MEDICAL PHYSICS, PHD

The Department of Medical Physics at UW–Madison's School of Medicine and Public Health is the first medical physics department in the United States and home to the largest group of medical physics doctoral students in the world. Achievement of the PhD degree in this department reflects strong scholarship and research in the physics and engineering of diagnostic and therapeutic systems. Graduates are prepared for teaching and research positions in universities, national laboratories, and the medical and nuclear technology industries, as well as for admission into medical physics residency programs to become board-eligible for clinical medical physics positions.

Faculty in the department focus on discoveries in imaging and therapy systems that translate into new clinical techniques or the development of new products through industry collaboration and venture entrepreneurship. The department's faculty expertise spans fields such as x-ray physics, computed tomography (CT), magnetic resonance imaging (MRI), positron emission tomography (PET) imaging, biomagnetism, ultrasound, radiation dosimetry, radiation treatment planning, and radiobiology. Students benefit from a curriculum that provides in-depth training in these specialties, supported by advanced resources, including the Medical Radiation Research Center and an Accredited Dosimetry Calibration Laboratory. Additional facilities, such as the PET radiotracer production unit and Small Animal Imaging Facility, along with clinical scanners from all major medical imaging modalities, offer unique research and clinical training opportunities.

Collaborations with departments like Radiology, Human Oncology, and Biomedical Engineering further enrich the training experience, providing access to sophisticated clinical resources and fostering interdisciplinary research. The program's comprehensive research focus prepares students to become leaders in medical physics, with many alumni pursuing impactful careers in academia, clinical practice, and industry.