Comprehensive Program Review
Mathematics Program
December 2007

1. Several changes have taken place with our mathematics program. Two minors have been added which added several new courses for majors to take. The Minor in Applied Statistics and Data Analysis introduces students to a variety of statistical topics including statistical computing, statistical methods, experimental design, regression and data mining. These courses are well subscribed by mathematics majors as well as other majors. Students may also receive a Certificate in Statistical Analysis using SAS, a popular statistical software package. The Minor in Applied Mathematics added a course in professional mathematical software such as MATHLAB, MAPLE and Scientific Notebook. These are in high demand in industry and graduate school. The department also now offers a Masters of Science in Applied Statistics and Masters of Art in Teaching. Some students have taken graduate courses to further their education.

In addition to these local opportunities students have available global education opportunities. In May 2007 a group of students studied Epidemiology in China. For May 2008 there are two opportunities available, one in China and the other in Japan. Both will focus on mathematics education in the different countries.

The Department of Mathematics and Statistics has two new computer equipped classrooms for delivery of software intensive courses in mathematics and statistics. These rooms are heavily used.

Students regularly attend the weekly Math Talks, where faculty and students present mathematics, and the monthly Math Nights, where the lighter side of mathematics is presented, or career information is given or student capstone presentations are made. Because students from other disciplines attend these activities they have become excellent opportunities for recruitment.

There are additional recruitment opportunities. Each semester letters are written to encourage excellent students in lower division mathematics courses to consider majoring in mathematics. The department has also established a statewide mathematics competition that continues to grow in participation. This gets our name in front of talented high school students.

The excellent faculty continues to grow. Recently we have hired a number of new faculty in a variety of applied mathematics and statistics areas. The department continues its commitment to excellent teaching. In the past five years, Meghan Burke, Ron Hoover, Teresa Banker and Mary Garner have won the College Distinguished Teaching Award. Meghan Burke and Mary Garner went on to win the University Distinguished Teaching Award and Mary Garner is the 2007 winner of the Award for Excellence in Teaching from the Georgia Board of Regents.

2. In Fall term 2003 we had 66 majors enrolled and it has steadily increased to 148 majors enrolled in Fall term 2007. The class level distribution is 30% Freshmen, 25% Sophomores, 16% Juniors and 30% Seniors and shows a fairly even distribution. Graduation rates have fluctuated in the past five years. FY 2003 had 16 graduates, FY 2004 had 13, FY 2005 had 12, FY 2006 had 18 and FY 2007 had 14. It should be noted all values are in the teens.

The mathematics major underwent a redesign in 2006-2007 that is meant to make it easier for students to design their concentration-based electives. It is felt this will help with retention and graduation.

3. The following action plans and priorities from the 2003 Follow-Up Report have been accomplished.

- A data base of mathematics majors has been created and is updated each semester.
- Processes have been identified, designed and implemented for efficient office performance.

- We have developed an active recruitment plan that includes letters written to students to encourage them to major in mathematics and the statewide Mathematics Competition for high school students.
- We have developed recruitment and mentoring activities to improve the diversity of the students in the program. This includes Math Talks, Math Nights and the Career Fair for the College of Science and Mathematics.
- Each semester we design schedules to be responsive to enrollment trends and eliminate possible "bottlenecks" in the curriculum. For example, recently the offerings of Real Analysis increased from one to two semesters a year and of Modern Algebra increased from two to three semesters a year.

4. The following action plans and priorities still need to be addressed.
   - Incorporate the February 2003 Guidelines for Programs and Departments in Undergraduate Mathematical Sciences from the Mathematical Association of America. The department will begin reviewing these in Spring 2008 and finish in Fall 2008.
   - Work on relationships with outside stakeholders such as industry, government and graduate schools. Our Advisory Board disbanded after most of the members left their positions. No new contacts have been pursued. A new Advisory Board will not be formed.
   - Clearly define the capstone experience. Though previously defined beginning in Fall 2007 faculty have held discussions on changing the capstone experience. It is expected by Spring 2008 that a new form for the experience will be defined.
   - Interview students who have left the program to help identify any issues for retaining students. These have proved hard to identify and this will not be addressed in 2008.

5. The current status of the program is viable and the program should be sustained. During the past five years the number of mathematics majors has grown from 66 to 148. The program continues to grow in quality as evidenced by the discussion in #1 above.

a. The program advances several of the specific goals and action steps of KSU's Strategic Plan. For Goal 1, the program supports the action steps (2) by the development of Study Abroad programs, (3) by the use of computer classrooms and the CITRIX server that allows students and faculty to access mathematical and statistical software from home and (8) by the addition of minors and Masters programs. For Goal 2 the program supports the action steps (4) by maintaining a two-year schedule of courses, (7) by using Supplementary Instruction for courses and having an SI Coordinator in the department and (9) by Ana-Maria Croicu and Anda Gadidov being Co-PI's on an over $500,000 NSF grant for scholarships for Science, Technology and Mathematics students on a financial needs basis. Finally, for Goal 4 the program supports action step (2) by increasing our student abroad opportunities.
b. At this time the main resource needed to strengthen the program's ability to meet the goals for KSU's QEP would be funding for students to participate in study abroad programs.
c. The program is not delivered off-campus.
d. The resources needed to sustain the program's quality and productivity is mostly linked to technology. The department needs classrooms equipped with sufficient technology and a budget allocation to help pay for all our software licenses.

   The department would also like a location where the entire department could be housed in one place (even if on several different floors). This is very important to promote a sense of collegiality. This past semester we had faculty in five different buildings.