

DATE: July 26, 2018

SUBJECT: New Academic Program
University of Memphis
Biostatistics, Master of Science
(CIP 26.1102 - Biostatistics)

ACTION RECOMMENDED: Approval

PROGRAM DESCRIPTION

The University of Memphis proposes a multidisciplinary Biostatistics Master of Science (MS) program designed to train students for positions in government and private health agencies, industry, and research institutes, and to prepare students who plan to enter a doctoral program in biostatistics or bioinformatics. The proposed program takes the existing biostatistics concentration within the Masters of Public Health program to a freestanding degree program, building upon its strengths in applied biostatistics. Graduates of the proposed degree will have the ability to collaborate with public health researchers by performing independent data analyses and applying up-to-date biostatistical methods to analyze public health data and interpret the findings for individuals, communities, and health care organizations. The program will be located in the School of Public Health.

INSTITUTIONAL GOVERNING BOARD APPROVAL

The proposed Biostatistics MS program was approved by the University of Memphis Board of Trustees on June 6, 2018.

PROPOSED IMPLEMENTATION DATE

Spring 2019

RELEVANCE TO INSTITUTIONAL MISSION AND STRATEGIC PLAN

The proposed Biostatistics MS program aligns with the University of Memphis' institutional mission to be a "learner-centered metropolitan research university providing high quality educational experiences while pursuing new knowledge through research, artistic expression, and interdisciplinary and engaged scholarship". The proposed Biostatistics MS program also aligns with the State Master Plan to meet the needs of economic, workforce, and research needs, and to increase degree production. The proposed program will provide for students a strong component of statistical theory and in-depth innovative practical training opportunities, which will result in competitive graduates who are more prepared for future career and research opportunities, which is an integral part of the University of Memphis mission.

CURRICULUM

The proposed program will consist of 36 semester credit hours with no new courses required. The curriculum consists of 6 hours in core courses devoted to epidemiology and public health; 21 hours of courses in applied biostatistics and theoretical framework of biostatistical methods; 6 hours of elective courses aligned with students' interest; and 3 hours of a thesis or master's project. All students are required to take a qualification exam at the end of year one.

PROGRAM PRODUCTIVITY

The proposed program projects an annual enrollment of 5 students the first year with 10 new students enrolling in subsequent years. Graduates are anticipated beginning in year three.

	2018-19	2019-20	2020-21	2021-22	2022-23
Enrollment (new students)	5	10	10	10	10
Total Enrollment	5	15	25	30	30
Graduates	--	--	5	9	9

PROGRAM DUPLICATION

No comparable Biostatistics Master of Science program embedded in a School of Public Health exists at a public university in Tennessee. Middle Tennessee State University offers a concentration in biostatistics within the Professional Science, Master of Science program. Vanderbilt University is the only private institution in Tennessee that offers both a master's and doctoral program in Biostatistics and these programs are offered within the School of Medicine.

EXTERNAL JUDGEMENT

As part of establishing a freestanding degree from a successful existing concentration, an external paper review was conducted in February 2018 by Dr. Jacob J. Oleson, Associate Professor of Biostatistics, Director of Graduate Studies in the Department of Biostatistics, and Director of the Center for Public Health Statistics in the College of Public Health at the University of Iowa. After reviewing the proposal and other relevant documents, Dr. Oleson stated *"I strongly recommend approval of the proposed program... People with an MS degree in biostatistics are sought after by employers who are seeking employees with a skillset that combines statistical knowledge, computing knowhow, and communication skills. The resources for an MS degree in biostatistics already exist at UoM, as the Division has based this MS degree off of an expansion of an already existing MPH degree...The University of Memphis is well placed to create an MS degree in Biostatistics with no modifications to the proposal. "*

STUDENT DEMAND

The University of Memphis conducted student and alumni interest surveys to determine the student demand for the proposed Biostatistics MS program. Among the students who responded to the survey, 100 percent indicated that adding the proposed program was a positive move for the School of Public Health and approximately 83 percent of respondents noted that they or someone they knew would be interested in the program. The University also assessed student demand by reviewing the 45 Biostatistics MS programs that are accredited by the Council of Education for Public Health. This analysis revealed that enrollment patterns were either stable or increased over time based on the past three years (2015-2017).

OPPORTUNITIES FOR PROGRAM GRADUATES

Overall, research institutes and health care companies in the Memphis area expressed a demand for the program and employment opportunities for biostatisticians with a MS degree in biostatistics. The U.S Bureau of Labor Statistics further supports this demand with the employment of biostatisticians projected to grow 34 percent by 2024. Additionally, a 2015 study conducted by Fortune projected 21 percent growth in the next five years with a median salary over \$110,000 for biostatisticians.

INSTITUTIONAL CAPACITY TO DELIVER THE PROGRAM

There are currently sufficient faculty in the School of Public Health and Department of Mathematical Sciences (n=20) who hold academic degrees in several discipline including biostatistics, statistics, epidemiology and environmental health that are qualified to provide instruction for the proposed Biostatistics MS program. The facilities, library resources, and software are adequate for this multidisciplinary program.

ASSESSMENT AND POST-APPROVAL MONITORING

The professional accreditation body for the Biostatistics MS is through the Council on Education for Public Health (CEPH). An annual performance review of the proposed program will be conducted by THEC staff for the first five years following program approval prior to the program being accredited by CEPH in July 2020 when the School of Public Health Review is scheduled for their next accreditation site visit. The review will be based on benchmarks established in the approved proposal.

The benchmarks assessed in the post-approval monitoring include enrollment and graduation, program cost, progress toward accreditation, and other metrics set by the institution and Commission staff. If benchmarks are not met during the monitoring period, the Commission may recommend that the institutional governing board terminate the program. If additional time is needed and requested by the institutional governing board, the Commission may choose to extend the monitoring period.