SPECIAL REPORT

of the

ACADEMIC PRIORITIES, GRADUATE AND
PROGRAM AND BUDGET COUNCILS

concerning

REVISION OF THE MASTERS IN PUBLIC HEALTH
WITH A CONCENTRATION IN BIOSTATISTICS

Presented at the
758th Regular Meeting of the Faculty Senate
April 28, 2016

COUNCIL MEMBERSHIP

ACADEMIC PRIORITIES COUNCIL

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GRADUATE COUNCIL


PROGRAM AND BUDGET COUNCIL

ACADEMIC PRIORITIES COUNCIL

The Biostatistics program in the Department of Biostatistics and Epidemiology would like to create two distinct tracks for the MSPH-Biostat: a 30-credit track for students with substantial prior quantitative training and a 45-credit track for students without this experience.

The Academic Priorities Council voted to recommend approval of the proposal at its meeting on March 24, 2016.

GRADUATE COUNCIL

The Academic Standards and Curriculum Committee (ASCC) met on February 3, 2016 and reviewed the proposal for a Revision of the Master of Science in Public Health with a Concentration in Biostatistics. The ASCC recommended this proposal for approval.

At its meeting on Wednesday, February 10, 2016, the Graduate Council unanimously approved the Revision of the Master of Science in Public Health with a Concentration in Biostatistics, Proposal #2506 in the Course and Curriculum Management System.

PROGRAM AND BUDGET COUNCIL

The Program Subcommittee of the Program and Budget Council met on February 10, 2016, reviewed the Revision of the Master of Science in Public Health with a Concentration in Biostatistics proposal and recommended it for approval.

At its meeting on February 17, 2016, the Program and Budget Council unanimously approved the Revision of the Master of Science in Public Health with a Concentration in Biostatistics, Proposal #2506 in the Course and Curriculum Management System.

MOTION: That the Faculty Senate approve the Revision of the Master of Science in Public Health with a Concentration in Biostatistics, as presented in Sen. Doc. No. 16-051.
**Proposal Development**

**A. Briefly describe the Proposal.**

The UMass Amherst Biostatistics Program, as part of the Department of Biostatistics and Epidemiology, currently offers an MS in Public Health with a concentration in Biostatistics. Hereafter, we will refer to this degree as an MSPH-Biostat. Currently this degree concentration requires students to complete 45 credits of coursework.

The Biostatistics program would like to create two distinct tracks for the MSPH-Biostat: a 30-credit track for students with substantial prior quantitative training and a 45-credit track for students without this experience.

The number of bachelor degrees in statistics awarded in the US has more than tripled in the last decade, leading to many potential applicants to the MSPH-Biostat program already having taken equivalent coursework to the proposed 15 “foundational” credits. By providing a track for many current and potential talented applicants to the MSPH-Biostat, we will enhance the competitiveness and talent-pool of applicants for this program.

**B. Provide a brief overview of the process for developing the Proposal.**

Biostatistics program faculty identified the need to modify the degree requirements in the summer of 2015. The entire faculty approved the idea of revising the program in September 2015. The UMass Biostatistics Curriculum Committee developed the proposal in consultation with the UMass Graduate School, the Undergraduate Program Director of the Public Health Major at UMass Amherst, and statistics faculty from the Five Colleges. The final proposal was reviewed and approved by all Biostatistics faculty.

**Purpose and Goals**

Describe the proposal’s purpose and the particular knowledge and skills to be acquired.

The proposed changes do not raise or lower the academic standards required to complete the program. The criteria for achieving the MSPH-Biostat degree will remain the same, and these standards are consistent with MS degrees in Biostatistics offered at other universities. The MSPH-Biostat degree trains students in modern statistical methodologies, including practical data management and analysis techniques. The program requires that students learn both theoretical foundations of statistical theory while also focusing on applications in epidemiology, biology, genomics, public health, and health sciences.

Students coming out of undergraduate programs in statistics typically have up to 15 credits of coursework that could be applied towards the MSPH-Biostats degree. Currently, the UMass Amherst MSPH-Biostat program requirements have explicit overlap with two courses that are required for the UMass Amherst undergraduate Statistics degree (STATS 515/516). Additionally, the content of three additional required courses for the MSPH-Biostat degree (BIOSTAT 540, BOSTAT 690NR, and STATS 597) also have strong content overlap with courses that are required or strongly recommended for a BS in Statistics (STATS 501, STATS 525, STATS 597).

The proposed changes will increase the Biostatistics program’s attractiveness to students with substantial prior quantitative training. Such students will no longer be required to go through the process of either transferring credits into the program or waiving credits. Upon admission to the program, students will be informed about which track they have been accepted into.

This prerequisite structure is similar to existing degrees at UMass. As one example, the M.Architecture program allows students to have different number of required credits to complete the program depending on prior experience. The MS in Nutrition at UMass Amherst is also a 30-credit track and a 45-credit track depending on prior coursework.
The proposed degree program is also similar to other biostatistics MS programs that have different tracks for students based on prior experience. See, for example, the attached descriptions of the MS Biostat degrees offered by Harvard. (*Please see Proposal #2506 in the Course and Curriculum Management System for this attachment.*)

Additionally, the proposed changes will not impact students who are applying to the Biostatistics program without substantial prior quantitative training. One of the strengths of the MSPH-Biostat program is that it because it sits at the interface of quantitative science and life sciences/public health, the field attracts students from a diverse array of academic backgrounds. The current 45-degree program provides students without substantial prior quantitative training (but meeting certain quantitative prerequisites, such as having taken Calculus III) with an “on ramp” into this exciting and rapidly growing field with a wealth of immediate employment opportunities after graduation. These applicants would still be considered by the program, and could be offered admission to the 45-credit track.

In summary, making these changes to the MSPH-Biostat degree requirements will enhance the competitiveness of the UMass Amherst Biostatistics program in the market for strong quantitative students who are looking for graduate-level training in Biostatistics. These students will be eligible to finish the MSPH-Biostat degree by completing the 30-credit track for the MSPH-Biostat degree. Additionally, these changes will not impact applicants without this prior training, as they will continue to be competitive for admission to the track that retains the current degree requirements of 45 credits.

**Resources**

*If this proposal requires no additional resources, say so and briefly explain why. If this proposal requires additional resources, explain how they will be paid for. For proposals involving instruction, indicate how many new enrollments are expected and whether the courses have room to accommodate them.*

This program does not require additional resources. The MSPH-Biostat program typically matriculates 7-10 students each year. We anticipate that these changes could double the number of enrolled students each year, and the graduate-level courses (both core and elective) have space to accommodate this type of increase of enrollment.

**Curriculum**

*Provide a curriculum outline showing degree program requirements, requirements of any existing concentrations, requirements of proposed concentration, and how they relate. You may include this outline and any additional documents as attachments.*

*(For additional information, please go to Proposal #2506 in the Course and Curriculum Management System.)*