

THE DOCTOR OF MEDICAL PHYSICS DEGREE (DMP)

A NEW DOCTORAL LEVEL CLINICAL DEGREE

The Texas Tech University College of Arts and Sciences

Executive Summary

Background

The modern practice of clinical Medical Physics, in the treatment of cancer, complements and draws on medical specialties including Diagnostic Radiology, Radiology of Nuclear Medicine, and Surgical, Gynecologic, Urologic, and Dental Oncology. Medical Physics is recognized by the American Board of Medical Specialties under the auspices of the American Board of Radiology (**ABR**). Physicists with these credentials are the only professionals currently eligible for the mandatory licensure in the State of Texas. By 2012, examinees will be required to have completed or be enrolled in a degree program accredited by the Commission on Accreditation of Medical Physics Educational Programs (**CAMPEP**).

There is a national shortage of properly credentialed professionals entering the field of Medical Physics. The annual demand is for about 300 to 350 new physicists in the U.S. while only 50 to 60 are being trained, currently. Furthermore, the need is for providing both academic training and clinical experience. Existing programs within the U.S. are providing academic degrees in physics or medical physics but without clinical training and hands-on experience, thus, requiring additional on-the-job training post graduation and resulting in the current high failure rate (50%±) for Board certification. The need is for a duality in training to prepare students to sit for examinations under the ABR.

We propose a unique interdisciplinary clinically oriented degree program with training in both academics and medicine that meets CAMPEP's requirements for accreditation. Such a degree program does not exist currently within the U.S. and would not compete with existing Ph.D programs in physics.

Goals of the Program

1. To train clinically oriented physicists who share knowledge with and can communicate and collaborate with their Radiation Oncology colleagues and are positioned to enhance the quality and continuity of patient care.
2. To offer a degree that meets the needs of the profession of Medical Physics in both academic and clinical training. Within the U.S., such a degree will be unique to TTU and TTU/HSC.

Approach

The concept for this degree is that initially, graduate students take the first year core courses in the TTU/HSC School of Medicine (SoM) taken by all first-year medical students. Additionally during the first 3 years, specific in-depth courses relevant to Medical Physics are taken within the Texas Tech College of Arts & Sciences including the Departments of Physics, Biology, Chemistry and Biochemistry,

Mathematics, and Psychology. During these first years, students also take a designated series of Medical Physics practicums that provide the needed specific clinical experiences. This is followed by hospital residency programs in the fourth and fifth years and the first and second Board Reviews. Students graduate at the end of the fifth year and begin a final Fellowship year of specialization in their selected area of interest and are then ready to sit for the final oral examination by the ABR.

This program has been given support by both Texas Tech University and the TTU/HSC SoM. Other universities are now considering following the Texas Tech example and using this as a model to develop their own programs. These universities include the University of Wisconsin, The University of Florida, Duke University, Washington University in St. Louis, and Vanderbilt University in Tennessee.

This new program is a unique opportunity for partnering between Texas Tech University and the TTUHSC SoM, is indeed a 'first of its kind' in the United States, and prepares students for successful careers in a high-demand profession.