Proposal for a Graduate Certificate in Molecular Diagnostics
Submitted by the Department of Medical Laboratory Sciences
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Introduction and Rationale - Molecular diagnostic tests are increasingly used in many major areas of laboratory medicine including genetic disorders, infectious diseases, cancer, pharmacogenetics and DNA-based identity testing. Laboratories doing molecular testing report that they have difficulty finding adequate personnel to fill current employment positions. As more is learned about the human genome and disease the number of molecular-based laboratory tests is expected to increase exponentially. It is predicted that the future will bring an even greater need for laboratory scientists in this rapidly evolving field. The current preparation in molecular diagnostics is limited in most clinical laboratory science programs, which have a traditional emphasis on the areas of immunohematology (blood banking), clinical chemistry, hematology, immunology, microbiology, and urinalysis/other body fluids. The knowledge gap is even greater for laboratory professionals who received their training more than five years ago.

The intent and goal of this graduate certificate is to combine three currently offered graduate courses into a ***Graduate Certificate in Molecular Diagnostics.*** The Graduate Certificate in Molecular Diagnostics will provide professional education and hands-on training at the graduate level focusing on the molecular identification of inherited and acquired genetic conditions, infectious disease and identity testing. Graduates of the program will be eligible to sit for the national certification examination in molecular biology from the American Society for Clinical Pathology - MB(ASCP).

1. Primary target audience and estimated enrollment potential: This program is designed for working clinical laboratory professionals in need of updating their skills and knowledge to meet the demands of modern molecular biology applications. Individuals working in *veterinary, forensic, industrial, and pharmaceutical laboratories will also find the content pertinent.* Individuals seeking certification in molecular biology from the American Society for Clinical Pathologists (ASCP) BOC will find the courses provide solid preparation for the national credentialing examination.

2. Certificate's competitive advantage: The didactic and hands-on laboratory components of the curriculum makes the certificate program attractive for working professionals. The proximity of the University of Delaware to those living/working in Delaware as well as southern New Jersey, Eastern Maryland and the Philadelphia suburbs make attending the program highly feasible.

Program Description
The Certificate in Molecular Diagnostics requires satisfactory completion of three (3) graduate level courses (9 credits) as detailed below. Each certificate program course must be completed with a grade no lower than a B-; the overall GPA of the Certificate in Molecular Diagnostic courses must be no lower than 3.0.

The three courses are:

MEDT 690 Genetic & Molecular Diagnostics for the Clinical Lab
MEDT 691 Molecular Diagnostics
MEDT 692 Application of Molecular Diagnostic Techniques

Requirements for Enrollment

1. Applicants must hold a bachelor 's degree from an accredited four-year college or university with a minimum grade point average of 3.0 on a 4.0 system.
2. Applicants must have undergraduate degrees in chemical or biologically related disciplines.
3. International applicants must demonstrate a satisfactory level of proficiency in the English language if English is not their first language. The University requires an official TOEFL score ofat least 550 on paper-based, 213 on computer-based, or 79 on Internet-based tests. TOEFL scoresmore than two years old cannot be considered official. Alternatively, IELTS can be accepted in the place of the TOEFL. The minimum IELTS score is 6.5 overall with no individual sub-score below 6.0.