

MathMusings

*The Newsletter of
the Elon Math
Department
Volume 13
June 2009*

INTRODUCING THREE NEW MATH FACULTY

Three new faces joined the math department last fall as assistant tenure-track professors. **Karen Yokley** succeeded Richard Haworth, who retired last year. **Laura Taylor** and **Kirsten Doehler** have joined our growing statistics program.



Karen Yokley hails from Columbia, Tenn. She completed her bachelor's degree in mathematics at the University of Tennessee. She then moved to North Carolina and received her master's degree in applied mathematics and her doctorate in computational mathematics, both from North Carolina State University. She worked as a post-doctoral fellow in toxicology at the University of North Carolina at Chapel Hill. She is married to a mathematician who recently finished his doctorate and will start a tenure-track position at North Carolina A&T University in Greensboro this fall. Karen's specialty is applied mathematics. She explains that "applied math" takes problems from other disciplines and uses math to figure out solutions, especially using differential equations. She is planning a new course for the department titled "Mathematical Modeling and Methods of Application." Karen believes that this new course will appeal to other science majors and possibly business or economics majors. Karen recently gave a talk at the

American Mathematical Society meeting in Raleigh titled "Establishing Metabolic Changes in the Rat During Exposures of Carbon Tetrachloride and Trichloroethylene Through the Use of Physiologically-based Pharmacokinetic (pbpk) Modeling." She would like to explore mathematical art.



Kirsten (Kirstie) Doehler is a native of Webster, N.Y. She graduated from the State University of New York College at Geneseo, where she was a member of the cross country and track teams. She earned her master's and doctorate degrees in statistics at North Carolina State University. She was an assistant professor at the University of North Carolina at Greensboro for several years but was attracted to Elon because of its more student-centered environment. Her academic interests include biostatistics, survival analysis, nonparametric statistics, and statistics education. Last September, she presented at the N.C. Council of Teachers of Mathematics State Conference in Greensboro on "The Moose Problem - 2008 AP Statistics Exam Form A # 5." Kirstie was married on August 9, 2008. Her husband has recently finished student-teaching in biology at Grimsley High School. She enjoys raising foster puppies with a pet rescue program in Greensboro. She takes two puppies at a time and nurtures them until they are eight to ten weeks old, at which time they are adopted.

Outside of her professional interests, Kirstie enjoys running, reading, traveling, and spending time with family and friends.



Laura Taylor comes to Elon from Lexington (a suburb of Columbia), S.C. She received her bachelor's and master's degrees in mathematics from Winthrop University. Last year, she received a Ph.D. in statistics from the University of South Carolina. Laura says that she was attracted to Elon because it had the feel of Winthrop. Elon was her first choice and her first offer. She said that Elon is the perfect place for her - a smaller, private school close to family and friends. Laura lives in Graham with her dog, Sparky. She is a movie buff and especially likes the Star Wars trilogy. She is developing a new statistics course to be taught in the fall called "Survey Sampling Methods." Both Laura and Kirstie will assist Ayesha Delpish in the implementation of the statistics minor and the development of a statistics major.

MATH MEMORIES FROM OUR ALUMNI

One class that sticks out in my mind was differential equations. I have been thinking a lot about that class during my studies at Rollins. We have recently been talking about survival analysis, and it brought back fond memories of our fish farm presentation and the faulty kite that I won in class**Laura Sinden '08**

Dr. Haworth used clips from *Monty Python and the Holy Grail* in mathematical reasoning class to illustrate deductive reasoning. The one long weekend in February each year we spent working on the COMAP competitions was one of my favorite challenges. Analysis was so early in the morning, even for Dr. Lee, that we would peer out the window from third floor of Duke and watch him run from the parking lot to get to class. We were all amused in Calculus III when Dr. Nawrocki would talk to his chalk, and we were impressed at the ease with which he drew lovely 3-D figures on the 2-D chalkboard. I worked on my abstract algebra homework right outside Dr. Allis' office before the 8 a.m. class, and, when he arrived, he would always check to see how I was doing and answer my questions. Dr. Clark's LaTeX/mathematical writing class during winter term helped get me through my graduate school work years later! I loved learning about the Flat Earth Society and reading *Flatland* in modern geometry class.....**Ashley Trent McHale '01**

I have fond (and stressful) memories of all my math professors! Dr. Allis tried to make us think we knew the answer, even when we didn't! Dr. Clark was the type of smart that we could never hope to attain ourselves, but he somehow never made me feel stupid, even when I was ready to throw in the towel. Dr. Lee saw Allyson Randolph and me on the verge of tears more times than I can count, so I don't know how in the world he always managed to make us laugh! Dr. Russell saw me through my senior project, and I can honestly say that his guidance set the course of my career. Of the many teachers that have impacted my life, I think the greatest influences have come from Dr. Russell, Dr. Lee, and Dr. Lee's wife, Hollylynn. It is so true that one amazing teacher can make a difference that lasts a lifetime. Thank you for your tireless energy and dedication! Your students remain ever grateful!.....**Kate Mansi Merrill '00**

Todd Lee telling us about the superhero Epsilon Man during our Tues/Thurs 8:00 AM Analysis course..**Nick Harrison '02**

CHECK US OUT...



Front row: Crista Arangala, Jan Mays, Kirstie Doehler, Skip Allis
 Center row: Helen Walton, Ayesha Delpish, Bernice Foust, Laura Taylor, Jeff Clark
 Back row: Jim Beuerle, Lisa Beuerle, Alan Russell, Karen Yokley, Janice Richardson, Todd Lee

TWO MATH MAJORS PASS ACTUARIAL EXAMS

Seniors **Rachel Scott** and **Nick Walton** are the first two Elon students who have passed a set of examinations prescribed by the Society of Actuaries (SOA). An actuary is a business professional who deals with the financial impact of risk and uncertainty. Actuaries have a deep understanding of financial security systems and use mathematics to analyze how they work. Actuaries evaluate the likelihood of events in order to minimize losses associated with uncertain, undesirable events. Actuary was recently included as one of the Best Careers of 2007 in *U.S. News and World Report*. Actuary has also been rated the second best job in the United States by the *Jobs Rated Almanac* (Sixth Edition, 2002), which lists the actuarial profession above other highly regarded careers such as accountant or attorney. Only biologist rated higher.

The material for the first actuarial exam is covered in Math 341. Examinations are held twice each year in the spring and fall at various cities in the United States, Canada, and other countries around the world. Many prospective actuaries begin taking exams while in college with the aid of self-study courses jointly offered by the SOA, but most achieve the rank of associateship in three to five years. After achieving associateship status, and usually after gaining a few years of work experience, most actuaries complete the fellowship exams. Both associate-level and fellowship-level exams are difficult, and becoming an actuary requires a huge amount of study and preparation. Congratulations to Rachel and Nick!

OTHER NEWS FROM OUR STUDENTS

The math department is proud of its 74 declared math majors and its 20 graduating seniors.

Jessica Stewart and **Colleen McCarthy** presented posters at the Joint Mathematics meetings in Washington, D.C., in January. Both students also presented at the National Conference for Undergraduate Research in Minnesota. Jessica's talk was titled "Traditional and Digraph Iterated Function Systems for Variations of Peano's Space-Filling Curve." Colleen talked about "Mathematical Properties of Jai Alai."

Two students, **Kyle Schutt** and **Jessica Stewart**, gave talks in March at the Southeastern Section of the Mathematics Association of American at Belmont University in Nashville. Kyle's talk was titled "Combinatorial Identities through Graphical Representations."

In addition to the previously listed talks, four students, **Amanda Brown**, **Jessica Stewart**, **Jaime Speiser**, and **Kyle Schutt**, presented at the Student Undergraduate Research Forum at Elon, and **Colleen McCarthy** presented a poster. **Amanda Brown** talked about "Understanding the Relationship between National Healthcare and Malaria in Ghana." This talk was part of the research related to her Lumen Prize scholarship. During winter term, Amanda traveled to South Africa and met with representatives at the National Malaria Institute. She has been offered an REU with the FBI to work in public health in Houston for the summer. Jaime's talk was titled "Applying an M/M/I Queuing Model to Airport Runway Data."

Cindy Goodson attended the National Meeting for the National Council for Teachers of Mathematics. Undergraduates rarely have the opportunity to attend this conference.

In May, three students were recognized in an award ceremony hosted by Elon College, the College of Arts and Sciences. **Colleen McCarthy** received an award for her academic achievement in mathematics, **Jessica Stewart** received the mathematics research award, and **Philip St. Clair** received the service award from the department.

The following seniors will attend graduate school next year:

- **Kayla Corkery** – Appalachian State University
- **Abby Lauer** – University of South Carolina (master's program in statistics)
- **Colleen McCarthy** – N.C. State University
- **Jessica Stewart** – Baylor University

NEWS FROM THE ALUMNI

Bobby R. Goodman '60 has a graduate degree from Virginia Tech (1970) in mathematics education. He retired from teaching math in the Roanoke City School System in 1994 after 32 years of teaching. His last ten years of teaching were at the Roanoke Valley Governor's School for Science and Technology. His mathematical area of interest is in number theory, and he would be interested in corresponding with others who share that interest.

Jimmy Green '86 has served as the pastor of Union Presbyterian Church in Salters, S.C., for 5 ½ years. He is married to Barbara Howell Green, who graduated from Elon in 1989. They have two children: Ben, who will be 8 years old at the end of May, and Lily Noele, who is 14 months old. In 2001, Jimmy received a Master of Divinity degree from Covenant Theological Seminary in St. Louis, Mo., in preparation for the pastoral ministry.

Darrell Snead '88 works as the plant controller for Bassett Furniture in Bassett, Va. He married Trina Forbes Snead in 1988. They have two children: Courtney (Elon '10) and Lauren, a junior in high school.

Julia Morris Buffington '91 has been a math teacher at Graham High School for five years, and currently teaches geometry honors and precalculus honors. She also works with her husband, Scot Buffington, in the family business, Evans Custom Amplifiers. The amplifiers are used for guitar, steel guitar, keyboard, jazz bass, and fiddle.

Liese Bouknight Faircloth '93 had an addition to her family in July 2008. Emma Grace Faircloth weighed 9 pounds, 11 ounces, and was 21 inches long.

Crystal Reynolds Croyle '95 gave birth to a baby boy, David Allen, on March 17, 2009. He joins brother Nathan, who is now 28 months old. Her husband, Jerry, is a deputy with the Rowan County Sheriff's Department in Salisbury, N.C. They live in Salisbury, and Crystal is enjoying staying home with the children.

Dana Redmon Watson '96 has completed her 13th year teaching math at East Forsyth High School. Her daughter, Sydney, began kindergarten this year. Her twin boys, Weston and Mason, turned two years old in November 2008. Dana and her family live in Belews Creek, N.C.

Diane K. Fry '99 graduated from Syracuse University College of Law with her J.D. in 2002 (cum laude). With her math background, she was immediately exposed to the field of intellectual property in law school. She was in private practice in New York City and Washington, D.C.,

before moving back to North Carolina. She currently works as in-house trademark counsel for GlaxoSmithKline in Research Triangle Park. She has always found positions where she could practice in the trademark and copyright area. This is an area of the law that she finds both challenging and exciting. She just bought a house in downtown Raleigh.

Lyndsey Jessup Haywood '99 is teaching Algebra I, Algebra II, and AP Calculus at East Surry High School. She was recently named Surry County Schools Teacher of the Year.

Holly Weeks McDow '99 and **Thomas McDow '99** welcomed a son, David Brantley, to their family. He was born on Sept. 11, 2008.

Kate Mansi Merrill '00 completed her Master of Science degree in mathematics education in 2003 from North Carolina State University and her post-master's education specialist degree in educational leadership in August 2007 from The George Washington University. Her husband, Jonathan, is a 2001 Elon graduate. Their only "child" is a very spoiled dog named Doppler. Kate has been working as a Curriculum Specialist in Elizabeth City, N.C., for three years. Prior to that, she worked for YouthBuild Albuquerque, a program for high school drop-outs, which was turned into a charter school. This summer, Kate and her husband are moving to Los Angeles.

Ashley Trent McHale '01 is completing her first year in a tenure-track faculty teaching position at Las Positas College in Livermore, Calif. She is teaching a variety of classes, from pre-algebra to linear algebra and statistics. She and her husband are celebrating the first year in their house and have enjoyed the luxuries (and frustrations) of home ownership. She is also working as the volunteer coordinator for a non-profit organization, Asante Africa Foundation, which works to improve education for children living in east Africa.

Jessica Pollard Jones '01 is the research and evaluation director for the Down East Partnership for Children, a non-profit organization, located in Rocky Mount, N.C., which serves children ages 0-8 and their families. Jessica and her husband welcomed their second child, Zack Tyler, in September 2008. Their daughter, Lexi, is now 4 years old.

Leanna Briles Giles '02 is employed by The Elon School as a mathematics teacher and yearbook advisor. She gave birth to her first child, Mary Chandler Giles, on Feb. 25, 2008.

MORE ALUMNI NEWS

Nick Harrison '02 started working for Raytheon, in Woburn, MA, after receiving his master's in math from Penn State in 2006. He has done software development and verification, and he currently works in system integration. He is exploring New England, going to shows, and trying to get into kayaking.

Jeanette Olli '03 graduated in May with a Ph.D. in mathematics from the University of North Carolina at Chapel Hill. Beginning this fall, she will be an assistant professor at Dominican University in River Forest, Ill.

Jenny Hornback Weakland '03 completed her National Boards in teaching this year.

Adam Benjamin, '04 recently completed a professional certificate program at Wentworth Institute of Technology in Boston titled "Professional Land Surveying Certificate." The program satisfies a portion of the educational requirements necessary to become a registered land surveyor. He will attend graduate school this fall and is waiting to hear about funding from the schools before choosing his destination.

Josh Rowan '04 is still teaching math at Collins Hill High School in Gwinnett County, Ga. He finished his masters degree at Georgia State University in 2007, and he will earn a specialist degree in school administration and supervision at Lincoln Memorial University in Tennessee in July. In April, Josh and his wife had their second child, a boy, weighing seven pounds, two ounces. Family pictures and updates are posted at www.knowintherowans.blogspot.com. Josh recommends the book, *Unknown Quantity: A Real and Imaginary History of Algebra* by John Derbyshire, for all new math majors. The book is written from a

historical perspective and helps to show the "big picture" in mathematics.

Cara McAllister Ashby '04 teaches Algebra I and Geometry at Mount Pleasant High School in Mount Pleasant, N.C. She and her husband, Steve, are renovating their home, which was built in 1853.

Kristin Mandella '07 became an operations research analyst for the Naval Center for Cost Analysis (NCCA) in the Washington, D.C., area in April.

Joanna Zanetto '07 is currently finishing her graduate degree in the master of accountancy program at the University of North Carolina at Charlotte and will start studying for the CPA exam soon after. She has signed a contract to start working in September in the Charlotte office of Deloitte as a staff accountant in their audit department.

Maria Fedore '08 is currently living in Houston and working for Teach For America. She is teaching high school math in Alief ISD, including a remedial math course for 9th-12th graders. She is almost finished with her first year of a two-year commitment to the organization. Then, she is planning to attend graduate school for secondary math education.

Laura Sinden '08 is finishing her first year of graduate school at Rollins School of Public Health (Emory University) in Atlanta, where she has been working on her MPH in Epidemiology. She has also been working for CARE. She will be employed with CDC's Viral and Rickettsial Disease Division for the summer and the next year. She will be doing surveillance and using epidemiological data on zoonotic and prion diseases, along with examining data from the Indian Health Survey to look at health disparities.

NEED E-MAIL ADDRESSES

Each spring we contact all Elon math alumni by e-mail to seek news for this publication. However, we have the e-mail addresses of only half of the Elon math graduates. Please send us your e-mail address so you can be a part of our network. Send it (and any news) to Helen Walton in the math department at walton@elon.edu.

SUMMER OFFICE MOVES

In response to our growing department and the need for new offices, several math faculty members will move to Long Building, which houses the Department of Psychology. **Todd Lee, Ellen Mir, Crista Coles Arangala,** and **Jim Beuerle** will move to the second floor of Long. **Janice Richardson** will move to a new office in Mooney. All other math faculty, along with **Bernice Foust**, our program assistant, will remain on the second floor of Duke.

NEWS FROM THE FACULTY

Jeff Clark, Department Chair, also serves as chair of the curriculum committee. He gave a talk at the Joint Mathematical Meetings in January titled "Writing in Undergraduate Research." In March at the Southeastern Conference of the Mathematical Association of America, he talked about "Scaling Graphs with Curves." The fourth edition of *E-Z Statistics* by Jeff Clark and Doug Downing was published in April. Jeff went to a workshop for math chairs in the MAA offices in Washington, D.C., last summer.



Ellen Mir has a new member of her family. Stella was born on July 8, 2008, weighing eight pounds. She is now pulling up and standing. Ellen's husband, David, is getting a master's degree in information science from the University of North Carolina at Chapel Hill. He has a two-year fellowship at North Carolina State University as a librarian. Ellen presented a talk at the

Joint Meetings in Mathematics titled "Incorporating Mathematics into a Study Abroad Program."

Crista Coles Arangala leads the class of 2011 Periclean scholars. There are 33 students in the class from many different majors. These scholars are fundraising for a service project in Sri Lanka. The funding will provide an environmental education program at a school near a rain forest. The students hope to travel to Sri Lanka during Winter Term 2011 if the travel warning is lifted at that time. Crista also taught a winter term course in India in 2009. She and 22 students made a traveling science museum with nine exhibitions, which were shown to 3000 Indian children. The exhibits were donated to the Center for Science and Society in India. Elon students were able to see Tea County, go to the beaches, and ride elephants. Crista's children are now six and four years old. Emil is in kindergarten.

Ayesha Delpish and her husband bought a new townhome in Brightwood Farms, west of Elon. She continues to serve as advisor to students in the International Pavilion until this summer. She serves on the Graduate Council and the Physician's Assistant Feasibility Committee. She wrote a chapter in a book titled *Sustaining Student Voices in the Scholarship of Teaching and Learning*, which will be published this fall. Her chapter focuses on equalizing voices with student and faculty partnership in

course design. She also completed her term as an Elon Teaching and Learning Partnership scholar, where she worked with teachers from the local school system.

Skip Allis serves on the governance task force formed by Academic Council. He is chair of the math curriculum committee. He is taking one class each semester at the University of North Carolina at Greensboro to work toward his doctorate in higher education. He is beginning a research program on developmental education in community colleges. His wife, Celeste, is dean of the school of math and science at Rockingham Community College. They share their home with eleven cats.

Lisa Beuerle is the first year math core coordinator. She provides texts and materials to those teaching Math 112 and 116 and gives assistance to the adjuncts teaching those



classes. She also plans professional enrichment opportunities for the department. **Jim Beuerle** serves on Academic Council as the math/science representative. He is also chair of the North Carolina State Math Contest and the webmaster for The Southeast Section of MAA. This summer Jim and Lisa will grade

Advanced Placement Statistics exams in Louisville, Ky. Their children attend the Burlington Day School. Lauren is in the first grade and Rachel is in the preschool program.

Helen Walton continues her work on the Phi Beta Kappa initiative. She prepared an update to all the submitted data in January 2009 and has submitted periodic reports throughout the spring. She will continue to update information until the final vote at the PBK Triennial Convention in October 2009. She also served on a Lumen Prize interview team. She is chair of the Burlington Historic Preservation Commission and is on the board of the Alamance County Textile Heritage Museum.

PROFESSOR JAN MAYS IS PROMOTED



Professor Jan Mays was recently promoted to the position of senior lecturer. She came to Elon's campus in 2002 as an adjunct instructor to teach a statistics class and was hired full-time in the lecturer position in 2003. She previously taught at Guilford Technical Community College. A North Carolina native, she completed her bachelor's and master's degrees from the University of North Carolina at Greensboro. She recently served as president and conference coordinator for the North Carolina Mathematics Association for Two-Year Colleges. She is currently chair of the Student Life Committee at Elon. As an outgrowth of her 20-year interest in quilting, she teaches a popular general studies course each winter term called "Geometry and Culture through Quilting." Jan lives with her husband, Charley, in Greensboro, and she has three grown daughters. Her daughter Charlotte is

married and works in Raleigh. Emily received an MAT degree in French education from the University of North Carolina at Chapel Hill and plans to teach elementary school. Robin graduated from Virginia Tech with a degree in chemical engineering and will start in the Ph.D. program in chemical engineering at N.C. State University this fall.

MORE NEWS FROM THE FACULTY

Alan Russell is a scholar for the Center for Teaching and Learning. He is doing research with Amanda Ketner, a sophomore math major, on how students learn and understand standard deviation in statistics. He has received a research grant and two course releases. He became interested in the subject after attending the U.S. Conference on Teaching Statistics (USCOTS), where educators discussed how to improve learning. He has finished the basic research and has found that most novices have almost identical notions of variation. The research has now begun to focus on the differences between experts and novices. He will present his preliminary findings and his experience in using undergraduates in research at USCOTS in June. Alan serves on the General Studies Council at Elon. His daughter, Michelle, is finishing the fifth grade.

Janice Richardson has been the director of the Teaching Fellows program at Elon since 2002. She will step down from this position in June, but she will still have an office in Mooney where she will teach many of the math education classes. This summer, she will teach a math course in the M.Ed. program and plans to travel to Peru. Her daughter, Bonnie, works for Deloitte and Touche in Denver. Her son, Paul, works for Rich and Thompson Funeral Home in Burlington.

Todd Lee announced the arrival of a baby boy on Christmas Eve. Jonah Tycho Lee weighed ten pounds and six ounces, and was 22 inches long. His daughter, Delta, is three years old. Todd and his wife, Hollylynne,

have double sabbaticals next spring to do research on student learning of probability. They have submitted a proposal for a National Science Foundation Grant to do this research. Todd continues to serve as the Math and Science Area Director for the Elon College Fellows. He traveled to Washington, D.C., during winter term with the Fellows. In February, Todd, two North Carolina State University professors and three graduate students gave their presentations at a Research in Undergraduate Mathematics Education conference on inquiry-based learning from data collected in Todd's differential equations class. Todd and **Karen Yokley** gave a presentation at Elon's Student Undergraduate Research Forum on "An Agent-Based Approach to Modeling Malaria Infection."



NEW FACULTY MEMBER NEXT FALL

In response to the growing popularity of statistics and the planning for a new statistics major, Dr. Erdenebaatar Chandraa has been hired as a lecturer in statistics starting in the fall. A native of Mongolia, he comes to Elon after receiving his Ph.D. in statistics from Colorado State University. There will be more information about Dr. Chadraa in next year's newsletter.

Math Department
2277 Campus Box
Elon, NC 27244

Non Profit Organization
U. S. Postage
PAID
Permit No. 1
Elon, NC 27244

CHECK OUT OUR WEB PAGE

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

THANKS SO MUCH FOR YOUR RESPONSES. Please continue to send your news to Helen Walton at her mailing address or email address listed below. This newsletter is not possible without you. Even if you have replied previously, please write again. We continue to circulate your responses to the math faculty and our retired faculty.

This newsletter is a production of the mathematics department at Elon University.

Helen Walton
Newsletter Editor
CB 2320
Elon, NC 27244
Telephone 336-278-6242
walton@elon.edu

Department of Mathematics
Jeff Clark, Chair
CB 2320
Elon, NC 27244
Telephone 336-278-6248
clarkj@elon.edu