

Sinclair Mathnet

March 2005

Volume 11, Issue 4

FROM THE CHAIR



In recent years the Mathematics Department has worked very hard both inside and outside the classroom to help struggling students be more successful. In this article I would like to catalog what department members have done over the last several years.

In 1997, graphing calculator sections of Math 116 were introduced (Barb Carruth and Susan Myers), computerized practice exams were introduced in the Math Lab for Math 101 (Len Ruth), and restrictions were placed on which counselors could waive prerequisites.

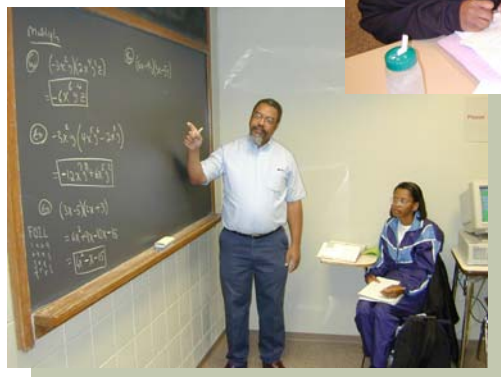
In 1998, lab components were introduced into Math 122 (Barb Carruth and Bob Chaney) and Tech Math (Bob Chaney), we began providing mentoring for high school Tech Prep teachers to help them better prepare their students for our classes (Gwen English) and the C grade prerequisite requirement was instituted.

In 1999, the Math Retention and Success Program was initiated with one part time instructor (Adolph Harris, who is now full time), offering bi-weekly study skills workshops, as well as one-on-one tutoring sessions with at-risk students. From 1999 until 2004 a variety of different versions of computer assisted sections of Math 101 and 102 were piloted (Moez Ben-

Azzouz, Barb Carruth, Kay Cornelius, Susan Harris, Lyn Keeler, Earl King, Ed Gallo, Marie Stroh, Jim Willis, Tom Wilson). Also, in 1999 the Math Help Room was first opened.

In 2000, computerized practice exams were added in the Math Lab for all the exams in Math 102 (Len Ruth).

In 2001, the Retention and Success Program workshops were expanded to include a wider variety of topics (Marie Stroh), and Lab and Help Room staffing arrangements were creatively revised to provide more professional math help for students (Michelle Harris).



In 2002, the practice of making hundreds of pre-quarter phone calls to counsel at-risk students was incorporated into the Math Retention Program, and the program was expanded to include two Retention Specialists (Moez Ben-Azzouz and Jim Hardman).

We worked with the Developmental Department regarding revisions in their courses designed to improve student performance in our courses (Bob Allison, Susan Harris and Tony Ponder), we instituted a departmentalized first day in-class diagnostic test for Math 101 (Len Ruth), and we became substantially involved with the CSEMS (Computer Science Engineering Math and Science) scholarship program sponsored by the National Science Foundation through which we have helped provide a number of scholarships for our students (Vickie Lair).

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In 2003, we established the Transitions in Math Council, a joint committee with the Developmental Mathematics Department, to look for ways to better coordinate the transition for students from Developmental courses to Math courses (Ed Gallo). Also, in 2003, common review sessions for all the chapter exams and the final exams in Math 101 and 102 were incorporated into the Math Retention Program (Earl King, Glen Lobo, David Stott and Richard Uchida).

In 2004, a Math Retention Program web site was built (Moez Ben-Azzouz) and a departmentalized first day in class diagnostic test for Math 102 was instituted (Len Ruth). A joint task force was established with the Engineering Division to improve the effectiveness of the Tech Math sequence in preparing students for engineering classes (Lyn Keeler), computerized practice exams for Math 116 were added to the Math Lab (Len Ruth) and a Math Lab web page was built (Willow Cliffswallow and Harsha Butathsinghalage) making a variety of Lab resources available to students online. Success rates in on-line classes were doubled by implementing enrollment restrictions, and a Math Club was established which includes a program instituted by the members to provide peer tutoring for 200 level courses (Karl Hess).

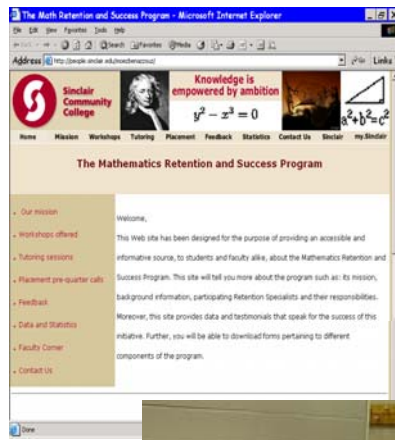
And we continue introducing new ideas to improve student success. In 2005 a new program called Emerging Scholars (photo at right) is being piloted in Math 102. It incorporates more contact time into the course for students to do extra worksheets while working in groups under instructor supervision (Jim Willis and Kay Cornelius). Also, a new

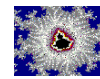
three-quarter algebra sequence has been proposed as an alternative to Math 101 and 102 for students who need more help. In addition, common final exam review sheets are being developed for all students in Math 101 and 102 (Harvey Chew).

Two things should be noted about the foregoing activities. First, nearly all of them are not one-time events that ran their course and went away. We have accumulated these activities through the years and still maintain virtually all of them in operation. Secondly, these activities are done almost entirely without additional compensation to the faculty and staff. They do them to help the students and the department. They cannot be thanked enough for their dedication to student success and I am extremely grateful to them. I also thank Emmilla Ross for her uncomplaining secretarial support for almost all of these initiatives.

But the Mathematics Department cannot solve the problem of low student success rates alone. We need the cooperation of the students and the college. Students must take advantage of the opportunities we offer.

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While student usage of the Math Lab and Math Help Room rose from 6.07 visits per FTE (Full Time Equivalent) in 2000 to 6.88 visits per FTE in 2004 (actual visits rose from 17,558 to 24,139), still only about 25-30% of our students make one or more visits per quarter to the Lab (and many of them need much more than one visit). And only 10% (many of the same ones who go to the Lab) make one or more visits to the Help Room. Also, out of the approximately 1500 students who take Math 101 and 102 each quarter, only about 10-15

of them typically show up for exam review sessions. And as we saw in a student attendance study in Fall 2001, Math 101 student attendance averages below 80% of class meetings. This would be like missing work one day per week. We can only help the students who come.

The college must continue to support our efforts. While some help has been given, such as in 1998 when the C grade prerequisite was approved and in 1999 with the establishment of the Math Help Room and in 2000 when some reassigned hours were granted to help staff it, more help is needed. For example, expansion of the Help Room is needed to accommodate those students that are interested in coming, our request to purge students from classes for which they do not have the prerequisite needs to be implemented and our request to place a two year limit on prerequisites and placement test scores needs to be approved.

But with or without these things I am confident that the Mathematics Department will continue to do anything and everything we can think of to help students succeed. Again I offer a heartfelt thank you to all the faculty and staff of the Mathematics Department for all you do on behalf of our students.

Al Giambrone ■

“Math is the one place
where truth and
beauty are
the same thing.”

Danica M^cKellar
Actress and Mathematician
(Winnie Cooper in *The Wonder Years*)

REMINDERS

- Don't forget the Math Club provides peer tutoring for 200 level classes. If you have students who could benefit refer them to the Math Club.
- Records of test scores and grades should be retained for two years. Student work not returned to students should be retained for two quarters. Students should be allowed to review their final exams, but instructors should keep them and retain them on file for two quarters.
- Students should be required to know and be able to use the course formulas on the course syllabi. They should be tested over them without being allowed to use copies of the formulas, including copies stored in their graphing calculators.
- When giving outside of class graded assignments, be sure students understand what resources they are allowed to use and what they aren't, and take steps to insure that the credit you give is for work that *they* have done. When working in the Math Help Room, please be sure you are not helping students with graded assignments.



Winter Quarter Colloquium



Dr. Alan Johnson from AFIT and Dr. Harvey Chew from Sinclair presented at the Mathematics Department Winter Quarter Colloquium on February 11. The well attended event drew many Sinclair full and part-time faculty, staff and students as well as local math educators, alumni and other members of the general public. Dr. Johnson's talk was on mathematics education and Dr. Chew's talk was on the history of π .



The AMATYC Competition Round I winners were recognized at the Winter Quarter Colloquium. Pictured are Emily Enright (tied for third place), Al Giambrone, Chad Joan (first place), David Stott and Shelly Ponder (second place).

TEST YOUR SKILLS



GET YOUR MATH HERE

Feel like getting your teeth into a juicy math problem instead of a hotdog come lunch time? Then stop by Times Square in New York City on a Wednesday afternoon and talk to college math professor **George Nobl**. That is where he sets up a table and poses math problems to passersby. Those whose skills are sharp enough to answer the question correctly earn themselves a candy bar. You can try your hand at the following puzzles.

1. A pizza maker sells a 6-inch pie, which costs him \$5 to make. He wants to know how much it will cost him to make a 12-inch pie.
2. What is the angle between the hour hand and the minute hand when it's 3:50?

Harvey's Joke Corner

A former college algebra student whose favorite topic was logarithms now owns a pub that he advertises with beer jingles - he went from logarithms to "lager rhythms."



Joke Corner Critic: "All of your calculus jokes are copied."

Dr. Chew: Yes, they're 'derivative humor.'"

Q: Why isn't your nose 12 inches long?

A. If it were, it would be a foot.

(from Edna King)

There are only 10 kinds of people ... those who understand the binary system and those who don't.