

March 15, 2004

To: Lou Anna K. Simon
Provost and Vice President for Academic Affairs

From: June Pierce Youatt
Assistant Provost for Undergraduate Education

Re: Quantitative Literacy Task Force

I propose the appointment of a Task Force to study issues of Quantitative Literacy in undergraduate education at Michigan State University. I am recommending that key Chairpersons, Directors and Deans be asked to nominate faculty from whom you would appoint the task force. The task force would be charged with forming faculty work groups to address the issues and tasks outlined here.

The educational, civic, and economic incentives for a populace that is quantitatively literate are compelling.¹ Nonetheless, the nation's K-12 schools, and universities, have neither adequately defined "quantitative literacy" nor been able to ensure that students are adequately educated in this broad area. Discussion of this domain in prominent national reports dates back at least three decades, yet on national measures of quantitative literacy "fewer than one in ten adults score in the highest category, which itself is only comparable to the expectations of first-year algebra."¹

Michigan State University is poised to provide both national leadership and local impact by examining its own values and visions for preparing MSU students to be quantitatively literate, even as the definition of and demands for quantitative literacy change rapidly. The CRUE report² stated that: "Mathematics provides a framework for the development of logical and critical thinking skills in a more concentrated form than is easily available elsewhere in the curriculum." It went on to emphasize that mathematical and quantitative proficiency impact our perceptions and interactions with a constantly changing social and technological environment. Consistent with this, recommendations from The Mathematical Association of America (MAA) states that: "Educated adults should be able to interpret mathematical models, represent mathematical information in several ways, and use different mathematical and statistical methods to solve problems, while recognizing that these methods have limits."³ The MAA recommendations recognize that in order to accomplish the goal of a quantitatively proficient society, programs must establish "long-term patterns of

¹ Steen, L. (1997). Preface: The new literacy. In L. Steen (Ed.), *Why numbers count*. New York: The College Board, p. xvii.

² Opportunities for Renewal (The CRUE Report). Board of Trustees, Michigan State University, 1988.

³ Taken from the MAA website http://www.maa.org/past/ql/apdx_d.html

interaction and engagement.” This includes both “foundation” courses as well as “continuation experiences,” a format similar to the current MSU requirement for writing across the major.

I propose that by November 2004, the task force on Quantitative Literacy and their respective work groups, through a university-wide consensus process, should:

- Establish a dynamic and adaptable vision that describes MSU’s quantitative literacy goal, together with a set of guidelines, expectations, or standards characterizing the intended quantitative literacy exit requirements of all students who graduate from MSU with a bachelor’s degree.
- Develop an assessment plan that: a) is sufficiently adaptable to meet the needs of the diverse academic missions and requirements of the various undergraduate majors at MSU and b) provides evidence of the degree to which students have met the quantitative literacy exit requirements.

Further, representatives from the Quantitative Literacy task force will then work cooperatively with other groups reviewing general education requirements to:

- Develop a model(s) for an interdisciplinary “University Curriculum” that addresses the quantitative literacy standards and can be tailored to meet the needs of students with diverse academic interests and backgrounds.
- Recommend a University structure that will allow for appropriate oversight and ongoing evaluation.

The principles that guide and bound the work of the Task Force include:

- The decisions regarding MSU’s expectations for all students in the area of quantitative literacy are properly university-wide and not the purview of any single department or limited subset. The taskforce should design a process that includes broad input from interested constituents across the university.
- Several influential national reports have addressed the question of quantitative literacy and its place as part of general education in colleges and universities; in addition, many institutions have implemented forward-looking quantitative literacy initiatives. This background should be used as a resource for the task force’s work.
- A quantitative literacy program should be designed so that students are provided with the best experience possible to meet the MSU definition. Therefore, the taskforce should not necessarily be constrained, or depend on, existing courses or structures.
- Quantitative literacy should be considered as a component of a general liberal education, and as such, efforts to develop a quantitative literacy initiative should be coordinated, conceptually if not programmatically, with work across Undergraduate Studies.

- It is not necessarily the case that students majoring in mathematics, engineering, and the science would automatically meet the quantitative literacy expectation through the mathematics and statistics courses required by their major programs.
- Recommendations must consider the most effective use of resources.

As you have noted, the Office of the Provost will provide the usual resources to support the work of the task force and work groups.