



December 4, 2006

To: Educational Affairs Committee (EAC),  
College of Arts and Sciences (CAS)

From: P. Monk, Chair *P.M.*  
J. Cai, Director of the Secondary Math Education Program  
G. Schleiniger, Director of Undergraduate Studies *SS*

Subject: Proposed BS in Math Education

This is a response to the EAC decision to deny approval for our proposed new program: Bachelor of Science in Mathematics Education (BSME). We understand that the main reason for the rejection of the new major was the lack of a foreign language requirement in the BSME. We urge you to reconsider your decision for the reasons we shall now outline.

In deciding to submit a proposal for a BS in Math Education, we considered carefully the job market, the preparation of students who may wish to pursue graduate studies in the future, the value and importance of having some teachers in our high schools with a deeper knowledge of their subject matter (mathematics, in this case) and/or related fields (computer science, physics, chemistry and biology), and the cost of offering an alternative program at UD leading to a career in secondary math education.

The existing major (XMS) is a bachelor of arts (BA) program, a liberal arts major respecting all the rules set forth by the College and the University for BA majors. In contrast, the proposed BSME is to be a bachelor of science (BS) aimed at "students whose goals indicate a high level of concentration or specialization" (2006-2007 Undergraduate and Graduate Catalog, page 87). The benefits of the BSME are:

- It provides an option for students to pursue a minor in a second discipline, thus making them capable of teaching a second subject in high school. There is a great demand for high school math teachers who can also teach computer science, or physical sciences, or life sciences.
- More mathematically talented students who may wish to pursue graduate studies in the future, and who wish to teach more advanced math classes in high school will have the option to acquire deeper knowledge in their discipline. Lately, there has

been an increase in the number of high school students taking AP Calculus and AP Statistics in their junior year, making the availability of teachers capable of teaching AP Calculus and beyond even more valuable to high schools.

While it would be desirable to have the BSME majors be proficient in a foreign language, other priorities make such a requirement too restrictive. In order to offer a meaningful and valuable alternative to current and prospective UD students interested in a career in secondary math education, flexibility must be included in the curriculum. The number of NCATE certification requirements, the highly desirable need for a deeper exposure to science, where some of the most successful and widely known applications of mathematics are found, and the need for more advanced math courses in the new curriculum make a foreign language requirement impractical. On the other hand, students who may wish to pursue a minor in a foreign language (and several of our current students do) will still be able to do it by adding a few special session classes, particularly if they have started on a language in high school.

We expect most of our majors in secondary math education to choose the XMS Program, with a smaller percentage choosing the BSME. Such a balanced mixture of teachers is also desirable in our high schools — some with a traditional liberal arts education, including proficiency in a foreign language, and fewer with more advanced mathematical skills to teach and challenge students with talent and interest in math and science.

The BSME requirements are consistent with those of other BS majors which have reduced breadth and no language requirements. Contrary to specific CAS requirements for a BA (pages 86–87 of the Catalog), the only requirements for a BS are the University's (page 64 of the Catalog). Although apparently not specifically stated in the Catalog, it is widely accepted (and we share that view) that breadth is to be included in the curriculum of all majors offered by the University. The proposed BSME requires as much breadth as most other majors with an *interdisciplinary flavor*. In addition, the program was carefully designed to satisfy all the NCATE requirements for certification, and it has been carefully reviewed and received an endorsement from the University Council on Teacher Education (UCTE).

It is our firm conviction that the proposed new major adds value to the UD secondary education programs at no cost, that it will greatly benefit those students interested in secondary math education whose goals are better met by a BS program, and that it will help meet a critical need in the State of Delaware. We therefore urge the EAC to reconsider its decision.