

Acquiring initial American Board of Radiology certification in the United States

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The American Board of Radiology (ABR) is one of 24 independent national boards that are members of the American Board of Medical Specialties (ABMS). It was founded in 1934 to certify physicians in Radiology, and later in other various specialties and sub-specialties related to radiology. It is a not-for-profit organization, and its only purpose is the certification of medical professionals. In 1948, it began the certification of medical physicists. It is unusual for non-physicians to be certified by a national board that is a member of the ABMS. The ABR is currently the only national board in the US that certifies medical physicists. You can see some of the details for initial certification at this site: <http://www.theabr.org/ic-rp-landing>.

It should be noted that the certificate is not unconditional. The certificate is time-limited and must be renewed periodically through a "Maintenance of Certification" process. Maintenance of Certification is a lengthy discussion and beyond the scope of this article. More information on Maintenance of Certification can be found here: http://www.theabr.org/sites/all/themes/abr-media/pdf/4PanelBrochure_MP.pdf.

The purpose of this article is to discuss practically how to prepare to be admitted to initial ABR certification. There is currently a phase-in of new eligibility criteria, which may be reviewed at the first link, above. Simply, the expectation of the ABR is that the medical physicist should complete a residency program accredited by Commission on the Accreditation of Medical Physics Education Programs (CAMPEP). The website is: <http://www.campep.org/>.

Residency programs are in therapy and imaging physics. They are found throughout the United States and Canada. There is one program in Ireland. Some programs offer a nuclear medicine physics option. A list of CAMPEP-

accredited medical physics residency programs can be found here: <http://www.campep.org/campeplstres.asp>.

The medical physics residency program is two or three years in length, and consists of several academic, clinical and research components. Some residency programs require additional research training which adds a third year to the program. Details of the structure of medical physics residency programs are specified in American Association of Physicists in Medicine (AAPM) report 249: http://www.aapm.org/pubs/reports/RPT_249.pdf.

So far, we have established the pathway to enter the field of medical physics in the United States is the ABR Certification, and the means to enter the certification pathway is to graduate from a CAMPEP accredited medical physics residency program. So how do you successfully apply and gain admittance to a CAMPEP residency program? There are two ways. The standard pathway for most applicants is to complete a CAMPEP-accredited graduate program with either a master's or a doctorate degree. The list of CAMPEP-accredited graduate programs is found at this link: <http://www.campep.org/campeplstgrad.asp>.

Either a master's or doctorate degree that is CAMPEP-accredited is a sufficient credential to qualify the candidate to compete for a CAMPEP-accredited residency program. Master's and doctorate graduate compete for these residency positions on approximately equal terms. It should be noted that there are more graduates of CAMPEP graduate programs than there are CAMPEP residency programs, so there is a challenging competition for entry into the CAMPEP residency programs. Simply graduating from either CAMPEP-accredited graduate program does not guarantee entry into any residency program. See these editorials from the Journal of Applied Clinical Medical

Physics for more information on this situation:

- ❖ <http://www.jacmp.org/index.php/jacmp/article/view/4729/3168>
- ❖ http://www.jacmp.org/index.php/jacmp/article/view/4932/pdf_68
- ❖ http://www.jacmp.org/index.php/jacmp/article/view/5011/pdf_99

Please check the third JACMP editorial link above for trends respecting how one master's program is seeking to provide advantages for students seeking a residency after graduating from a master's graduate program.

The medical physics community has long recognized the important contributions to the discipline from individuals with a variety of doctorate academic backgrounds. Consequently, CAMPEP has developed an alternate pathway for such individuals. The requirements for an alternate pathway are as follows:

- (I) Satisfactory completion of a doctorate degree in physics, physical science, or engineering with either an undergraduate degree in physics or at least three upper-division (3rd or 4th year undergraduate) physics courses.
- (II) Satisfactory completion of the following six graduate-level courses:
 - ❖ Radiological Physics and Dosimetry;
 - ❖ Radiation Protection and Safety;
 - ❖ Fundamentals of Medical Imaging;
 - ❖ Radiobiology;
 - ❖ Anatomy and Physiology;
 - ❖ Radiation Therapy Physics.

Note that this alternative pathway is not open to

graduates of master's degree programs. More information about the alternative pathway as a means to enter the medical physics profession can be found here: <http://www.campep.org/ProspectiveApplicants.asp>.

The courses above may be taken in either a CAMPEP-accredited graduate program or a CAMPEP-accredited certificate program. A listing of CAMPEP-accredited certificate programs may be found at this link: <http://www.campep.org/campeplstcert.asp>.

There is currently one program in the United States that combines the equivalent of a CAMPEP-accredited master's graduate program and a CAMPEP-accredited residency program into a single program. This is the Professional Doctorate program in medical physics offered by the Vanderbilt University. It is available in either a therapy or imaging track. This program has the advantage that if you are admitted and perform well, you do not have to compete for a residency after completing the graduate portion of the program. The degree is a professional doctorate and is granted at the completion of the entire program with includes the residency component.

The pathway to ABR certification is long and complex. It is helpful to start thinking about the various pathways and opportunities early so you do not waste time. In particular, it is important to understand how to prepare to compete for the limited residency slots that are available. Medical physics is a rewarding career, but it is also one that is both challenging and complex.

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