission on Accreditation
of
Medical Physics Educational Programs

June 1998
Revised May 2009

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AAPM REPORT NO. 79
(Revision of AAPM Report No. 44)

ACADEMIC PROGRAM RECOMMENDATIONS FOR GRADUATE DEGREES IN MEDICAL PHYSICS

A Report Of The Education And Training
Of Medical Physicists Committee

November 2002

Published for the
American Association of Physics in Medicine
by Medical Physics Publishing

AAPM REPORT NO. 79

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Undergraduate Preparation

Students entering a medical physics graduate educational program shall have acquired a strong foundation in basic physics. This should be documented by either an undergraduate degree in physics or a degree in a related engineering or physical science with coursework equivalent to a minor in physics (includes at least three upper level undergraduate courses). If applicants with deficiencies in their physics background are conditionally admitted to the program, the provision for remedial education in physics shall be provided, documented and described in the self-study

Accredited graduate programs

- There are currently 21 CAMPEP accredited graduate programs in North America.
  - 15 in the U.S.
  - 6 in Canada
- These programs produce ~150 graduates per year.
- Programs are accredited to provide "general" medical physics education (therapy, diagnostic and nuclear medicine fundamentals).
- Training essentials come from AAPM TG #79.
- Potential for 5-10 new programs in next 5 years.

CAMPEP accredited graduate programs

- Columbia University
- Duke University
- East Carolina University
- Louisiana State University
- McGill University
- University of Alberta
- University of British Columbia
- University of Calgary
- University of California at Los Angeles
- University of Chicago
- University of Cincinnati
- University of Florida
- University of Kentucky
- University of Manitoba
- University of Oklahoma
- University of Texas HSC at Houston/M. D. Anderson
- University of Texas HSC at San Antonio
- University of Wisconsin
- Vanderbilt University
- University of Victoria – BCCA
- Wayne State University

Guidelines for Accreditation of Residency Education Programs in Medical Physics

Revised: May 2009

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AAPM REPORT NO. 90
(Revision of AAPM Report No. 36)

Essentials and Guidelines for Hospital-Based Medical Physics Residency Training Programs

Report of the Subcommittee on Residency Training and Promotion

of the

Education and Training of Medical Physics Committee of the AAPM Education Council

August 2006

AAPM REPORT NO. 90

Essentials and Guidelines for Diagnostic Imaging Physics Residency Training Programs

CHAPTER 2

Essentials and Guidelines for Nuclear Medicine Physics Residency Training Programs

CHAPTER 3

Essentials and Guidelines for Radiation Oncology Physics Residency Training Programs

3.4.1 Length of Training

A clinical training period of at least 2 years is required following graduate school (see section 3.3). The organization of the training will depend somewhat on the organization of the clinical activities of the radiation oncology facility. However, in general, the first resident year should provide a broad experience in clinical radiation oncology physics. The purpose of the first year is to provide the physicist with the capability of managing, either alone or with others, the broad range of clinical physics tasks for patients under care in a radiation oncology department.

The second year of training builds on the first year, both in level of responsibility and in undertaking training in special topics such as commissioning of treatment machines and treatment planning systems. In addition, training in special treatment procedures, such as intensity-modulated radiation therapy (IMRT), stereotactic radiosurgery (SRS), total body irradiation (TBI), total skin electron treatment (TSET), intravascular brachytherapy (IVB), and prostate seed implants (PSI) may be delayed until the second year.

During these 2 years, clinical research and development projects may be included as part of the clinical training program. In addition, a reasonable and justifiable amount of the clinical training experience may take place at affiliated institutions.

Graduate Preparation

The AAPM TG-90 report stipulates that candidates for residency programs should have completed the didactic material in TG-79. However, the timing for completion of this material was vague. Because a majority of candidates entering residency programs have come from non-accredited medical physics programs or non-medical physics graduate programs (physics, nuclear engineering, etc.), we have given residency programs significant latitude in the interpretation of this requirement. However, this gives rise to a significant disparity in the preparation of residents to begin their clinical training. To better homogenize the experience gained in the two-year residency program, and in recognition of the need to focus the residency period on clinical experience rather than didactic education, CAMPEP now requires that

the didactic components of AAPM TG Report 79 shall be completed prior to the candidate beginning the two-year clinical training of a residency.

CAMPEP residencies

- There are currently 31 CAMPEP accredited residency programs.
  - 28 therapy; 21 in the U.S., 7 in Canada
  - 3 diagnostic; 2 in the U.S., 1 in Canada
- These programs produce ~50 trainees per year.
- Accreditation is obtained by specialty area
  - Therapy, diagnostic radiological or medical nuclear
- Training essentials come from AAPM TG #90.
- Potential for 20-40 new programs, and many satellites, over the next 5 years.

CAMPEP accredited residency programs

- CancerCare Manitoba
- Cross Cancer Institute – University of Alberta*
- Duke University
- London Regional MC
- Mayo Clinic
- McGill University
- Ottawa Hospital
- Stanford Medical Center
- SUNY Stony Brook *
- Thomas Jefferson University
- Tom Baker Cancer Center
- University of California at Irvine
- University of Chicago
- University of Florida
- University of Iowa
- University of Louisville
- University of Minnesota
- University of Nebraska
- M. D. Anderson – Orlando
- UT M. D. Anderson*
- University of Toronto
- University of Wisconsin
- Vanderbilt University
- Virginia Commonwealth University
- Washington University

*** Both therapy and diagnostic.**

2012/2014 Initiatives

A common premise among all 24 certification boards of the American Board of Medical Specialties, including the American Board of Radiology, is "To achieve initial certification, each board requires 3 to 6 years of training in an accredited training program and a passing score on a rigorous cognitive examination."

T. A. Brennan, "The role of physician specialty board certification status in the quality movement," JAMA 292, 1038–1043 2004.

ABR 2012 requirements

- Must be enrolled in or graduated from a CAMPEP accredited training program (graduate or residency) to sit for Part II of the exam
- Approximately 200 trainees will qualify (150 from graduate programs and 50 from residency)
- Manpower estimates are 200-300 new medical physicists will be needed per year

- Pretty close to meeting manpower needs and can imagine programs ramping up to bridge this gap

ABR 2014 requirements for the future

- Must be enrolled in or graduated from a CAMPEP accredited residency program to sit for the exam
- Proposed by AAPM
- Approximately 50 trainees will qualify from current residencies
- Manpower estimates are 200-300 new medical physicists will be needed per year

- **No way to bridge this gap!**

Issues facing CAMPEP due to 2012/2014

1. Accreditation of "satellite" residency programs (including single mentor situations).
   - Moving to affiliated program model.

2. Accreditation of professional degree programs (i.e., Doctor of Medical Physics).
   - Continues to be an issue. Program in progress at Vanderbilt and Texas Tech. Several other programs have indicated that they are exploring this option.

Arguments for DMP

- In 2014 the American Board of Radiology will require candidates to have completed a CAMPEP accredited clinical training program (i.e., residency) to be eligible to sit for Part II of the examination.
- Demand for medical physicists is somewhere between 200-300 new positions per year.
- Current residency programs graduate only about 50 trainees

Residency financial model may not be sustainable

- To add 150 new residency positions will cost approximately $1,350,000 per year in stipends (150 x 2 x $45,000).
- Will require about 20 new faculty positions to support the additional clinical training load. This comes to about $4-5M per year.
- Even if residents didn't pay tuition, this is not a sustainable model.

DMP Arguments

- Two years of didactic graduate work and two years of clinical experience are equivalent to M.D., D.D.S. and D.V.M. degrees, all recognized professional doctorates.
- Trainees will pay tuition on a scale comparable to medical, dental and veterinary school.
- Trainees will be eligible for low interest student loans.
- M.S. level physicists will not be competitive for the 50 residency slots and, therefore, that degree pathway will go away. These folks currently represent a significant fraction of the entering workforce.

Remaining challenges for D.M.P.

- Get programs established.
  - Vanderbilt is in the final throws of getting approval.
  - UT San Antonio and Texas Tech is also in the process of developing a program.
  - Several other existing CAMPEP accredited graduate programs are exploring the possibility.
- Working out funding details.
- Having the degree recognized by hospitals as a professional doctorate and providing similar benefits as holders of Ph.D.s.

Summary

- CAMPEP is actively involved in discussions about educational activities related to 2012 and 2014.

- CAMPEP philosophy is to be flexible with accreditation requirements (i.e., alternate pathways – including DMP) **while maintaining quality**.

- CAMPEP is discussing avenues for potential accreditation of international educational programs

ACMP needs to become more proactive in educational matters

Related Efforts

- AAPM Working Group on Coordination of Medical Physics Residency Programs – John Bayouth
- AAPM Working Group on a Professional Doctorate Degree for Medical Physics – Charlie Coffey
- AAPM TG-131 Medical Physics Training in Developing Countries in the Region – Art Boyer
- AAPM TG-133 Alternative Clinical Medical Physics Training Pathways for Medical Physicists – Mike Herman
- AAPM TG-168 Evaluation of Formation of Society of Directors of Academic Medical Physics Programs – Ehsan Samei, James Dobbins

Thank you