

NEWS

Newsletter, Volume 1, No. 2, Oct 4, 1991

Calendar

[Please give notification of upcoming events to Jeff.]

1991

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| Oct | 4 | Math Colloquium: Tuong ton-That 4:10 002 Kalkin |
| Oct | 11 | Math Colloquium: Hans-Peter Helfrich 4:10 002 Kalkin |
| Oct | 14-15 | ABET Site visit |
| Oct | 15 | Math Colloquium: Rachel McAnallen 7:00 Campus Center Theater |
| Oct | 15 | WAC Fall Welcoming Maura Saule, speaker 3:30-5:30 Memorial Lounge |
| Oct | 17 | A&S Faculty Meeting Memorial Lounge |

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| Oct | 22 | EM Faculty Meeting 10:50 254 Votey |
| Nov | 1 | Joint Colloquium with Delaware St. College 4:10 002 Kalkin |
| Nov | 2 | Science Symposium 10:00-3:00 On Campus |

Message from the Chief

Congratulations to Janet Ferguson, who under the new office reorganization will become Administrative Assistant for the Department. Janet's new title will become effective as soon as the Department fills the staff position vacated when Amy Driscoll resigned at the end of August to become a full-time student. The real "Chief" is now properly identified, and properly titled!

As of last week the Department received approval to fill its vacant staff position at the level of Technical Secretary II. The Personnel Office is currently posting this position, and we hope to be interviewing applicants beginning next week.

Accompanying the arrival of the new staff person will be an office reorganization designed to improve the quality of the workplace and increase effective use of time. The linchpin for the restructuring involves transferring responsibility for answering the phone, distributing mail, and related receptionist duties to work study students, whose desk will be located at the entrance to the mailroom. By such means, the Technical Secretary II will be freed from many of the receptionist tasks and the resulting interruption of work flow, to concentrate on the higher level jobs at hand.

There being no such thing as a free lunch, or in this case free promotion, with Janet's new title will come additional responsibilities, principally budgetary. Over the past few years, the number of budget accounts (e.g., research grants which now total over a half million dollars with an additional one million dollars currently pending at federal agencies, several gift and release accounts, conference accounts, etc.) have increased dramatically, and our operating and equipment budgets have become more complex as well. The reorganization plan includes gradually transferring a substantial amount of high level secretarial work (connected, for example, with scheduling, office hour charts, book orders, etc.) to the new person, freeing Janet to gradually take on the management and oversight of more of the departmental budgets.

As we all know, ever since the opening of the semester, a time of peak pressure on the office, Janet has been doing a yeoperson (I still haven't mastered the art of gender-free expression) job of managing the office by herself, with help from work study students. This has created a hardship, not only for Janet, but for everyone in the Department,

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and it will still take a while to get out from under the backlog. To close on a personal note, I want to express my gratitude to all the faculty and graduate students for being so patient and understanding during a difficult period of serious understaffing in the department office. Thank you for all of your help and support.

General Delivery

The editors for this edition of the newsletter were Jeff Dinitz and Dan Zwick. A number of people in the Department submitted items of news or information.

Submit your candidate for a header slogan to one of the editors, or write it directly into `tb2motto.tex` in the directory `/tmp_mnt/net/math/mathfac/zwick/tex/news`.

A recent trip and related political views

Karin Larson

Given the challenges of motivation and communication with the students whom I teach in the math for elementary education majors, as well as the Math 10-19 sequence, on Sept. 26-28 I returned to the "hallowed" halls in Cambridge to see what the New Directions Through Research in Education might tell me. Featured at the Harvard Graduate School of Education symposium was Carol Gilligan's presentation: "The Psychology of Women and the Education of Girls". The value of the content prompted me to buy her books: *In a Different Voice* and *Making Connections* (Harvard Univ. Press, 1982 & 1990 resp.).

Howard Gardner's presentation, "Intelligence in Seven Phases," based on his research in the schools over the past two decades, reinforced my wish that we could offer introductory level math courses in other modes than 3 x 50 minute x 15 week slots. That "canned" form of time pushes students of disparate background and abilities and we, their

teachers, into gymnastics of the mind and emotions that often results in mental cramps and blankouts.

Pardon my play with words as I keep humor with some serious concerns that have origins back in the public schools. We are hearing and seeing much publicity about President Bush's Vision 2000. None of the research I heard presented in the seven sessions I attended would point strongly toward the proposals (of voluntary national testing and 535 model schools) and the federal financing of those proposals. This summer I wrote a letter to Lamar Alexander, Secretary of the Dept. of Education, including a 13 page information packet about the financial struggles of schools and what it's like out here. This was done as the Government Relations representative for the Vt. Council of Teachers of Math. Although I did not receive a response from Alexander, I do have the satisfaction of having gone on record for VCTM of not approving of the above-mentioned features of Vision 2000. (Jeffords and Sanders did reply to the cc sent to them, concurring with our position.)

My digression to my political activism this summer ties back to the conference in that I had my views reinforced by what I heard. I also can now raise the question of where is the real ivory tower? Is it in Washington?

Some of you have heard my opinions at lunch. Given the roles each of us has as educator, parent, and/or citizen it seems appropriate to extend the invitation to anyone who would like to have more details on the above to see me at lunch (or another time, if we want to save that hour for comic/light fare relief).

Computer Stuff

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

man command

or

man -k keyword

UNIX File System

The UNIX file system is like the DOS file system—files are arranged logically (as opposed to physically) into a huge upside-down tree, with the root at the top. The root is the "root directory," which has no label other than /. You can move around this file tree by using the cd command (but before you do this keep in mind that you return to your original directory by typing cd with no arguments). For instance, if you type cd / the root will be made your "active directory" and you may use ls to list the files and subdirectories there. There is a long path down various paths of the tree that ends up in a subdirectory with your name on it. This is your "home directory." For instance, on newton the path is

```
/tmp_mnt/net/math/mathfac/login_name
```

A useful abbreviation for the path to your home directory is ~

If you have a lot of files, it is convenient to keep them in subdirectories with appropriate labels. For example, you might have a subdirectory called tex in which you have all your TeX files. You might even want to further sort these into papers, letters, reviews, etc., by creating a number of subdirectories of tex with these names.

If you login to some machine, say newton, you can use the ls command to list your files and directories. Even if you have not created any files, you have a number of them—"hidden" system files whose names begin with a period. To list these use ls -a. You will notice that the first two items in the list are ./ and ../. In UNIX, one dot always stands for the current directory and two dots always stands for the parent directory, the one directly above the one you are in. For example, if you are in your root directory, which is labeled with your login name, then the parent directory is mathfac. If you type cd .. you will be in mathfac and you can use ls to list all of the other members of the Department with accounts on newton. The double dot can be very useful in using "relative pathnames" in UNIX. For example, if you have a directory with two subdirectories, say dir1 and dir2, and you are in dir1, then you can move a file to dir2 by typing mv filename ../dir2 (the mv command is smart enough to know whether its second argument is a file or a directory; if the second argument is not a directory then mv renames the file to the second argument).

Here are a few useful UNIX commands for directories:

```
mkdir dir_name make a subdirectory under
the current one with name dir_name;
rmdir dir_name remove a subdirectory with
the name dir_name;
cd dir_name move to the subdirectory called
dir_name;
cd go back to your home directory;
pushd dir_name move to the subdirectory
called dir_name;
popd go back to where you were before you did
a pushd;
```

Next time—EMACS!

Colloquium

The next Colloquium talk, entitled *Asymptotic Expansions for Finite Element Discretizations of Parabolic Problems*, will be held October 11. The speaker is Professor Hans-Peter Helfrich, Director of the *Mathematisches Seminar der Landwirtschaftlichen Fakultät* at the University of Bonn, Germany.

ABSTRACT: *We present an asymptotic expansion for the finite element solution of a general linear parabolic initial-boundary value problem provided that a corresponding expansion for the stationary problem is known. In contrast to classical approaches we employ the smoothing properties of parabolic equations in order to reduce regularity requirements. The backward Euler method is applied to the discretization in time. For the discretization in space some weak regularity assumptions which do not imply compatibility conditions on the initial function are necessary. We also treat the inhomogeneous equation. It is shown that the theory applies to the one-dimensional heat equation with a Sturm-Liouville operator discretized by linear finite elements.*

As usual, there will be refreshments following the talk in the Conference Room.

In the framework of the *1992 Distinguished Lecture Series*, the Department will host Rachel McAnallen of the Institute for Math Mania on October 15. Professor McAnallen will present a

talk entitled "Mathematics with a Sense of Humor" at 7 PM in the Campus Center Theater.

ABSTRACT: *We will look at addition, subtraction, multiplication and division through a humerous eye. Through this investigation we will look at the lies, deceptions and illusions that keep math a mystery to the majority of the population. The purpose of this talk is to have fun and learn some math at the same time.*

Rachel McAnallen is a former math department chairperson, and a former high school math teacher and vice principal. She is also an adjunct professor for CEES. "Math Mania" has been her business for almost ten years—consultancy for school districts nationally as well as locally.

Announcements

PUTNAM EXAM

It's Putnam sign-up time! Please announce to your classes that the Putnam is a continent-wide exam calling for creative thinking to solve new and different mathematics problems. This is a chance for undergraduates to represent UVM, enjoy a challenge, and get a national ranking as an undergraduate mathematician. Practice sessions will include refreshments and socializing with students from St. Michael's College. Have interested students sign up, and give me the list of names by Friday, October 11, at the latest. I will be in touch with them, through you, or tell them I'd be glad to meet them if they can come to my office. The exam is Saturday, December 7, from 10 to 1 and 3 to 6. Unfortunately this is the weekend before exams this year. Thanks for your assistance.

Jonathan Sands, Putnam Committee

RECYCLING NEWS

Cardboard:

In addition to newspapers, white paper, and colored paper, the department is now recycling corrugated cardboard. A sign opposite the Coke machine in 16 Colchester Ave. indicates where you can leave boxes and those mailers that textbooks

come in for the custodian to pick up for recycling daily.

Glossy Paper:

Put your magazines and catalogs, etc. in the bin under the table in the mailroom, but don't bring them in from home. This is one of the special times of year when these will be recycled. They will be picked up on October 22.

Junk Mail:

Cut down on waste at the source by reducing the amount of junk mail you get. If you want to remove your name from the mailing list of the 1700 companies of the Direct Mail Marketing Association, just write to DMMA, Mail Preference Service, 6 East 43rd St., NY, NY 10017.

Thanks for being an environmentally-conscious department by conserving paper and recycling. — Jonathan Sands

NEWS FROM PUMP, THE PROGRESSIVE UNDERGRADUATE MATH PROGRAM COMMITTEE

THE NEXT OPEN FORUM will be on Tues. Oct. 8 at 11:00 in the Conference Room at 16 Colchester Ave. The PUMP committee hopes to get to the heart of our ambitions for our majors by describing a possible revision of the requirements for the B.S. in mathematics, and letting the reactions fly. This revision grew out of the forums already held on the subjects of requirements and tracks within the major, but also includes the notion of breadth.

FUTURE FORUMS will consider the topics of Advising, Departmental Honors, and Calculus offerings. The PUMP committee will also be actively seeking input from students on these matters, especially via the Student Chapter of the MAA.

A CALCULUS COLLOQUIUM SERIES is planned for the purposes of informing us as to what calculus offerings we should be considering. We expect to invite three experts on the teaching of calculus, and have them each give a talk and consult with us. Then we will hold a forum for discussion. This may help us with the selection of a calculus text, too!

The PUMP committee meets regularly at 4:10 on Wednesdays in the Conference Room, and welcomes visitors. We thanks those who have already helped us with their comments, suggestions, and involvement.

Jonathan Sands, Chair

SCIENCE SYMPOSIUM

The annual Science Symposium at UVM will be held this year on Saturday, November 2 from 10:00 to 3:00. This is a one-day program that features workshops, lab demos, and a poster session focusing on current topics of research being pursued at UVM. This year, faculty and students from Delaware State College will be visiting UVM for the Symposium, and there will be a Colloquium talk on Friday, November 1 in the Department. See Janet if you would like to take part in the poster session.

MAA STUDENT CHAPTER

The student chapter of the MAA has begun the semester in a brand new setting. The first meeting was held in the new Math Study Room on the third floor of the MCHV building, 2 Colchester Ave. The Study Room was made as a place for math students to go and study, meet with other math students, or just to socialize. All of the MAA meetings will be held there as well.

This year MAA is planning a number of events, including speakers about careers and math topics, discussions about changes in the Math Department, and social get-togethers. The main focus of MAA is to provide a way for math students to meet other math students, as well as for faculty and students to get to know each other outside of class. The meetings will also keep students updated on the happenings in the Math Department. Everyone is welcome at the meetings—math majors or those just interested in math. We are looking forward to a great year and will see you in the new study room!

CONGRATULATIONS TO JANET FERGUSON FROM EVERYONE IN THE DEPARTMENT ON BEING PROMOTED TO ADMINISTRATIVE ASSISTANT!

The next issue will be October 25. Keep this in mind when submitting news items for the next issue.

Seminars

*The sea is calm tonight,
The tide is full, the moon lies fair
Upon the Straits;—on the French coast,
the light
Gleams, and is gone; the cliffs of England stand,
Glimmering and vast, out in the tranquil bay.
Come to the analysis seminar ...*

Where: the Math Conference Room.

When: 1:30-2:30, Thursdays (note time change!)

Who: Mike Wilson.

What: continuing to lecture from Paul Koosis's book on the logarithmic integral. This week we started into the Mergelian/Akhiezer theorems on weighted polynomial approximation.

You'll be glad you came—

*—for the world, which seems
To lie before us like a land of dreams,
So various, so beautiful, so new,
Hath really neither joy, nor love, nor light,
Nor certitude, nor peace, nor help for pain ...*

Chronicles

How I spent my summer and winter vacations

by Roger Cooke

I've spent most of my research time during 1991 working on the history of the uniqueness theory of trigonometric series. The project began during January, a month I spent at the Institut Mittag-Leffler in Djursholm, Sweden at the invitation of the Swedish Academy of Sciences. At the time I hoped to look up everything Mittag-Leffler had by way of correspondence and publications relating to Russian mathematicians and American mathematicians.

I discovered, however, that the other participants expected me to sing for my supper. In plain language they expected me to give a seminar. Since the uniqueness of trigonometric series was a familiar

topic to me and had Russian connections (Luzin, Men'shov, Aleksandrov), I wound up spending most of my time immersed in Mittag-Leffler's marvelous library looking up the history of this subject. The result was a lecture on my preliminary results and a 25-pound stack of Xeroxed articles that I hoped to work into a full-length paper. Meanwhile an invitation came to attend the Second Annual Workshop on the History of Modern Mathematics in Göttingen in July. I decided to present the results at that time. Time moved faster than I expected, and although the results were nearly complete by July and were (I boast) well-received by the audience in Göttingen, the final version is only now being prepared for submission to *Archive for History of Exact Sciences*, where (I am assured by one of the editors) it will be published.

Lost & Found

Found: One banner, with the inscription EX-PLORE MATHEMATICS.



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