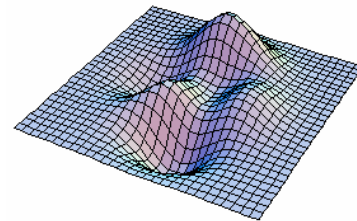


University of Wisconsin-La Crosse Mathematics Department Student Newsletter



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Fall '01

WELCOME NEW FACULTY MEMBERS

The Mathematics Department is welcoming three new faculty members this Fall. Here is a little about each of them, in their own words.

Dr. Karl Katchee: "I recently earned my Ph.D. from the University of Nebraska-Lincoln in the field of commutative algebra (with a slight combinatorial spin). My master's degree is from Nebraska, and I also attended The University of Chicago (B.S. 1990). I enjoy teaching and learning mathematics, of course, but I also like people, art, music, travel, sports, peace, quiet, and the occasional casino. I have a wife (Patricia Nelson), and I enjoy hanging around with her. I grew up in the Iowa City area (Coralville, to be precise), and I'm thrilled that La Crosse is just a few hours away from there."

Dr. Michael Lang: "I'm a Wisconsin boy. From Ashland (on Lake Superior) to Green Bay (sort of on Lake Michigan) to Madison (on Lakes Mendota, Monona, Wingra, etc.) to La Crosse (on THE river--close enough), I've basically been moving around the state. Actually, I have done stints elsewhere, like D.C., Texas and Hungary. Come to think of it, I like to travel quite a bit. In the past few years I've been to Asia once, Central America a couple times, and Europe enough to lose track. Something keeps pulling me back, though. Maybe it's the brats, maybe it's reliably being able to watch the Packers, maybe it's the mosquitos. Okay, it's not the mosquitos. Whatever it is, I'm looking forward to finding some volleyball and racquetball, learning waterskiing and golf, and working on some cool combinatorics (as if there were another kind)."

Dr. Patricia Nelson: "I was born and raised in Stillwater, Minnesota and attended St. Olaf College. I earned my master's degree in math (with a concentration in actuarial science) at the University of Minnesota. After deciding to not become an actuary, I taught mathematics at an international school in Sharjah, United Arab Emirates, and remained there, with my husband Karl, for two years.

After traveling extensively in Southeast Asia, I returned to the U.S. to earn a Ph. D. in mathematics. I graduated from the University of Nebraska-Lincoln in May and my area of research is graph theory and combinatorics.

I enjoy running, cross-country skiing, hiking, backgammon, and films, and I'm very excited to be here at UW-L!"

NEW STATISTICAL CONSULTING CENTER

Beginning this fall, the Mathematics Department now houses a new Statistical Consulting Center (SCC). The center, currently directed by Dr. Abdul Elfessi, will provide assistance to faculty members, masters level students and undergraduate researchers in need of statistical services and advice. Statistical services include :

- 1) Assistance in areas of research design
- 2) Data modeling and analysis
- 3) Interpretation of results of any projects that have a statistical foundation

Students majoring in Mathematics with an Emphasis in Statistics will work in the SCC to give them hands - on experience working with real data from real statistical projects.

For more information, contact Dr. Abdul Elfessi, 2031 Cowley Hall

GUIDE FOR THE MATH MAJOR AVAILABLE

The "UW-La Crosse Guide for the Mathematics Major" is meant as a resource for current mathematics majors/minors or anyone considering majoring or minoring in mathematics. The guide is available in hard copy in the Mathematics Office - 1020 Cowley Hall and in the mathematics tutoring room - 102 Cowley. There is also an electronic version available on the web at our Departmental home page at www.uwlax.edu/SAH/mathematics.

The guide includes information on requirements for the various majors and minors, course descriptions and the course offering pattern, as well as information on activities on campus, scholarships and tutoring opportunities, internships and undergraduate research, and general career opportunities after graduation. We hope that you will find this a useful source of information on our programs and other activities.

MATH CLUB NEWS

The Math Club is a recognized student academic club that offers social and educational activities. Anyone interested in mathematics, computer science, or statistics is encouraged to become a member. Activities include, but are not limited to, interesting mathematical talks by invited speakers, math trivia contests, outdoor activities, picnics, potluck dinners and parties, trips to student mathematics conferences, and friendly sporting contests with other academic clubs. The invited talks are presented at a level appropriate for undergraduate math majors. These talks cover topics in mathematics not ordinarily covered in regular courses, from pure mathematics to the best way to get a job after graduating. A typical get-together features free snacks and drinks, and is attended by math students, their friends, and some math faculty. Membership and participation are very casual. Everyone is welcome.

The club is run almost entirely by students on a volunteer basis with elected student officers. The following students are the officers of the club for the 2001-2002

President: Matt Wokasch
Vice Presidents: Victor Feltes and Jesse Schoenemann.

New faculty member Dr. Michael Lang, and Dr. Jeff Boyle are helping advise the club. The club is planning to have their regular meetings late in the afternoon on Wednesdays, about every two weeks. The club is currently planning several fun and educational activities for this coming semester. Please let us know if you have ideas for speakers or activities.

MATH CLUB WEBSITE

To stay updated on the activities of the math club, check out their webpage. You can get to it from the Mathematics Department web page at

<http://perth.uwlax.edu/mathematics/>

or you can get there directly using the address

<http://perth.uwlax.edu/mathematics/personal/wagner/mclub.html>

STUDENT ACTIVITIES

Some of your fellow students had some interesting experiences over the last few months. Here's a little about what they were up to:

Michael Heckman worked on a project in statistical consulting with Dr. Abdul Elfessi during the Spring 2001 semester.

Michelle Czapinski had an internship at the Trane Company. Dr. Bruce Riley served as her faculty advisor.

Michael Kristopeit received an SAH Undergraduate Research Fellowship for the project "An Expert System to Emulate Remedial Mathematics Instruction." A related paper was submitted to the UW-La Crosse Research Journal. Michael's research was directed by Dr. Robert Hoar.

Scott Battaglia received an SAH Undergraduate Research Fellowship for the project "A New Method of Modeling Split Populations." Scott presented the results at the UW-La Crosse Undergraduate Research Day, March 2001. Scott's research was directed by Dr. David Reineke.

Matthew Wokasch worked on the project "Pebbling in Line Graphs." Matthew presented his results at the UW-La Crosse Undergraduate Research Day, March 2001, and at the Pi Mu Epsilon Conference at Skidmore College, Saratoga Springs, NY, May 2001. An SAH Student Researcher Travel and Supplies Grant supported his participation at the Pi Mu Epsilon Conference. Matthew's research was directed by Dr. Michelle Wagner.

Michelle and Nicole Jaeger worked with Drs. Susan Kelly and David Reineke on their workshops for Girls in Science, a program held on campus from middle school girls to create and/or foster interest in science and mathematics.

400 LEVEL COURSE OFFERINGS FOR SPRING 2002

In order to help you begin to plan your schedule for Spring 2002, we thought it might be helpful to give you some information on the schedule for next semester.

The 400 level courses being offered next semester include:

- MTH 410 – Complex Analysis
- MTH 412 – Abstract Algebra II
- MTH 442 – Mathematical Statistics II
- MTH 447 – Nonparametric Statistics
- MTH 480 – Studies in Applied Math

CHALLENGING PROBLEMS COMPETITION

The Math Department's challenging problem competition continues this year. The competition is just for fun, with the intention of stimulating interest in mathematics. The competition is open to all students at all levels and all majors. In recent years, the top problem solvers were awarded small prizes for their efforts.

Congratulations to all of the successful problem solvers from last year's competition. A total of 26 students cracked at least one of the challenging problems. Top individual solvers were **John Sullivan, Tara Kroening, Mark Dubey** and **Dr. Dean Whiteway** (alumnus). For their efforts, each was awarded either a classic popular mathematical book or a tee shirt at the spring Math Department's Awards Banquet.

Here's how it works for those of you who are new to it. A challenging problem will be posted every two weeks on the Math Club bulletin board outside the tutor room (102 Cowley Hall). After a problem has been up for two weeks all correct solvers will be acknowledged on the bulletin board. A correct solution will also be posted on the bulletin board along with the next challenging problem. If no correct solutions are received in the first two weeks, the problem will remain open until a correct solution is submitted. Students can pick up a copy of the current problem from the envelope on the Math Club bulletin board.

The challenging problems also have their own web site where you can find a statement of the current problem along with all the past problems with their solutions and a list of the correct solvers. The web site is <http://perth.uwlax.edu/mathematics/POTM/>

The first problem of the semester is given below. Solutions can be submitted to Jeff Boyle, 1033 Cowley Hall by noon, Friday, Sept. 21.

Challenging Problem #1 Fall, 2001

The first earth colony on Mars has been swept by an epidemic of Barsoomian flu. The cause: a native Martian virus not yet isolated.

There is no way to identify a newly infected person until the symptoms appear weeks later. The flu is highly contagious, but only by direct contact. The virus transfers readily from flesh to flesh, or from flesh to any object which in turn can contaminate any flesh it touches. Residents are going to extreme lengths to avoid touching one another, or touching objects that may be contaminated.

Ms. Hooker, director of the colony, has been seriously injured in a rocket accident. Three immediate operations are required. The first will be by Dr. Zenophon, the second by Dr. Ypsilanti, the third by Dr. Zeno. Any of the surgeons may be infected with Barsoomian flu. Ms. Hooker, too, may have caught the disease.

Just before the first operation it is discovered that the colony's hospital has only two pairs of sterile surgeon's gloves. No others are obtainable and there is no time for re-sterilizing. Each surgeon must operate with both hands.

"I don't see how we can avoid the risk of one of us becoming infected," says Dr. Zenophon to Dr. Zeno.

"When I operate, my hands may contaminate the insides of my gloves. Ms. Hooker's body may contaminate the outsides. The same thing will happen to the gloves worn by Dr. Ypsilanti. When it's your turn, you'll have to wear gloves that could be contaminated on both sides."

"Au contraire," says Dr. Zeno, who had taken a course in topology when he was a young medical student in Paris. "There's a simple procedure that will eliminate all risk of any of us catching the flu from one another or from Ms. Hooker."

What does Dr. Zeno have in mind?