

Math Musings

*The Newsletter of
the Elon Math
Department
Volume 8
June 2004*

PI MU EPSILON CHARTERED AT ELON

North Carolina Nu Chapter Installed in October 2003 Ceremony



Members from left: Richard Haworth, Whitney Lesch, Amy Oliver, Todd Lee, Karen Lawrence, Josh Rowan, Beth Sherriff, Bri Yoho, Aja Johnson, Helen Walton, Jen Davis, Alan Russell, Caleb Pike, Lisa Beuerle, Jim Beuerle, and Crista Coles

The North Carolina Nu Chapter of Pi Mu Epsilon, the nation's most prestigious mathematics honorary society, was chartered at Elon University on October 23, 2003. Dr. Robert Smith, national president of Pi Mu Epsilon, presented the charter to Provost Gerry Francis, former chair of the math department. The ceremony, followed by a banquet in McKinnon Hall, was attended by administrative officials, math faculty and honored students.

Pi Mu Epsilon was founded in 1914 at Syracuse University and was incorporated on May 25, 1914 under the laws of the State of New York. Its roots date back to a mathematics club which was founded at Syracuse in 1903. Pi Mu Epsilon's purpose is the promotion of scholarly activity in mathematics among students in academic institutions. There are currently 307 chapters at colleges and universities throughout the United States. Elon now joins the ranks of Duke, Wake Forest, NC State, UNC-Chapel Hill and other top North Carolina universities with Pi Mu Epsilon chapters.

A chapter may be chartered only in an academic institution whose standards are excellent in all liberal arts departments, particularly mathematics. In order to qualify for a chapter, the petitioning institution must show that there has been an ongoing history of student mathematical activity outside the classroom, that there are adequate facilities to support this activity, and that the faculty at the institution are fully supportive of the goals and objectives of the society.

Spearheaded by Helen Walton, the math department began the application process in January 2003. She is a member of Pi Mu Epsilon and felt that the department had achieved so much in the areas of research and academic excellence that the time was right to make the application. The application required information about the university, courses for the mathematics degree, resumes of the math faculty members, (continued on page 2)

PI MU EPSILON INSTALLED (continued from page 1)



Provost Gerry Francis accepts the charter from Dr. Robert Smith of Miami University, President of Pi Mu Epsilon.

library acquisitions, student research, participation in conferences, and technology. The application was accepted in October. The officers of the national organization particularly recognized Elon's math department for its involvement with student research.

Elon students may qualify for membership in the society by being a junior or senior in the top third of their class, having taken calculus, and having 20-31 math credit hours with a grade point average of at least 3.5 or more than 31 hours with a grade point average of at least 3.2. Eleven students and five faculty members were inducted as charter members. Additionally, five faculty members, including Skip Allis, Lisa Beuerle, Janet Mays, Ellen Mir and Helen Walton, were members by virtue of being inducted into the society at their undergraduate universities. Dr. Jim Beuerle will serve as advisor to the new chapter. More information can be found on the Pi Mu Epsilon web site at <http://www.pme-math.org/>.

MEMORIES FROM OUR ALUMNI

Dr. Haworth telling his Non-Euclidian Geometry class that parallel lines don't exist!!! He said just look at the train tracks. If you look far enough down the tracks they do meet. Those who disagree are nearsighted!! ...

Andrew Spage '91

Tutoring for Joyce Speas' self-paced math classes
.....**Martha Cindia Thomas '87**

I have fond memories of all my math classes, especially calculus..... **Bobbi Meyer Parra '85**

In Calculus I class Dr. Haworth remarked that every time he worked with calculus, he learned a new twist on it.
.....**Andrew Spage '91**

Sitting in the LRC with a whole bunch of math majors attempting to solve ONE math problem....**Martha Cindia Thomas '87**

Acing my Linear Algebra final in under an hour, much to the consternation of my classmates. You have to enjoy those few moments of triumph!....**Bobbi Meyer Parra '85**

My stomach growling every 8:00 AM class in Professor Barbee's calculus class and having him tease me about it. (Yes, I am the one. Robin Gobble wrote about me in a previous newsletter)...**Martha Cindia Thomas '87**

In logic class, Dr. Richard Haworth explained "if/then" statements using the analogy "if the moon is made of green cheese, then I would weigh 110 pounds!!" I wonder if he still thinks that we weigh 110 or if the moon is made of green cheese . **Varun Rao '93**

If my kids ever turn off the lights and lock me out of the room when I take a quick "potty break" during class, I'll...I'll...well, what did YOU do Dr. Haworth? **Jane Cooper Colson '80**

Dr. Haworth's classes...**Jennifer Goldman Pearman '93**

My husband and I not only learned critical thinking from professors like Dr. Alexander and Professor Lampier, but also learned at Elon how to be of service to others.
Mary Coolidge Ruth '66

TODD LEE IS ENGAGED

At his recent birthday party, Todd Lee surprised all the guests by proposing to Dr. Hollylynne Stohl, a math education professor at NC State University. As he made his wish and started to blow out the candles on his cake, he stopped and said "What I really want I can't get by just blowing out candles." He then got down on his knee and proposed!! Wedding plans are in progress. Todd and Hollylynne have recently purchased a home in Durham.

CLARK, ALLIS AND RUSSELL ARE PROMOTED

At the spring meeting of the Board of Trustees, Dr. Jeff Clark was promoted to the rank of Professor. Drs. Skip Allis and Alan Russell were promoted to Associate Professor and were granted tenure. The math department celebrates these outstanding achievements.



Dr. Jeff Clark



Dr. Skip Allis



Dr. Alan Russell

Dr. Jeff Clark received his bachelor's, master's and doctorate degrees from Yale University and has taught at Elon University since 1988. He served as chair of the math department from 1994 to 2000. He is currently the chair of Academic Council, the coordinating committee which formulates general policy on behalf of the faculty. The Council maintains communication with fourteen standing committees and various ad-hoc committees. Jeff feels that the most important accomplishment of Academic Council this year was to get approval for more course reassignments which will help to ease faculty workloads. Chairing the Council has involved a huge time commitment, and the math department applauds Jeff for his promotion and his leadership on the Academic Council. He also serves as the webmaster for the southeastern section of the MAA. He presented the talk, "Truth or Consequences," at the annual meeting of the southeastern section of the Mathematics Association of America in Clarksville, Tennessee on March 26. At the Joint Mathematics Meetings in Phoenix, Arizona on January 8, he gave a talk titled "Using Term Rewriting Systems in Algebra." This year he published a calculator manual to support an introductory statistics text by Prem S. Mann. The fourth edition of his book, *Business Statistics*, co-authored with Douglas Downing, was published in 2003. Jeff lives in Chapel Hill with his wife, Laura, and their two children, David (6) and Elizabeth (4). This year he celebrated his 15th wedding anniversary.

Dr. Skip Allis received his bachelor's degree from SUNY College of Arts and Sciences at Potsdam and his master's and doctorate degrees are from the University of South Carolina. Serving as the current department chair, he has been employed by Elon University since 1995. This year he served on the Curriculum Committee and Graduate Council. He also maintains the web page for the math department and has recently been elected to Academic Council. He lives in Burlington with his wife, Celeste, who teaches mathematics at Rockingham Community College.

Dr. Alan Russell can always be recognized in a crowd with his colorful trademark Hawaiian shirts. He received his bachelor's degree from Presbyterian College, his master's from the University of North Carolina at Charlotte, and his doctorate from the University of Georgia. Joining the math department in 1997, he is the coordinator of the freshman core math courses. He spearheaded the change which required statistics or calculus for the general studies math requirement. In addition, he served as chair of the General Studies Committee this year. Under his leadership, the missions and goals of the committee were rewritten and the advanced studies requirement was revamped. He is also chair of the Special Needs Committee. His article titled "Pick's Theorem: What a Lemon," appeared in the May issue of *Mathematics Teacher*. Alan, his wife, Robin, and his daughter, Michelle (6), live in northern Alamance County.

ORIGAMI COURSE IS A POPULAR ADVANCED GENERAL STUDIES ALTERNATIVE



The winter term class in origami, taught by **Dr. Alan Russell**, created 1001 golden cranes and arranged them as a stunning collage of a phoenix with outstretched wings to represent Elon University's mascot. A Japanese girl, Sadako Sasaki, who had leukemia as the result of the bombing of Hiroshima, tried to fold 1,000 cranes. Legend has it that completing this task will grant a person a long life. Although she died before she finished, her classmates finished the cranes and dedicated a peace monument in her name in Hiroshima. A second peace monument in Seattle was built to show an American commitment to peace and features Sadako with a crane in her outstretched arm. The monument was vandalized in January, and an American non-profit organization is raising money for its repair. The Phoenix created by Elon's origami class has been sent to Seattle, hopefully to raise money for the monument and to help it rise from the ashes of vandalism. The Phoenix was featured on the inside cover of the spring edition of *The Magazine of Elon*. Next year this popular course will be taught both fall and spring semesters as an upper level general studies course.

Please send us news. If you respond, we will mention you in the next newsletter. We would love to hear from you even if you have replied in previous years (Mail to Helen Walton, CB 2277, Elon NC 27244 or email her at walton@elon.edu)

Name _____ Nickname _____

Year of graduation _____

Address _____

Phone: home _____ work _____

Occupation _____

Spouse's Name _____

Spouse's occupation _____

E-mail Address _____ Internet Home Page _____

A brief summary of your memorable moments since graduation:

Children and grandchildren: (include names, ages, and anything about them)

Hobbies and activities:

Favorite memories from Elon math classes:

DEPARTMENT ADDS TWO PROFESSORS

The math department welcomes two new full-time professors. Dr. Ellen Mir replaces Bill Barbee who retired in the spring of 2003. Janet Mays has been hired to help with freshman core classes. Both have brought much enthusiasm to the department and have been actively engaged in many departmental activities.

Dr. Ellen Mir is a recent graduate of the University of Kansas, receiving her doctorate in mathematics with research related to topology. She grew up in Maryland and received her bachelor's degree from the University of Virginia and her master's degree from the University of Kansas. At Kansas, she received the Florence Black Graduate Teaching Award and the John Bunce Memorial Award. She is a member of Phi Kappa Phi and Pi Mu Epsilon Honor Societies. She was selected to participate in Project NExT (New Experiences in Teaching), a program for mathematics professors who have recently received their doctorates and are in their first or second year of teaching. As part of this program, Ellen has attended conferences this year in Phoenix and Austin, Texas. She joins Todd Lee and Crista Coles, who have also participated in this program. Ellen lives in Chapel Hill with her husband, David Woodbury, a marketing manager with John Wiley and Sons.

Janet Mays first came to Elon's campus last year as an adjunct instructor to teach a statistics class. As a result of her excellent teaching, she was hired full-time in a newly created lecturer position. She comes to Elon from teaching full-time at Guilford Technical Community College. She is a North Carolina native and completed her bachelor's and master's degrees from the University of North Carolina at Greensboro, where she was a member of Phi Beta Kappa and Pi Mu Epsilon. She is president-elect and conference coordinator for the North Carolina Mathematics Association for Two-Year Colleges. Janet lives with her husband, Charley, in Greensboro, and she has three daughters. Her daughter Charlotte attends graduate school at NC State University majoring in genetics, Emily is majoring in French at UNC-Chapel Hill, and Robin is a freshman at Virginia Tech, double majoring in material science and chemical engineering. Outside the classroom, Janet swims three times a week, plays softball, and enjoys quilting.

OTHER NEWS FROM THE FACULTY

Dr. Todd Lee's book, *Finite Mathematics: An Applied Approach*, was released in November 2003, and was introduced at the AMS/MAA joint meeting in January 2004. The book covers the traditional topics of finite mathematics, including sections in linear modeling, linear programming, logic/sets, probability, statistics, personal finance and game theory with an emphasis on spreadsheet technology. Todd presented a talk with Crista Coles titled "Gotta Catch Them All: What does it cost?" at the MAA Sectional meeting in Clarksville Tennessee in March. He serves as director of the Elon College Fellows in the math and science areas. He traveled with 20 fellows to Washington D. C. in January to explore questions involving the liberal arts. He will be featured in the "Delving Deeper" column of the September edition of *Mathematics Teacher*. His topic is "Three Dimensional Conic Sections."

Janice Richardson is past-president of the central region of the North Carolina Council of Teachers of Mathematics and is director of the Teaching Fellows program at Elon. There are 90 Teaching Fellows at Elon, including 12 math majors. She traveled to the Washington Center in January with the Teaching Fellows, who were studying the interplay between government and education. She went to London in March to visit the sophomore Teaching Fellows.

Lisa Beuerle is the faculty advisor to Hillel, the campus organization for students of the Jewish faith. Hillel won an award as the organization of the year with under 30 students. She is working with Janice Richardson to examine the content of the math education course required for elementary teachers. Lisa has also reviewed two textbooks this year.

Dr. Jim Beuerle was elected by the freshman class to be a member of FANS, "Faculty Assisting New Students." He helped greet arriving freshman at the Jordan Center. He was on the Barry Goldwater Scholarship selection committee. He taught the mathematics class to prospective fellows on Fellows Day in the spring.

Helen Walton spent much of last year working with the Dean of the College of Arts and Sciences to prepare an application for a Phi Beta Kappa chapter at Elon. She serves as chairman of the local Historic Preservation Commission and is on the Board of Directors of Preservation North Carolina and the county's Textile Heritage Museum. (continued on page 6)

OTHER NEWS FROM FACULTY (continued from page 5)

Dr. Crista Coles wrote an article for *Computers and Mathematics with Applications* titled "Parameter Identification Using Mollification for Predator Prey Models in Spatially Heterogeneous Environments." At Mathfest in Boulder, Colorado last July, she presented "If you Accept them, Will They Come?: Predicting the size of the incoming freshman class." With Dr. Todd Lee, she gave a similar talk titled "Gotta Catch 'Em All: What does it cost?" at the southeastern section meeting of MAA in Clarksville, Tennessee in March.

Dr. Richard Haworth is on the Board of Directors and the Executive Committee of NCCTM. He also serves as the Convention Services Manager of NCCTM. He has

been involved with the State Math Contest for 26 years and now serves on the North Carolina Math Contest Committee and the Executive Committee. This year he has been involved with several Academic Council subcommittees that worked on defining and clarifying the criteria on which faculty are evaluated for promotion and tenure.

Dr. David Nawrocki, a former member of the Elon math faculty, writes that he is serving as acting department chair for the actual chair who is on leave of absence. He is also serving as chair of the school's academic council. Dave is teaching mathematics at Albright College in Reading, Pennsylvania.

STUDENT HAPPENINGS

The following students presented at the Student Undergraduate Research Forum under the guidance of Todd Lee and Crista Coles at Elon in April:

Aja Johnson '05 - "When to Spin"

Karen Lawrence '04 and **Amy Oliver '04** - "Methods of Approximation"

Karen Lawrence '04 - "Survival of the Smartest: The Standard Josephus Problem and Its Variations"

Amy Oliver '04 - "Ranking Sports Teams Using Infinite Series of Matrices"

Kristin Yanulites '04 - "Determining Steady State Wealth Distributions"

These students also presented these talks at various conferences. **Aja Johnson**, **Karen Lawrence**, **Kristin Souther '07**, and **Patrick Davis '07** attended the MAA dinner at Furman University in March. The next day Aja and Karen presented at the Undergraduate Research Conference in Mathematics at Furman. **Aja Johnson**, **Karen Lawrence**, and **Amy Oliver** gave talks at the Southeastern Sectional MAA meeting in Clarksville, Tennessee in March. **Aja Johnson**, **Karen Lawrence** and **Amy Oliver** also presented at the Nebraska Conference for Undergraduate Women in February. **Kristin Yanulites** gave her senior research talk at an economics conference.

The following students will attend graduate school next year:

Amy Oliver – NC State University

Karen Lawrence – Texas Tech University

Kristin Yanulites – University of Georgia

Beth Sherriff '04 was selected as the Outstanding Mathematics Education Student for the central region of the North Carolina Council of Teachers of Mathematics. She is the ninth Elon student to win the award since its inception in 1986. She was in competition for the award with students from larger universities such as UNC-Chapel Hill, UNC-Greensboro, and NC A&T University.

Cheryl Borden '05 has been elected executive secretary of the Student Government Association for 2004-2005.

Aja Johnson will attend the University of Illinois Urbana-Champaign this summer to study Geometric Group Theory under the direction of Dr. Kim Whittlesey.

Aja Johnson received the academic award from the math department this spring. **Amy Oliver** received the research award and **Karen Lawrence** received the service award from the department.

NEWS FROM THE ALUMNI

Kate Mansi '00 married John Merrill (physics '03) on July 19, 2003, and they live in Albuquerque, New Mexico. She received her master's degree at NC State University in June 2003. She now teaches math and science for YouthBuild, a national non-profit organization for at-risk youth who are trying to obtain their GEDs. She writes that she loves her job even though most of her students have served time or are on probation and fighting drug problems.

Erin Krupa '02 graduated from Wake Forest University with a master's degree in mathematics. She is interviewing for teaching jobs in North Carolina.

Andre Spage '91 lives in Fairfax Station Virginia with his wife, Laura, and two children, Olivia (8) and Wyatt (4). In 1997 he received a master's degree in operations research and management science from George Mason University. He is Sales Operation Manager for Computer Sciences Corporation.

Scott O'Brien '03 is a software developer for Summit Systems, a financial software company on Wall Street. He is also a graduate student at Pace University in lower Manhattan.

Carl Taylor '99 received his master's degree in secondary mathematics education in 2003. He is currently teaching math at East Henderson High School in East Flat Rock, North Carolina. In February 2004, his wife gave birth to their 12-pound, 4-ounce son.

Varon Rao '93 is Marketing Director for ArvinMeritor Inc, a Fortune 500 company in Michigan. He has been involved with community quiz bowl activities; he formulates questions for the participants which are mathematically based.

Stephanie Closs '00 teaches Algebra I and Algebra II/Trig at Atlee High School in Mechanicsville, Virginia. She was nominated by two students to be listed in "Who's Who Among American Teachers." She is the color guard coach and assistant varsity softball coach. She is engaged to be married in June to Ryan Robertson of Richmond, Virginia.

Ruth Brown '03 announces the birth of her son, Smith Anderson Brown, on January 8, 2004. She continues to work with the Navy in San Diego, writing software in Java. She hopes to move back to the east coast to be closer to family.

Jennifer Goldman Pearman '93 was married to William Pearman in 1992 and worked at MCI computer science division in Colorado Springs. She has three daughters, Leah (6), Adeline (5) and Mirjam (2 1/2). She now lives in West Point, New York where her husband teaches at the United States Military Academy.

Cindy Booth Elliot '92 is the Library Business Office Manager at Longwood University in Farmville, Virginia.

Jessica Munley '03 received the CAPE award from NCTM in 2004 which enabled her to attend the annual NCTM

conference in Philadelphia. She received her master's degree from Wake Forest University this spring.

Andrew Bare '92 worked for Nortel for three years after graduation. For the past nine years he has been at home full time with his six children. His family has a small farm near Cincinnati, Ohio where they raise their own cattle. He has enjoyed the opportunity to home school his children. The oldest child will be a freshman in high school next year taking Honors Chemistry and Algebra II with Trig. The youngest is eight months old. He has been doing some web site design for non-profit groups.

Jane Cooper Colsen '80 lives in Harrisburg, North Carolina and is home schooling her three children who are 11, 8, and 6. Her children are involved in scouting, music, art and gymnastics.

Martha Cindia Thomas '87 taught math in Charlotte after she graduated from Elon. She worked as a flight attendant and then went back to teaching. In 1999 she met her future husband on a cruise. She married Rick Brown, a food broker, in 2000 and now is a substitute at Vance High School in Charlotte.

Bobbi Meyer Parra '85 lives in Gaithersburg, Maryland and is a Senior Account Manager for Celera Genomics. She married Paul Parra '87, and they have three children, Amanda (15), Hannah (12) and Michael (7). All seem to like math and have done well in it so far.

Rose Cordero '01 graduated from law school this spring at UNC-CH. She will work for Kenyon and Kenyon, a law firm in Manhattan specializing in intellectual property law.

Mary Coolidge Ruth '66 and her husband, Bill, are serving as full-time volunteers in the national Partners in Service mission program of the United Church of Christ. They have completed nearly two years in Albuquerque, New Mexico at Menaul School and have now accepted their next assignment in Blowing Rock, North Carolina.

Ronald Earp '56 operates his own company, Spectro, LLC, after working for 40 years for companies associated with AT&T and Lucent Technologies. While at Bell Laboratories he designed Remote Controlled Submarine systems such as the SCARAB (Submarine Craft Assisting Repair and Burial) family of vehicles. He holds several patents involving either analog or digital signal processing. He writes that it is very satisfying to mathematically model a sonar system, convert the model to hardware and software, integrate it into a remotely controlled submarine, then into a ship's system, take it out to sea, place it 1.5 miles down on the ocean floor and find that it works just like the mathematics indicated it would.

Pat DosSantos '89 lives in Brasilia, capital of Brazil. She owns a company which represents Retail Pro, an American retail software product.

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To find out the latest information about the math department, to see our photos, and to get our email addresses and phone numbers, check our web site at <http://www.elon.edu/academics/math/default.asp>.

THANKS SO MUCH FOR YOUR RESPONSES. Please continue to correspond with us by using the enclosed form. This newsletter is not possible without news from you. Even if you have replied previously, write again or send us e-mail to the addresses listed below. We love hearing from you. We continue to circulate your responses to the math faculty and our retired faculty.

This newsletter is a joint production of the mathematics department and the Office of Alumni Relations.

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