Medical Physics

Administrative Unit: Medical Physics
College/School: School of Medicine and Public Health
Admitting Plans: M.S., Ph.D.
Degrees Offered: M.S., Ph.D.
Minors and Certificates: Doctoral Minor

One of the basic science departments of the UW–Madison School of Medicine and Public Health, the Department of Medical Physics offers comprehensive training in diagnostic and therapeutic medical physics and in health physics. Achievement of the M.S. or Ph.D. in this department reflects strong scholarship in one of the top medical physics programs in the United States. Graduates are prepared for teaching, research, and clinical physics positions in medical centers, national laboratories, and universities, and in the medical and nuclear technology industries.

Medical physicists may participate professionally in the radiation treatment of cancer patients, in advanced medical imaging and diagnostic procedures, or in related areas of research and teaching. Health physicists may operate radiation protection programs at nuclear industrial facilities, hospitals, or laboratories, or may perform research on methods of measuring ionizing radiations (i.e., dosimetry).

A unique quality of the medical physics program is the broad range of expertise and research interests of the faculty. Students receive training in diagnostic x-ray physics, x-ray computerized tomography, magnetic resonance imaging and spectroscopy, nuclear medicine and positron emission tomography (PET) imaging, biomagnetism, medical ultrasound, elastography, radiation dosimetry, radiation treatment planning, and radiobiology.

The Ph.D. is primarily a research degree that extends the student’s depth of knowledge in one of the specialty areas. Faculty positions at universities, research positions, and an increasing number of clinical physics positions require the Ph.D. degree. Medical physics faculty maintain close collaborative ties with faculty in other departments, including human oncology, radiology, cardiology, medicine, psychiatry, and pharmacology, broadening the scope of research opportunities open to medical physics students and providing access to sophisticated clinical facilities.

The department also houses the Medical Radiation Research Center and Accredited Dosimetry Calibration Laboratory, one of four in the U.S. accredited by the American Association of Physicists in Medicine. In addition, the department provides clinical support services to the radiology and human oncology departments. It also operates a PET radiotracer production facility, a medical image analysis laboratory, and a small bore MRI scanner in the medical school’s small animal imaging laboratory. Each of these facilities provides unique training and support for graduate students.

DEGREES/MAJORS, DOCTORAL MINORS, GRADUATE/PROFESSIONAL CERTIFICATES

- Medical Physics, Doctoral Minor (http://guide.wisc.edu/graduate/medical-physics/medical-physics-doctoral-minor)
- Medical Physics, M.S. (http://guide.wisc.edu/graduate/medical-physics/medical-physics-ms)
- Medical Physics, Ph.D. (http://guide.wisc.edu/graduate/medical-physics/medical-physics-phd)

PEOPLE

Faculty: Professors Jackson (chair), Alexander, Bayouth, Block, Campagnola, Chen, Christian, DeJesus, DeWerd, Fain, Grist, Hall, Henderson, Jeraj, Korosec, Meyerand, Peppler, Reeder, Thomadsen, Varghese, Wakai; Associate Professors Brace, Cai, Emborg, Ranallo, Vetter, Weichert, Wieben; Assistant Professors Bednarz, Birn, Culberson, Kissick, Li, Nagle, Prabhakaran, Smilowitz, Speidel; Emeritus Professors DeLuca, Holden, Mackie, Madsen, Mistretta, Nickles, Paliwal, Van Lysel, Zagzebski