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November 17, 2010

Professor Arnold Kim
Chair, Applied Mathematical Sciences Program

Dear Arnold,

Thanks to you and to the entire Applied Mathematical Sciences faculty very much for your work on the Applied Mathematical Sciences Undergraduate Program Review Committee Report of June 2010 and for your response of 20 October, 2010. As chair of this program review committee, but on behalf of the Program Review Committee of UGC, chaired by Professor Gregg Camfield, I would like to request that the AMS faculty provide some more specific responses to issues raised in the report:

(1) The Committee Report recommends specifically that the AMS program both add more ladder faculty to the program and establish two visiting faculty programs. As Dean Pallavicini rightly observes in her response of October 27 to the Committee Report, due to limited resources there is a potential for conflict between hiring new ladder faculty (recommendations 1A and 1D), and establishing the recommended junior and senior level visitor programs (recommendations 1B and 1C). Does the AMS faculty agree in principle with each of recommendations 1A, 1B, 1C and 1D? For the recommendations with which they agree, given that trade-offs may be needed between the goals of adding ladder faculty and establishing visitor programs, what is the AMS faculty's preferred priority ranking over these recommendations? Can the AMS faculty suggest their own desired targets, both in numbers and in time, for filling the recommended permanent and visiting positions?

(2) The Committee Report recommends that the AMS faculty and the University and School of Natural Sciences administrations work together to provide a solution for maintaining the high quality of instruction for the Math 5 course (recommendation 2). Can the AMS faculty state specifically its own preferred solution?

(3) The Committee Report recommends that the AMS faculty establish a mathematical analysis track (recommendation 4). Dean Pallavicini specifically concurs with this recommendation. In order to create and teach the new upper division mathematics courses necessary for a mathematical analysis track, the AMS faculty would need to assign both the design and the teaching of these courses to current members of the AMS faculty, to new faculty (either ladder faculty or visiting faculty), or to some combination of current and new faculty. Do the AMS faculty agree in principle with recommendation 4? If so, then what are the AMS faculty's preferences regarding how to create and staff the necessary new courses? Again if they agree with recommendation 4, can the AMS faculty propose a timetable for creating the mathematical analysis track that fits with their other plans?

Thank you in advance for your responses to these questions.

Take care Arnold and best wishes to you and the entire AMS faculty,

Peter Vanderschraaf

Associate Professor of Philosophy

Cc: Program Review Committee
NS Dean Pallavicini
Senate Executive Director Sims
Senate Principal Analyst Paul

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To: **Program Review Committee, Undergraduate Council**

From: **Arnold D. Kim, AMS Program Chair**

Re: **Applied Mathematics Program Review Report**

Date: **November 26, 2010**

As Professor Peter Vanderschraaf requested on behalf of the Program Review Committee of Undergraduate Council, I have made more specific responses to issues raised in Applied Mathematical Sciences Program Review Report. I have shared these responses with the applied mathematics faculty and obtained their approval. These responses appear below.

> *(1) The Committee Report recommends specifically that the AMS program both add more ladder faculty to the program and establish two visiting faculty programs. As Dean Pallavicini rightly observes in her response of October 27 to the Committee Report, due to limited resources there is a potential for conflict between hiring new ladder faculty (recommendations 1A and 1D), and establishing the recommended junior and senior level visitor programs (recommendations 1B and 1C). Does the AMS faculty agree in principle with each of recommendations 1A, 1B, 1C and 1D? For the recommendations with which they agree, given that trade-offs may be needed between the goals of adding ladder faculty and establishing visitor programs, what is the AMS faculty's preferred priority ranking over these recommendations? Can the AMS faculty suggest their own desired targets, both in numbers and in time, for filling the recommended permanent and visiting positions?*

The applied mathematics faculty agree strongly with recommendations 1A, 1B, 1C and 1D in the Committee Report. The applied mathematics faculty acknowledges also Dean Pallavicini's statement regarding the limitations in resources. Even though resources are limited, the applied mathematics faculty have worked to address the recommendations made in the Committee Report. Here is what we have done and what we are doing.

- We have hired two Visiting Assistant Professors. Dr. Avi Shapiro started this fall semester. Dr. Orkan Umurhan will start spring semester. The applied mathematics faculty were able to hire these two Visiting Assistant Professors because Professor Michael Sprague left UC Merced and because of an unsuccessful faculty recruit during the 2009-2010 academic year.

- We have two faculty searches going on this year. One is for a tenured position at the associate or full professor level. The other is for a tenure-track assistant professor level.

- We have not proceeded to establish a senior Visiting Professor program yet. We will do so later after the results of this year's faculty recruiting.

The two Visiting Assistant Professor positions have proven their value to this program already through their research, teaching and service. The applied mathematics faculty would like to have these positions committed to an individual for two years, minimum. We feel that this two-year commitment is crucial to the success of our Visiting Assistant Professor program. However, the administration has committed only one year with a possible renewal for another year. We hope that the administration is open in the near-future to considering a two-year commitment to individuals in this position.

> *(2) The Committee Report recommends that the AMS faculty and the University and School of Natural Sciences administrations work together to provide a solution for maintaining the high quality of instruction for the Math 5 course (recommendation 2). Can the AMS faculty state specifically its own preferred solution?*

The specific issue that we have identified is that our current mode for delivering Math 5 is not scaling well with our ever-growing demand due to limitations in resources such as instructional staff and classroom space. We do not have a solution established presently. However, we are investigating several potential solutions to this challenge. In particular, Dr. Lei, Yue is leading an evaluating several different course technologies that will maintain highly individualized instruction, but will scale better to our ever-growing population of students. We hope to have a proposal for how we plan to address this issue by early next semester. We plan to share this proposal with Undergraduate Council as well as the administration.

> *(3) The Committee Report recommends that the AMS faculty establish a mathematical analysis track (recommendation 4). Dean Pallavicini specifically concurs with this recommendation. In order to create and teach the new upper division mathematics courses necessary for a mathematical analysis track, the AMS faculty would need to assign both the design and the teaching of these courses to current members of the AMS faculty, to new faculty (either ladder faculty or visiting faculty), or to some combination of current and new faculty. Do the AMS faculty agree*

in principle with recommendation 4? If so, then what are the AMS faculty's preferences regarding how to create and staff the necessary new courses? Again if they agree with recommendation 4, can the AMS faculty propose a timetable for creating the mathematical analysis track that fits with their other plans?

In principle, the applied mathematics faculty agree with the recommendation to establish a "mathematical analysis" emphasis track. However, it is not among the highest of our priorities at the moment. In a recent meeting, the applied mathematics faculty have discussed establishing at least one new course that would become one of the key courses in a mathematical analysis course. We are currently developing this course. But among other things, we hope to provide the content students need to prepare for the Math subject GRE and the California single-subject teacher credential exams.