
Union University Mathematics and Computer Science Newsletter

Spring/Summer 2002 ♦ Issue 6

Student Wins Regional Paper Contest

Dr. Matt Lunsford, Dr. Bryan Dawson, and students Caroline Ellis, Patricia Rush, Jeff Patterson, and Robert Rickett attended the Southeastern Regional Convention of Kappa Mu Epsilon on the campus of Mississippi State University March 22-23, 2002. Caroline's presentation "Mathematical Discoveries of the Bernoulli Brothers" won the Best Undergraduate Paper Award. This is the fourth time in the last five years that our students have won such an award at a regional or national convention. Jeff Patterson also presented a paper at the convention entitled "Baseball: A Statistical Analysis", and Patricia Rush chaired one of the paper sessions. Dr. Dawson serves as regional director.

Dawson and Riggs' Research Receives National Attention

The work of Dr. Bryan Dawson and Dr. Troy Riggs on highway speeds, which was completed under the auspices of a Teagle grant (administered by Union's Center for Faculty Development), has received a great deal of attention after its presentation in San Diego. First, the work was reported in the January 19, 2002 issue of *New Scientist*. Secondly, the American Institute of Physics contacted Drs. Dawson and Riggs about the possibility of producing a 90-second news clip about their research as part of the *Discoveries and Breakthroughs Inside Science* syndicated series, which runs on about 80 local television stations as part of their local news programs; unfortunately, that didn't materialize. However, Ivars Peterson gave further publicity to the work in the March 16 edition of his online column "Ivars Peterson's MathTrek", produced jointly

for Science News and the Mathematical Association of America (see www.sciencenews.org/20020316/mathtr ek.asp). Drs. Dawson and Riggs plan to submit their work to the *College Mathematics Journal* for formal publication.

In related news, Dr. Bryan Dawson's previously published research on fair division as it applies to sports drafts was the topic of chapter 11 of Ivars Peterson's new book *Mathematical Treks: From Surreal Numbers to Magic Circles*. The book is published by the Mathematical Association of America.



Student Awards

The Dr. Joe Tucker Scholarship for 2002-3 was awarded to Amy Miller (photo above).

Willie George won the 2001-2 First Year Programming Award.

The high scores for the 2001-2 Major Field Achievement Test were earned by Dwayne Pfaff in Computer Science and by Jessica Worrell in Mathematics.

At Awards Day, Academic Excellence Medals in Math were awarded to Nicky McDowell, Bethany Key, and Jessica Worrell. Katie Miller and Bethany Key were awarded Academic Excellence Medals in Computer Science.

Allison Lashley received the Wolfram Research Inc. Freshman Mathematica Award, which is awarded annually to a deserving calculus student and includes a lifetime copy of the Mathematica software.

Computer Science Faculty Attend Meetings and Make Presentations

Ms. Stephanie Edge attended a workshop called *Troubleshooting PCs* in Paducah, Kentucky on May 14-15.

Mr. Jim Kirk presented a paper titled *Motivation for a Genetically-Trained Topography-Preserving Map* at the 2002 World Conference on Computational Intelligence (WCCI) in Honolulu in May. The WCCI is an occasional joint meeting of three premier annual conferences: the IJCNN on neural networks, the CEC on evolutionary computation, and the FUZZ-IEEE on fuzzy systems. Mr. Kirk's paper can be found in the published proceedings of the conference.

Dr. Jan Wilms attended several conferences during the past academic year: a workshop from IBM on DB2 administration and a workshop on computer security hosted by Purdue University. He represented Union at the annual EduCause event, a huge conference (5,000+ attendees) on IT in higher education, and at the yearly CCCU conference on technology held at Abilene CU. Union University will host this conference in May of 2003.

Dr. Wilms gave a tutorial on using Excel for administrative task at the KSU Chair's conference, and taught for a week in Inner Mongolia through the English Language Institute in China. To

help him with his new role as Associate Dean, he attended the weeklong CCCU Leadership Development Institute.

At the end of the summer, Dr Wilms got certification in A+ (now offered by the department as CSC220) and Linux+, which he will teach in the Operating Systems Class.

Mathematics Faculty Attend Meetings

Dr. Chris Hail and Mr. Richard Dehn attended the Mississippi Council of Teachers of Mathematics in Olive Branch, Miss. The conference was aimed at helping teachers of mathematics improve their pedagogical approaches and their means of assessing mathematical learning.

Dr. Matt Lunsford and Mr. Dwayne Jennings attended the joint Southeastern section meeting of the American Mathematical Society and the Mathematical Association of America at Georgia Tech University in Atlanta. Dr. Lunsford presented *The Ideas of Evariste Galois: Recovering Motivation in Abstract Algebra* from his Pew research and participated in the short course on *Cryptology: Mathematics, Craft, and Implementation*. Mr. Jennings participated in the short course on *Teaching Mathematics from Afar*, which focused on distance learning.

Mr. Dwayne Jennings, Dr. Matt Lunsford, and Dr. Bryan Dawson attended the annual Mathematical Association of America TN state dinner hosted by Vanderbilt University in Nashville. The speaker for the event was Professor Gilbert Strang of MIT, who is a well known author and former President of the Society of Industrial and Applied Mathematics.

Mr. Dwayne Jennings also attended the Mathematica Developer Conference on October 11-13, 2001, in Champaign, Illinois. The conference is a resource for developers interested in creating Mathematica-related tools, products, courseware or literature, or who wish to offer services as a Mathematica trainer, consultant, or evangelist.

Mr. Don Richard attended the Rocky Mountain Mathematica Conference in July, gaining new skills that can be used in Mathematica-enhanced courses at Union.

Dr. Bryan Dawson and Dr. Troy Riggs attended the Joint Mathematics Meetings in San Diego, Jan. 6-9, 2002. Dr. Riggs presented a talk entitled "It's Not Fair!: A Coin-Testing Project" in a special session called "Classroom Demonstrations and Course Projects That Make a Difference." Dr. Dawson presented "Highway Relativity," work done jointly with Dr. Riggs, and that work was also very well-received.



Ms. Edge Promoted

Ms. Stephanie Edge was recently promoted to Associate Professor. Ms. Edge has served Union for six years, and the department currently keeps her busy teaching Algorithms and Data Structures, as well as Java programming. Congratulations, Ms. Edge!

ACM News

The ACM had a busy year, starting with the Fall Welcome Back Party.

Presentations were given through the year by internal and external speakers. Dr. Anthony Nichols, founder of Open Eye Scientific Software, gave a lecture entitled *Computing in Pharmacology: Molecular Modeling and SearchSoftware Developer*. There was also a presentation by Navy recruiters, who informed students of the opportunities in the military for math and computer science graduates. Senior Seminar presentations rounded out the fall semester.

In the spring, Robert Rickett, incoming ACM president, presented *An Inside Look at a Computer Business*. Another useful presentation was *Developing A CSC Resume*, given by Union's Jackie Taylor & Lynn Gneagy. Finally, the ACM enjoyed an End of Year Celebration for the CSC graduating seniors.

Incoming ACM officers are:

President	Robert Rickett
Vice-President	Renee Jones
Vice-President	Amy Miller
Secretary	James Davis
Treasurer	Willie George

Math/CS Colloquium Series Continues

Seven speakers offered colloquia on a variety of topics over the past academic year:

Windows 2000: Exploring the Basics, Ms. Stephanie Edge, September 10, 2001

It Can't be Done--Or Can It?: From Greeks to Galois to Gödel, Dr. Bryan Dawson, October 15, 2001

The Ideas of Evariste Galois: A Brief Look at Classical Galois Theory, Dr. Matt Lunsford, November 12, 2001

Primal Sounds: Using Multimedia to Introduce Properties of Prime Numbers, Dr. Chris Caldwell (UT Martin), March 12, 2002

Highway Relativity: Some Driving Illusions, Drs. Bryan Dawson & Troy Riggs, April 8, 2002

Self-Organizing Maps, Mr. Jim Kirk, April 29, 2002

The Banach-Tarski Paradox, Mr. Steve Haataja (University of Nebraska-Lincoln), May 20, 2002

KME Activities

Kappa Mu Epsilon officers for 2001-2 were Patricia Rush, president; Caroline Ellis, vice president; Breanne Oldham, secretary; and Amanda Cary, treasurer. The fall semester's events began with a social in September. In the October meeting, Amanda Cary shared about her experiences as a summer intern at a Tyson chicken plant, where she put her statistics classes to good use. At the end of November, several members gave senior project presentations. The final fall event was a Christmas social (potluck and white elephant gift exchange) at the home of Dr. Lunsford. The tradition of sponsoring a needy child for the annual Carl Perkins Christmas Program was also continued.

KME held its annual Spring initiation banquet on April 11 at Barnhill's Family Restaurant. Six students were initiated: Nathan Creel, Ashley Merrick, Kelly

Meyer, Allen Smith, Brian Taylor, and Nikki Vassar. Christy Moore ('94, mathematics) was the guest speaker. Christy currently teaches high school mathematics at the University School of Jackson. The officers for 2002-03 were elected: President, Breanne Oldham, Vice-President Nikki Vassar, Secretary Allen Smith, and Treasurer Amanda Cary.

At the end of the academic year, KME and ACM jointly sponsored a celebration for graduating seniors in mathematics and computer science. The following senior mathematics majors were recognized: Matt Pigg, Leigh Ann Smalley, Patricia Rush, Jessica Worrell, and Bethany Key.

Transitions

Dr. Matt Lunsford has decided to leave the office of Associate Dean in order to devote more time to teaching and scholarly activity. Dr. Jan Wilms has agreed to become the new Associate Dean of Arts and Sciences. Dr. Bryan Dawson will become the new department chair in place of Dr. Wilms. These changes are all effective beginning in the Fall semester of 2002.

In related news, Dr. Lunsford received a Teagle grant for course redesign of MAT 415 (Abstract Algebra) as well as the Newell Innovative Teaching Award for "An Integrated Approach to Teaching the History of Mathematics" this spring.

Union Grad Makes Plea for Teachers

I would like to take this opportunity to express to my former classmates and professors how much I appreciate their contributions to my life...and to make a small plea for my profession.

In 1990, as a 32-year-old freshman attempting to gain purchase toward the future, I needed and received at Union, additional help in some of my course work (*understatement.*) The best of my professional work is a product of the career and personal guidance offered graciously by faculty and staff at Union, and of the skills taught and the philosophy engendered by those individuals. Special thanks to Dr. Joe Tucker, Mr. Don Richard, Mr. Dwayne Jennings, Dr. Matt Lunsford, and Dr. Lynn Stranak, mathematics; and Jinni Leigh Blalack, psychology. These teachers, along with professors in other fields, made pedagogy seem effortless. It's not. They just gracefully executed their tasks such that it seemed so. Teaching is an interesting mix of analysis, planning, research, and application--definitely challenging, always an adventure--a commitment of time and soul. It is also one of the only professions whose practitioners, on a regular basis, are directly and measurably--sometimes immediately--rewarded for their efforts. (I didn't mention monetarily--but we're working on that.)

Please allow me this opportunity to encourage mathematics majors to consider the challenge of a career in teaching. If we want to see a continuation of the progress this country has made toward becoming the world's most significant contributor of ideas in varied fields, we must have confident, well-educated individuals instructing our children. If you are one, the teaching profession (and a viable, local public school) needs you.

Ms. Laura Beaver (1994) was KME historian '93 and secretary '94. She presently teaches mathematics at Jackson Central-Merry High School and is president of the Jackson-Madison Co. Education Association.



Mrs. Laffoon Returns to Union

Mrs. Pat Laffoon has rejoined the department after a brief retirement. Welcome back!

Students Present Senior Seminar Projects

At the end of November, seven mathematics majors presented their senior seminar projects. These presentations are listed below:

Jeff Patterson	Baseball: A Statistical Analysis
Caroline Ellis	Mathematical Discoveries of the Bernoulli Brothers
Breanne Oldham	Check Digit Schemes and Error Detecting Codes
Matt Pigg	The Mathematics of How We See: Optometrics → Mathematics
Leigh Ann Smalley	Then and Now
Patricia Rush	Fractals
Jessica Worrell	Linear Programming

Dr. Bryan Dawson taught the senior seminar this year. Nine computer science majors presented projects in senior seminar, taught by Dr. Jan Wilms. This semester's projects were:

Barry Britt	Retirement Calculator
Tim Hughes	Drift: The Website
Renee' Jones	A Journey on a Road Never Traveled
Katie Miller	Dynamic Web Site for Annotated Research LINKS
Dwayne Pfaff	SONOCO Web Site
Philip Smith	QuizMaster: A Poll-Style Quiz Game for Classroom Use
Jonathan Teague	Beowulf Clustering
Travis Wales	Eastside Summer Camp Web Page
Amos Wood	Alpha Tau Omega Web Site



In Memory

Mr. Terry Evans, much-loved teacher and colleague, passed away on September 25. He is survived by his wife, Carolyn.

Mr. Evans was known across campus for his ebullient spirit and for a vibrant love for his friends, his students, his country, and his Lord. He will be sorely missed.

What may have been less well known about the Evans' was their commitment to be global Christians. In keeping with their dedication to the Great Commission, Mr. and Mrs. Evans requested that memorials be sent to:

North Burma Christian Mission
c/o Gary Wheat, FA
3682 N. Upward Lane
Joplin, MO 64801