

Master of Science in Professional Science (MS-PS)

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Master of Science in Professional Science (MS-PS)



Background and Purpose

The Sloan Foundation (now part of the Council of Graduate Schools)

- Reputation as a prestigious national organization
- Founded the MBA program concept
- Determined the need to have science-oriented professionals in middle and higher management levels
- We owe the Sloan Foundation great thanks for funding the MS-PS program at Middle Tennessee State University

Professional Science Masters

- The PSM program has attracted more women than any other math and science graduate degrees due to its 2-year duration, high starting salaries, practicality, and flexibility.
- PSM programs are well-connected with industry.
- Masters degrees are able to contribute to a highly skilled workforce for your state--this is because graduate students tend to remain in the local region after graduation.

MTSU's MS-PS Program

- The only one of its kind in Tennessee
- A growing and highly trained workforce will attract more technology companies to our state
- Includes the following:
 - Advanced Disciplinary Science Training
 - Interdisciplinary Connections Through
 - the fusion of science in a manner that meets the needs of businesses
 - the integration of natural sciences and mathematics with training in accounting, law, management, leadership, and communication techniques

Who Should Apply and Why

- The MS-PS degree is designed for anyone interested in mathematics, science, health-related science, or business with some related job experience or undergraduate education to that of the chosen concentration
- Reports from the Department of Labor indicate an increasing demand for individuals with master's level training with a specialty in science such as biostatistics, biotechnology, and health care informatics

Crowning Qualities of MS-PS

- The MS-PS degree gives students a cutting edge education in order for them to enter the modern scientific and professional workforce.
- MS-PS graduates are able to serve two components of one job—the result is increased efficiency of communication between the realms of science and business.
- The unique combination of science and/or math with additional skills in business, information technology, and policy will assist individuals in the middle Tennessee area to meet current and future employment needs and to develop new workforce opportunities.

Crowning Qualities of MS-PS

- The MS-PS program is non-thesis; instead, an industrial internship is required.
- The student is placed in the work field to gain hands-on experience and apply classroom principles, and is required to provide reports a professional presentation based upon this experience.
- Internships serve as a transition, help students to sharpen their skills before entering the workforce, and introduce students to potential employers.

Admission Requirements

Admission to the MS-PS program has the same requirements as existing graduate programs including:

1. Application for admission
2. Application fee

Nine hours of course work may be taken before the following are received:

1. Official transcripts certifying coursework from each college or university attended
2. Three letters of reference
3. A Graduate Record Examination (GRE) score of 900 is expected for consideration for unconditional admission

General MS-PS Requirement

- Completion of a basic applied statistics course (MATH 1530, STAT 5130, or the equivalent) with a grade of C (2.0) or better



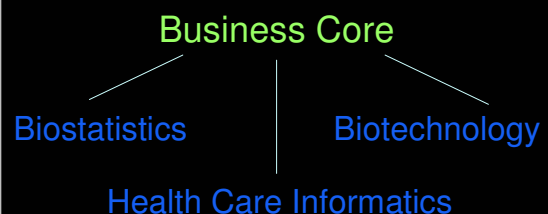
Degree Requirements

36 graduate level hours of the following:

- 15 hours of core (business) courses
- 21 hours of courses from the respective concentrations



MS-PS Concentrations



Biostatistics Concentration



Biostatistics

- The Biostatistics concentration provides training in statistical methods that can be applied to biomedical and health-related fields.
- Additional Admission Requirements
 - Completion of Multivariate Calculus (with a grade of C or better)
 - Completion of Linear Algebra (with a grade of C or better)



Biostatistics Curriculum

- A mix of theory, application, and realistic problem solving in Biostatistics
 - Probability and Statistics Theory Sequence
 - Application Options
 - Regression, Experimental Design, Nonparametrics
 - Biostatistics Content Focus
 - Clinical Trials, Sample Survey Analysis, Categorical Data Analysis, Survival Analysis
 - Realistic Problem Solving: Biostatistics Focus

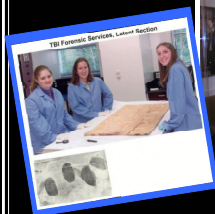
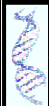


Biostatistics Career Opportunities

- Statistical methods training for biomedical and health-related fields
 - Health Care Agencies
 - Pharmaceutical Industry
 - Governmental Agencies
 - National Institutes of Health
 - Environmental Protection Agency
 - Centers for Disease Control and Prevention



Biotechnology Concentration



Biotechnology

- Biotechnology is technology based on biology, especially when used in agriculture, food science, and medicine.
- Biotechnology studies prepare students for careers in the management of bioscience firms and organizations.
- Opportunities include research science positions in laboratories applying biotechnology to problems in medicine, industry and agriculture and management positions in the biotechnology and pharmaceutical industries.
- With the growth of positions in the biotechnology industry in Tennessee and nationwide, the demand for persons with training in both biological science and management is expected to grow significantly.



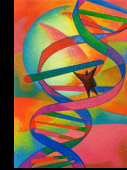
Biotechnology Career Preparation

- Careers: science management
 - academic, government, industry
 - liaison between and participant traditional science and business
- Skills: communication, leadership, problem-solving, quantitative, life-long learning
- Knowledge: business content and biology content tailored to the student's goals



Biotechnology Admission Requirements

- Bachelor's degree in biology or chemistry: have taken genetics with a grade of C (2.0) or better
- Bachelor's degree in another field: have taken organic chemistry and 3 biotechnology related courses including genetics

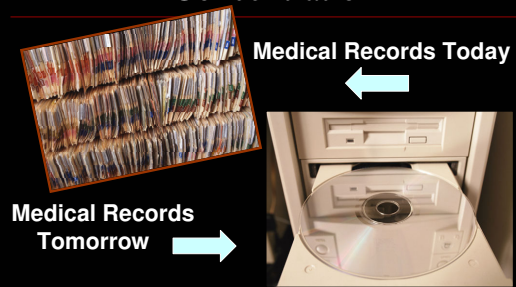


Biotechnology Program and Course Issues

- Wide variety of electives to suit an individual's professional goals
- Nearly all courses have a crucial lab research component (content skills)
- Proven record with biotechnology internships (>50 in <4 years)



Health Care Informatics Concentration



Health Care Informatics

- Plays an important role in all aspects of health care delivery and public/personal health promotion through the use and transfer of information within the health care sector, utilizing computer science, mathematics, and psychology.



Health Care Informatics Specific Admission Requirements

- Bachelor's degree in health care or work experience in a health-related field
- Applicants without this criteria may be admitted, but will be required to complete the appropriate prerequisite coursework



Health Care Informatics Careers

- Graduates of this concentration are expected to fill the growing need for health care administrators with training in the application of information technology to health care delivery.



Success of the MS-PS Program

- 32 Students enrolled in Spring 2006
- 42 are enrolled for fall 2006
- The first internship was in Spring 2006 at Blue Cross Blue Shield, where the student received a biostatistics job automatically after graduation.
- Industry loves it. Blue Cross Blue Shield is partnering with us because they believe that MS-PS is an excellent area for the growth of their company.
- We visited our Congressman Bart Gordon in Washington, D.C., and he's very supportive of the MS-PS program here.

The Future of MS-PS

- Due to the rapid growth of industries such as biotechnology, health care, and insurance businesses, companies across Middle Tennessee are beginning to look forward to the rewarding opportunities provided by the MS-PS degree.
- Educational resources provided by MS-PS will greatly benefit the future economies of Tennessee and the entire United States.

Contacts

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