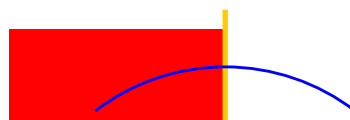

Special points of interest:

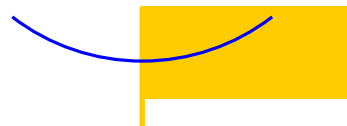
- FAST Talks
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Newsletter



Welcome

This is the first monthly newsletter of the Department of Mathematics and Computer Science at Denison University. The intent of this newsletter is to inform student and faculty members about events inside and outside the department as well as recognize achievements of our faculty and students. As you can see from the length of this first issue, we are a very active department and there are many opportunities for students to get involved in a range of activities at Denison, regionally, or nationally. If you have something you would like to share or topics you would like to see in upcoming newsletters, please contact Professor Lew Ludwig.

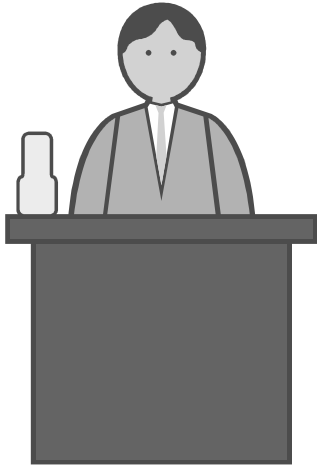


Calling all wordsmiths! Here's your chance to win free food!

As you probably noticed, our newsletter is currently nameless. We were thinking of calling it "Nemo," but that didn't seem to capture the essence of our intent. We now seek the assistance of our readership to create an interesting title for our newsletter. As

we are a joint department, the name needs to reflect both mathematics and computer science. In that spirit, *Mathematical Times* or *Computer Chronicles* are out. Also, brevity is important. So, if you have a clever name for the newsletter, please submit your sugges-

tion to Professor Lew Ludwig (ludwigl@denison.edu). The winner, chosen by a committee, will receive a pizza of his or her choice from the greater Granville area as well as the intrinsic reward of putting one's mark on such a fine publication!



Wednesday FAST Talks:

Have you ever wondered what the traveling salesman problem is about or why you must read that funny blurry word to get a Yahoo e-mail account? To answer these and other interesting math and computer science related questions, the Mathematics and Com-

puter Science Department will be presenting Wednesday FAST Talks (Faculty and Student Talks). These will meet every first and third Wednesday of the month from 3:30 - 4:30 pm during the fall 2003 semester. The aim of these talks is to present a new and interesting

topic in mathematics and/or computer science in a straightforward, understandable fashion. Anyone with **calculus I/II** or **Intro to Programming** experience will find interest in these talks and of course in the free snacks beforehand.

The Inaugural FAST Talk

The inaugural Wednesday FAST Talk will be Wednesday, September 17, 2003 in Olin 114 by **Professor Matt Kretchmar**. *In Your Face: How People Recognize Each Other*.

Have you ever wondered how people identify criminals from wanted posters and sketch artists? Those drawings are often quite unlike the actual criminal, yet there is

enough similarity that a light bulb goes off in someone's head that says, "Wow, that looks a lot like so and so." And how do those new "public cameras" work that are supposed to scan people's faces and match them to databases of wanted criminals? Professor Kretchmar will examine these problems from the perspective of a computer scientist

who is concerned about memory constraints and processing time.

This talk is open to anyone interested in solving problems and recognizing old photographs of long-lost relatives. Though we will mention some slightly advanced concepts, no special mathematical skills are required to follow along.

"In Your Face: How People Recognize Each Other"



Conferences and Meetings:

The *Tenth Annual Consortium for Computing Sciences in Colleges: Midwest Conference* will be held at Denison University on **Friday and Saturday, October 3 and 4, 2003**.

Presentations at

the conference will emphasize CS curriculum issues and the incorporation of current research results into coursework. There will be a student programming contest on Saturday, as well as an op-

portunity to examine some new textbooks and course materials. For details please visit the internet link <http://www.denison.edu/mathsci/events/ccsc03/index.html>.

Thirty-First Annual Conference—Mathematics and Statistics Pi Mu Epsilon Thirtieth Annual Student Conference

The *Thirty-First Annual Conference of The Department of Mathematics and Statistics* at Miami University will be held **Friday and Saturday, October 3 and 4, 2003**. The topic for this year is “Discrete Mathematics and Its Applications.”

Invited speakers are Charles Colbourn of Arizona State University and Robin Thomas of the Georgia In-

stitute of Technology.

Concurrently, the Ohio Delta Chapter of Pi Mu Epsilon will hold its *Thirtieth Annual Student Conference*. This is a great opportunity for students to present mathematical topics to peers from the state. Denison will be sending a group of students to the conference to attend and/or present. Miami will provide the lodging and

the Provost’s Office at Denison will cover travel and dining expenses. If interested, please see Professors Kevin Hutson, Lew Ludwig, or Matt Neal. More information about the conference can be found at <http://www.users.muohio.edu/jiangt/fall-conference/>

Prime Obsession: Bernhard Riemann & the Greatest Unsolved Problem

On **Thursday, October 23, 2003**, author John Derbyshire will present a talk on his new book, *Prime Obsession: Bernhard Riemann and the Greatest Unsolved Problem*. Come and see this engaging

speaker discuss one of The Millennium Problems. These are seven of the greatest unsolved mathematical problems of our time.

The Clay Foundation of Cambridge has offered a prize of \$1 million for correct

solutions. So if you are in need of some spending money, this talk may be for you! This presentation is part of the Gordon Speaker Series and is generously funded by the Gordon family.

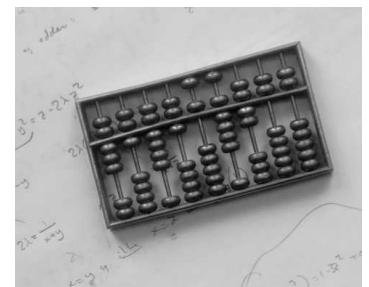
“Prize....
\$1 million for correct
solutions”

The Midstates Conference for Undergraduate Research in Computer Science and Mathematics

The Denison Department of Mathematics and Computer Science will host The Midstates Conference for Undergraduate Research in Computer Science and Mathematics on **Saturday, October 25, 2003**. This event will provide

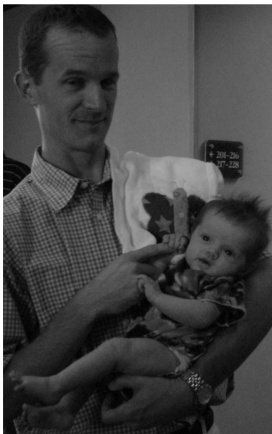
a new venue to target the growing body of undergraduate research work in our region. Student presenters are chosen on the basis of a submitted research paper reviewed by a program committee comprised of faculty in

computer science and mathematics. The accepted papers will be put into a proceedings and distributed to those who attend. For more information see <http://www.denison.edu/mathsci/mcurscm2003/index.html>.





Marla, Joshua and Kevin
Hutson



Matt and Dylan
Kretchmar



Michael Khoury and
Elizabeth Ehret

Open House

**Friday, November 7,
2003.**

This event is to introduce prospective students to the Case Western Master of Science in Management in Operations Research

(MSM-OR), Master of Science in Management in Supply Chain (MSM-SC) as well as the PhD program.

Faculty/Student Announcements:

Congratulations to **Michael Khoury** ('03) and **Elizabeth Ehret** ('04) for their fine showing in the National Problem Solving Competition at the 2003 Mathfest in Boulder, CO. Michael placed first in the nation and Elizabeth placed fifth. In addition, we are happy to announce the wedding engagement of Michael and Elizabeth. Good show!

Professor Matthew Kretchmar and **Laura Mickelson** are happy to announce the birth of **Dylan Amelia Kretchmar** on June 30, 2003. Everyone is doing fine except for being a bit sleepy!

Professor Kevin Hutson has joined the Department of Mathe-

tics this year. Kevin received his PhD from Clemson University in August 2002. His PhD dissertation was titled "Stochastic Minimum Spanning Trees," which combined elements from graph theory, combinatorial optimization, probability, and computer science. Kevin spent a year teaching at Furman University in Greenville, SC, before coming here. He has also worked in industry as an Operations Research Analyst helping to design and build a 1.2 million square foot manufacturing plant and warehouse. Kevin was selected for Project NExT last spring and attended MathFest last August as an R. L. Moore Fellow to the Project NExT workshop.

His wife, Marla, is a stay-at-home statistician who builds statistical models for Acxiom Corporation, a data warehouse company based in Arkansas.

His 2-year-old son Joshua (who, as Kevin says, is possibly the most-strikingly handsome 2-year-old in the world) loves playing basketball and being pulled in his wagon.

Kevin loves to play sports (you name and he'll play it) and would be very interested in starting a math and computer science ultimate Frisbee game.

There is also a rumor that he has no fear of roller coasters, the taller the better!

Faculty/Student Activities

We had a very active slate of summer research students this year. This affords students the opportunity to work closely with a faculty member in the department on a specific research topic for an extended period of time. Students are funded for their work. This type of experience looks great on resumes or graduate school applications. If you are interested in such an opportunity, see any one of the department members to discuss the possibilities. The following is a list of this summer's students, their topics, and advisors:

Robey Holderith *An Operator Space Classification of Mixed Injective Hilbert Spaces* with Professor Matt Neal

Elizabeth Ehret *Cylindrical (or Periodic) Geometry* with Professor Mike Westmoreland

Rahul Parikh *Automatic Service Discovery for Content Addressable Storage* with Professors Tom Bressoud and Jessen Havill.

Stoyan Paunov *Inter-*

faces for Content Addressable Storage Providers and Clients with Drs. Tom Bressoud and Jessen Havill.

Kevin Connor *Design and Implementation of a Stored Program Computer* with Professor Todd Feil.

Anthony Fressola *Introduction to a New Type of Induction* with Professor Joan Krone.

Nalini Iyer *Formal Specification Languages and Their Semantics for Software* with Professor Joan Krone.

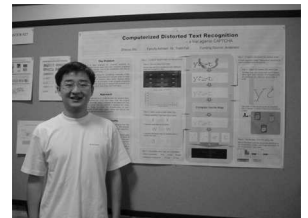
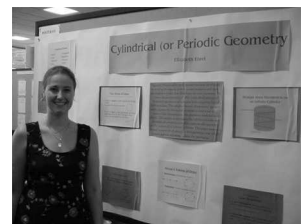
Adam Wu *Distorted Test Recognition: A Trial Against the CAPTCHA Test* with Professor Todd Feil.

Professors Matt Kretchmar and Todd Feil and **Rohit Bansal** published a paper titled "Improved Automatic Discovery of Subgoals for Options in Hierarchical Reinforcement Learning." The paper will appear in the Oct 3 issue of the Journal of Computer Science and Technology.

Professor Lew Ludwig presented an

invited talk, "Recent Progress in the Study of kappa-Frechet Spaces," at the 2003 Summer Conference in Topology and Its Applications at Howard University in July. This paper was recently accepted by the Houston Journal of Mathematics. In June, he presented an invited talk, "Recent Progress in Alpha-type Separation Axioms and a New Type of Convergence," at the 2003 Brooklyn Topology Conference at Brooklyn College.

Professor Tom Bressoud published and presented "Engineering Fault-Tolerant TCP/IP Servers Using FT-TCP" in the Proceedings of the 2003 International Conference on Dependable Systems and Networks (DSN'03, formerly FTCS) in June 2003. The conference was held in San Francisco, CA. Tom also published and presented "Opportunistic Use of Content Addressable Storage for Distributed File Systems" in the Proceedings of the USENIX 2003 Annual Technical Conference, held in San Antonio, TX in June 2003.



Department of Mathematics and Computer Science

Denison University
201 Olin Science Building
Granville, OH 43023

Phone: 740-587-6259

Fax: 740-587-5749

[http://www.denison.edu/mathsci/
index.html](http://www.denison.edu/mathsci/index.html)

DENISON

One Student's Perspective

by Elizabeth Ehret

Are you a junior or sophomore math major who is considering going to graduate school in mathematics but unsure? I highly recommend you attend The Brigham Young University Summer Mathematics Institute in Utah. This program is a one week long "math camp" with the purpose of encouraging students to attend graduate school in mathematics. The organizers of the program use the one week to expose students to various topics in graduate level mathematics. One specific topic, "the mathematics of soap bubbles," was considered in some depth. The camp answers questions such as "who should go to grad school?" and "how can I afford grad school?" In addition, we had several field trips throughout Utah, including a day at Bryce

National Canyon, a mountain hike to a waterfall, and an evening in Salt Lake City.

Before attending the Institute, I gave some fleeting thoughts of applying to graduate school in mathematics decided not to attend. I was afraid I would not be successful, would not enjoy it and that I could not afford to go. Through this opportunity, I learned that I really like topics of mathematics that students don't normally experience in undergraduate mathematics and that I could hold my own in a selective national group of undergraduate mathematicians. I also discovered that the average math graduate student is actually PAID \$13,000 a year to attend graduate school. It was an experience that literally changed my life. I am

now planning to attend graduate school in mathematics and hopefully earn my Ph. D. It was an extremely enjoyable week. I would encourage anyone interested to apply to this program. Junior-level women have an enrollment advantage. More on this program can be found at <http://www.math.byu.edu/~mdorff/flyer.htm>

Note: There are many similar programs around the nation that are available to undergraduate students. If you are interested in exploring various possibilities, please contact Lew Ludwig.