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October 27, 2010

To: Susan Amussen, Chair – Undergraduate Council

From: Maria Pallavicini, Dean – School of Natural Sciences

Cc: Keith Alley, EVC & Provost
Anne Kelley, SACA co-chair
Arnold Kim, AMS Program Chair
Christopher Viney, VPUE
De Acker, Assistant Dean – School of Natural Sciences

Re: Applied Mathematics Program Review Report

I am very pleased that the Undergraduate Program Review Committee recognized the outstanding undergraduate program in Applied Mathematics (AMS). The Committee Report provided a balanced view of the strengths and challenges of the program, opportunities for the future, and recommendations for improvement.

As I described to the Committee members, AMS is one of the best run undergraduate programs in the School of Natural Sciences (SNS). I concur with the committee's assessment that the commitment of the mathematics faculty, led by Prof Arnold Kim, to teaching excellence is the underpinning of the quality of this program.

I recognize the challenges of offering sufficient upper division courses to the mathematics major, particularly with regard to offerings in emphasis tracks. I concur with the committee that the oversight for the remedial courses is time consuming, and compromises building further strength in the upper division mathematics major course offerings. I note that while the AMS faculty was initially enthusiastic about the pedagogy and oversight of the ramp up math course, the magnitude of need and high enrollments consumes considerable time and resources. The AMS faculty and I are supportive of moving responsibility for the ramp up math course to College One when the Provost is ready to transition it.

I have addressed each of the Committees recommendations separately below.

1a - The AMS should be given more faculty positions: I concur with this position. AMS will be recruiting on average one new faculty member each year per the three year plan.

1b and 1c - A formal Visiting Assistant and Full Professor/Assistant Professor Program should be established: I concur with this recommendation, but also note that the funding for the VAPs is from the same source as funding for ladder rank faculty. Thus, while the mathematics faculty have the flexibility to recruit VAPs or ladder rank faculty, the reality of economic constraints precludes separate VAP positions in addition to the ladder rank positions. As constraints ease, I am very supportive of working with the faculty and the Provost to build in additional lines for VAPs.

1d - The AMS faculty should strive to add senior level faculty ftes: I fully concur with this recommendation. Indeed, senior AMS faculty positions have been available for several years, and searches have failed to yield candidates that meet the criteria and philosophy set forth by the mathematics faculty. I am very supportive of continuing to have senior fte lines available.

2 - Math 5 should be maintained in its current form of small, highly interactive classes: I agree that this is a desirable format for Math 5. However, the magnitude of enrollments in this course on the UC Merced campus is such that resource constraints may edge up the numbers of students in each class. Ideally pedagogy established by the math faculty should drive course sizes.

3 - I concur that math ladder rank faculty members should be involved in delivery of undergraduate courses. The recent addition of an LPSOE has helped in this regard, and as the ladder rank AMS faculty increases, there should be opportunities for mathematics faculty members to continue to participate in teaching lower division, upper division, and graduate courses, per the teaching policy established in the SNS.

4 - The AMS program should establish a new emphasis track in mathematical analysis: I concur. This is important and needs to be balanced with faculty line availability and teaching needs.

5 - Improve communication between AMS faculty and students: The mathematics faculty are highly committed to student engagement and success. For the past three years I have directly allocated resources to each of the undergraduate programs, based on the number of declared majors, to support building of student communities in the discipline, recruitment and retention into the discipline, via activities/events that the faculty deem appropriate. I will continue to do so in the future.

6 - The Program should be provided a dedicated Program Coordinator: During the past three years, the school has supported 50% effort of a dedicated individual for the applied math program. This year, the SNS will receive funding for a Director of Student Success, who will help with assessment and WASC activities for all programs in the School. This individual will work closely with the AMS faculty to continue to support excellence in assessment of learning and teaching effectiveness. As all of the academic programs increase in size with growing enrollments, it is unlikely that one individual will be able to support all needs. We will need to move toward more dedicated support for each of the programs with large enrollments.