

Calendar

[Please give notification of upcoming events to Jeff.]

1991

Nov	27-29	Thanksgiving Recess
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Dec	4	Colloquium: <i>Bricks, Donuts, and Thrackles,</i> <i>Crossing Problems in Graphs</i> 4:10 254 Votey
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Dec	4	Classes end
Jan	14	Classes begin

Message from the Chief

Last week I served on the review panel convened by the National Science Foundation to recommend awards for Undergraduate Course and Curriculum Development (UCC). Over 200 scientists, mathematicians, and engineers were assembled as reviewers, representing a spread of educational experience ranging through community colleges, four year colleges, and major universities. Carla Schwartz served

as a reviewer in Engineering, and Pat Daniels (from the ABET accreditation team) was a lead program director in Engineering. Overall, 479 proposals were reviewed, with NSF anticipating some 120 awards totaling approximately 12 million dollars. In the Mathematical Sciences 55 proposals were submitted, of which the panels rated 9 as "excellent", and a number of others "very good". In fact, all of the panelists were impressed with how few really weak proposals were submitted. All but one of the 19 that our panel reviewed were well thought out, addressed an important area of education, and were well-written.

Although a grueling task that began Wednesday evening and ran non-stop (except for meals and sleep) through noon Saturday, the diversity and excellence of the members of the review panel together with the high quality of proposals, combined for a memorable and valuable experience. Imaginative and impressive curriculum development is underway in a wide range of mathematics and statistics. Confidentiality precludes my mentioning names and institutions, but the mathematical community can look forward over the next few years to the development of novel approaches to courses throughout the spectrum from developmental mathematics through advanced courses for mathematics majors.

In my view (biased as it may be), the expertise and commitment of our Department in undergraduate education places Vermont in a favorable position to play a significant role in shaping the kind of mathematical program that will be a model for the mathematically based technological era that lies ahead. Those of our projects and initiatives, some underway through Jonathan's PUMP Committee, that can have a national impact are candidates for UCC funding. The next proposal deadline (and the only one for the coming academic year) is in June, 1992.

General Delivery

Math/Stat Department now holds President's cup for blood drive participation

In front of a capacity crowd at the UVM-Union hockey game on November 9, I stepped out on the ice with Don Lacross for the transferral of the Faculty-Staff Blood Drive President's Cup from the Staff Silent Hero to the Faculty Silent Hero. I had been chosen as the Faculty Silent Hero last March, as the result of a strong nomination from Janet Ferguson and Ken Gross, in cahoots with Don Moser, Mary Reilly, and Ann Livingston. The Silent Hero holds the cup in recognition of blood donation by all UVM faculty or staff, but I would especially like to share it with the incredibly supportive Math/Stat department.

The participation by this department in blood drives and blood donation in general has been phenomenal. Several of us donate regularly, and it has been wonderful to see some decide to donate for the very first time. I suspect that our level of donating is among the highest if not the highest of all departments on campus. We now hold the President's Cup until the Blood Drive in March. I hope to display it someplace where all can see it as a tribute to the generosity of the faculty and staff of this department.

Jonathan Sands

alcohol syndrome. Anything you could contribute to add some joy to their holidays would be greatly appreciated. If you would prefer to make a cash donation, we will be buying a food gift certificate like we did last year. Please give your food, wrapped presents, or cash to Karla or Janet by Wednesday, December 11. Watch the mailroom bulletin board for additional information or gift suggestions. Thank you for your generosity.

Recycling News

Glossy Paper:

Be sure that you sort your recyclables carefully in the mailroom. The bin for magazines and catalogs should contain glossy paper only.

Thanks. — Jonathan Sands, for the Recycling Committee.

Computer Stuff

To get online help for the UNIX system from any UNIX machine type

man command

or

man -k keyword

The Spirit of Giving

By Karla Karstens

Last year the Math/Stat Department opened their hearts and pocketbooks to help provide a very Merry Christmas for the Corcoran family. Happily, the Corcorans seem to be doing much better these days, especially Melody, who was able to attend a summer camp through the King Street Youth Center and really seems to be enjoying a boost in her self-confidence.

This year, we are asking you to once again make Christmas a little happier for another needy family. We've been assigned the Welch family, consisting of a Dad, Mom (Sherry) and four children: Amanda (age 2), Robbie (age 4), Bobbie Jo (girl, age 6) and an older boy (I don't know his name now, age 9.) All the children are small for their age, and the youngest two may suffer from fetal

Using Emacs

In order to use the UNIX system efficiently, including using TeX and e-mail, it is best to learn either Emacs or the grotesque vi. Our version of Emacs is GNU Emacs, written by Richard Stallman of the Free Software Foundation. Stallman, a MacArthur "Genius" Fellowship awardee, is working on a project to replace UNIX with a UNIX-compatible software system that is free. Dan Zwick has a GNU Emacs manual describing the (many) powerful features of this editor. To get started, make a copy of the emacs short reference card by first getting into your home directory on griffin or newton and then typing

Dvi -Pmatlaz ../zwick/tex/pub/shortref

Short reference cards have been available next to the laser printer in the mailroom several weeks.

There may still be some left. There is also a longer reference card that you can get by typing the same command as above, except with `shortref` replaced by `refcard`.

The best way to learn Emacs is by working through the Emacs Tutorial. Just type `emacs` (with no filename specified) and read what it says. Remember—to get out of Emacs type `(CTL)-x` `(CTL)-c`.

P.S. In case you're wondering what the GNU stands for in GNU Emacs, according to Stallman it stands for "Gnu's Not Unix," a recursive acronym.

Next time — e-mail!

Colloquium

The last Colloquium talk of the semester will be on Wednesday, December 4, at 4:10 in 254 Votey (note room change!). The speaker is Rich Ringeisen of Clemson University, who will speak on **BRICKS, DONUTS, AND THRACKLES, CROSSING PROBLEMS IN GRAPHS.**

Abstract: In this talk, which will be generally accessible to upper level undergraduates as well as faculty and graduate students, we will take a look at problems with drawing graphs or networks in the plane. By a drawing of a graph we will mean a realization of a graph or network in the plane, where it is possible for edges to cross at other than their endvertices. A history of such problems will be traced, beginning with the early problem of Turan and leading up to recent attempts to solve some still unsolved, but easily stated "classical" open problems.

We will then move to some more recently stated problems which deal with drawings other than those in which we are seeking the minimum number of crossings. The famous "thrackle" conjecture of Conway and Woodall, dealing with "worse case" drawings, will be used to introduce some other easily stated but seemingly difficult unsolved problems of current interest to many researchers. In particular, we will discuss several recent papers by this author, with Piazza and Stueckle. Throughout the talk much emphasis will be placed on the statement of

problems, their intuitive understanding and the nature of their difficulty. Proofs and technical details will largely be ignored and saved for the presenter's seminar talks on Thursday and Friday with interested researchers and students.

Announcements

Kroepsch-Maurice Award

Remember that nominations for the Kroepsch-Maurice Award for Teaching Excellence are due before February 14 in the Instructional Development Programs office, A-132 Living/Learning Center. Nomination forms are available in the Dean's office.

Calculus Textbook Committee

A committee has been formed to select a new book for the Calculus 21, 22, 121 sequence. This book will replace the book we are currently using (Thomas and Finney) beginning with Math 21 in Fall 1992. The committee consists of Jim Burgmeier, Dan Zwick, Jonathan Sands, Holly Puterbaugh, and Julie Theoret. They will be soliciting the comments of the faculty concerning this selection, so stay tuned.

Math/Stat Department makes generous Thanksgiving contribution to the Burlington Emergency Food Shelf

Be a part of it by bringing non-perishable items for the box outside Mary Betty's office by Tuesday, November 26.

Thanks, Jonathan Sands

PUMP Committee wraps up semester with presentation on Tuesday, December 3, at 11:00 in the Conference Room

The committee will inform the department of its progress, particularly in finalizing course descriptions for Math 101 and 102 and rewriting parts of the UVM undergraduate catalog dealing

with the undergraduate major in mathematics and statistics for EMBA students. This will allow the department to preview and discuss these items before they appear on the agenda of an E&M Faculty Meeting.

Jonathan Sands, Chair

Summer Jobs

We now have a file which containing listings for summer jobs and activities related to mathematics. Janet will keep this file in her office. If you have a student who is looking for such information, you can direct him/her to Janet.

News from the Dungeon

Hysteria runs rampant in the dungeon of 16 Colchester Ave as the grad students struggle valiantly to tame the savage mathematical beast. As the battle rages, those bravest of warriors wield theorems, algorithms (and anything else they can make up) to stem the onslaught. As the mayhem subsides, they sacrifice one of their own to appease the hungry gods above.

Eighteen days Angela!

(submitted October 31)

Chronicles

Larry Haugh presented invited papers recently at the New England Quality Conference in Saratoga Springs and the Fall Technical Conference in Lexington. They were on the properties of an easy-to-use graphical method of displaying standard deviation results in experimental studies. This research was done in collaboration with Leonard Dubuque of IBM, as well as more recently with John Aleong, and Statistics graduate students Earl Davies, Fred Russell, and Brian Eaddy.

One of our 1991 Statistics (M.S.) graduates, **Scott Lasalles**, dropped by to visit and is doing well in his position with the National Agricultural Statistics Service in the D.C. area.

Larry Haugh met one of our recent undergraduate Statistics majors in Lexington, **Peter Mesenbrink**. He is doing well (President of the Graduate Statistics Association) in his Ph.D. work at North Carolina State University, having received his M.S. now. He presented a paper at the Fall Technical Conference on work done with Northern Telecom in the Research Triangle Park area.

Ken Gross was invited recently to give several colloquium lectures. At Drexel University in Philadelphia he spoke on recent joint work with Hongming Ding on operator-valued Bessel functions. On the same trip, Ken also spoke at Bryn Mawr College. Since nearly half of the audience consisted of undergraduate majors, he gave a principally expository lecture on hypergeometric functions and their generalizations to Jordan algebras. Ken reports that Bryn Mawr has a great program in which undergraduates, graduate students, and faculty all interact with a sense of community. Perhaps the high point of the Bryn Mawr visit was meeting an undergraduate student who had been on the Bulgarian Math Olympiad Team, and won top honors at the final competition. You might want to try this problem, her solution to which is legendary in the competition: Let a and b be positive integers such that

$$\frac{a^2 + b^2}{1 + ab}$$

is an integer, say m . Prove that m is a square. (Ken thinks he remembers the problem correctly.) Finally, at SUNY Albany, Ken spoke on Ding's fundamental work on harmonic analysis on bounded symmetric domains in several complex variables that are not of tube type.