

# A SLICE OF $\pi$

Official Newsletter of the Department of Mathematics and Statistics

## Notes from the Chair and Associate Chair



Dr. Jim Beuerle, Chair Department of Mathematics and Statistics

As I reflect on my second year as Chair, I am filled with excitement and gratitude for the progress we have made as a department. This year has brought significant updates to our Math and Statistics majors, including thoughtful revisions to the curricula and the introduction of a new problem-solving group designed to enhance student engagement and academic exploration. Networking continues to be a vital component of our students' success, and I encourage everyone to take full advantage of these opportunities. It is always exciting to hear from our alumni and learn about their experiences beyond Elon, and I look forward to continuing to strengthen these connections. As we prepare for the spring semester, I am eager to see the continued growth of our programs and the achievements of our students and faculty.

Jim



Dr. Kirstie Doehler, Associate Chair Mathematics and Statistics

I am thrilled to be in my new role as Associate Chair of the Mathematics and Statistics Department. During college I studied to become a high school math teacher, and I also considered a career as an actuary after completing several internships at insurance companies. However, after attending graduate school in statistics, I decided to pursue a career as a college professor. I have been with Elon University for nearly 17 years, holding roles such as the Statistics Program Coordinator and Elon's First-Year Core Mathematics and Statistics Coordinator.

As Associate Chair, one of my primary goals is to increase the number of majors and minors in our department. Mathematics, statistics, and data analytics are important and exciting fields which provide a wide range of career opportunities across diverse industries including medicine, healthcare, ecology, politics, business, finance, sports, and many more!

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*Dr. Hwayeon Ryu promoted to Associate Professor with tenure*  
*Dr. Mark Weaver promoted to Associate Professor with tenure*  
*Dr. Brittany Riggs given Continuance in a Lecture Track*



Dr. Hwayeon Ryu

Dr. Ryu joined Elon University in 2019. She received both her M.A. and Ph.D in mathematics from Duke University. Dr. Ryu's research interests are focused on mathematical modeling and analysis of dynamic systems arising from other disciplines, like system biology, neuroscience, immunology, epidemiology, or sociology. She has a great passion for the development of bridge curriculum and programs between mathematics and biology



Dr. Mark Weaver

Dr. Weaver joined Elon University in 2018. He received his Ph.D in Biostatistics at the University of North Carolina at Chapel Hill. His main areas of statistical interest include statistical consulting, analysis of longitudinal and time-to-event data, and design, analysis, and interpretation of individually -and cluster-randomized trials. In his spare time, Dr. Weaver sits in with a collegiate band.



Dr. Brittany Riggs

Dr. Riggs joined Elon University in 2020 as a Lecturer. She received her Ph.D in Pure Math at North Carolina State University. Dr. Riggs sits on the Elon Core Curriculum Council and teaches a core class entitled "Rebel Women in Mathematics".





## **Dr. Emily Elrod elected as president-elect for the North Carolina Council of Teachers of Mathematics**

In a statewide election, Dr. Emily Elrod, lecturer in mathematics and statistics, was elected as president-elect for the North Carolina Council of Teachers in Mathematics. Her term as president-elect began in the spring and she will take over as president in 2025.

The NCCTM is a statewide and regional leader in mathematics education, serving as a primary resource for information about and for guidance ensuring effective mathematics education for all students.

Dr. Elrod brings her years of experience to help lead the state. She currently teaches mathematics courses for Elon as well as courses to support perspective teachers. She spent seven years in the North Carolina public school system, five as a high school mathematics teacher and two years as a curriculum specialist.

Her experiences as the NCCM President helps increase ties and public service to the surrounding communities in North Carolina and Elon.



Dr. Emily Elrod

## **Dr. Hwayeon Ryu recognized for exceptional teaching by Mathematical Association of America**



Dr. Hwayeon Ryu

Dr. Ryu, Assistant Professor of Mathematics was recognized for excellence in teaching by the Southern Section of the Mathematical Association of America. She won the section's 2024 Award for Distinguished Teaching by a Beginner College Mathematics Faculty Member. The annual award recognizes early career teachers whose success and effectiveness in teaching undergraduate mathematics exceeds the bounds of classroom teaching.

The award committee chair stated "Her passion for teaching, commitment to enhancing educational experiences, and active mentorship, which educates outside the classroom, make her an exemplary educator."

Dr. Ryu has mentored thirteen Elon students in undergraduate research projects, and her passion showed up with her team of undergraduate researchers who were recognized for excellence at the 2024 Mathematical Association of America conference over the summer. With team members hailing from five different countries, their collaboration showcased the power of global perspectives in solving complex problems.

# Dr. Nancy Scherich's work recognized in "Notices of the American Mathematical Society"



Dr. Nancy Scherich, Assistant Professor of Mathematics, was invited to write an article for the "Notices of the American Mathematical Society" (AMS) on her work in math-dance. The AMS is the world's most widely read journal aimed at professional mathematicians.

Scherich's work in math and dance has garnered international acclaim. Her math-dance videos have been showcased in several film festivals and she has been interviewed on television and radio and featured on the cover of the Wall Street Journal. One of her videos also won an award through the National Science Foundation.

A photo from her article was chosen as the cover for the November issue of the journal.



Dr. Nancy Scherich



# SPOTLIGHT ON STUDENTS

This year we are choosing to spotlight a group of 13 seniors currently in Dr. Weaver's Stats Practicum. These students worked in groups of 4 and 5 to complete semester long, data driven projects proposed by external collaborating partners.



Jack Autieari, Elizabeth Blandin, Logan Laszewski, Claire Rainey and Evan Wu used R and Tableau to develop a productivity dashboard for Labcorp's division of cytotechnology.



Hannah Enk, JB Buckner, Tobias Coker and Lainey English worked with statisticians from DHL Corp to simulate statistical power for nonparametric tests in small sample rodent toxicology studies.



Becca Prisand, Danny Liu, Andriana Shea, and Marques Walker used R, SAS and Tableau to assess associations between social media presence and visitations and donations to the Animal Park at the Conservators Center.

# 2024 Lumen Prize

The Lumen Prize is the university's premier undergraduate research award that comes with a \$20,000 scholarship to support and celebrate their academic achievements and research proposals. This year the department has 2 Lumen Scholars!

**Kelly Donovan** - Applied Mathematics

Project: Novel Deep-Sea Coral Imputation Methods: Mathematically Filling in Missing Data to Further Coral Conservation"

Mentor: Dr. Nicholas Bussberg

**Lila Snodgrass** - Dance Performance and Choreography Project: Knot Theory and Parallel Processes in Math and Dance Mentor: Dr. Nancy Scherich

**Congratulations to our 2025 Graduates! Many have lined up exciting careers or will attend graduate school**

Those entering the workplace include: **Stephen Bailey**, **Eli Bier**, **Ashleigh Bowen** (Wayfair), **Caitlynn Collins** (Georgetown University School of Continuing Education), **Danielle DaSilva** (CVS Health), **Lucas Hoffses** (ClubZ Tutoring), **Josh Lapish** (InterVarsity Christian Fellowship), **Katelyn Litvan** (WTW), **Charlotte Porter** (AlphaSights), **Maria Scricco** (Russell Research), **Ben Simon** (New York Mets), **Maddie Volchko**, **Julia Walter** (Wayfair)

Congratulations to **Sol Addison**, **Lauren Beuerle** and **Jillian Thomas** on their induction into **Phi Kappa Phi**.

Congratulations to **Katelyn Litvan** and **Jillian Thomas** on their induction into **Phi Beta Kappa**.

New inductees into **Pi Mu Epsilon**, the National Mathematics Honor Society included: **Sol Addison**, **Liwei Chen**, **Kelly Donovan**, **Jeremiah Lee**, **Clayton McLamb**, **Logan A. Laszewski**, **Maddie Volchko**, and **Regan Lynn Zuchlewski**.

New inductees into **Mu Sigma Rho**, the Statistics Honor Society included: **Lauren Beuerle**, **Danielle A. DaSilva**, **Tyra Duque**, **Hannah R. Enk**, **Lainey English**, **Hayley Hawkins**, **Alex B. Katzman**, **Logan A. Laszewski**, **Katelyn R. Litvan**, **Sean M. McDermott**, **Clayton McLamb**, **Rachel C. Mingus**, **Walter B. Pierce**, **Rebecca J. Prisand**, **Claire E. Rainey**, **Bailey A. Reutinger**, **Maria D. Scricco**, **Andriana E. Shea**, **Sarina L. Smith**, **Jacob Stanley**, **Juliet Marie Walker**, **Evan N.C. Wu**

**The following awards were given out at our end of year Awards Ceremony**

- ✓ Outstanding Experiential Learning Award in Statistics-**Evan Wu**
- ✓ Outstanding Academic Achievement in Statistics- **Hayley Hawkins** and **Katelyn Litvan**
- ✓ Outstanding Academic Achievement in Mathematics-**Danielle DaSilva** and **Sarah Mirrow**
- ✓ Outstanding Research Award in Statistics-**Schuyler Cady**
- ✓ Outstanding Academic Achievement Data Analytics- **Maria Scricco** and **Jacob Stanley**
- ✓ Outstanding Research Award Mathematics- **Danielle DaSilva**



# Alumni Updates

**Erin Shah (nee Strosnider) - 2014** "After graduation I took a job at the Johns Hopkins University Applied Physics Lab as a data analyst. I worked with a team on a contract with the Navy doing testing and evaluation for radar system. I then moved to work for the Department of Defense as an analyst. I worked there for 5 years, until my spouse joined the Army and was stationed overseas. We were stationed in Germany and now in Maryland. I just had our first child, a son, this summer and am taking time off to be at home with him."

**Isabelle Stimson - 2023** "Currently an intern at the ISF Academy in Hong Kong, teaching Year 6, 8 and 9 students within the Maths Department."

**Sara Galinko - 2017** "Now working in new research field (pediatric oncology). Previously worked in ophthalmology clinical trials."

**Adam Benjamin - 2004** "I'm currently working as a Data Scientist for Unacast, a location intelligence company. If students have questions about working in academia, consulting for NGOs (e.g., World Bank), or private sector, I'd be glad to talk with them. They can reach me through LinkedIn."

**Ronald E. Denhart - 1966** "Currently live in Bozeman, Montana. Retired mathematics teacher and basketball coach 1973, followed by farm manager to current and twenty five years as a business executive including corporate ownership."

**Jeanette Olli Mokrey - 2003** "I wrote a textbook "College Algebra: Functions and Applications" (available in digital format only) published by Great River Learning."

**Donna Davis Westbrook - 1984** "I am finishing my 4th year as a school board member for the Alamance-Burlington School System (ABSS). I am currently running for re-election. I retired from ABSS in 2017 after 32 years serving as a math teacher, assistant principal, and director in the Human Resources office. I currently have 6 wonderful grandsons!!

**Hal Gartner - 2014** "Daughter (Louise) born 2/24. 9th year teaching math at Cardigan Mountain School (NH)."

**Erica Condon (now Korwin) - 2013** "Teaching math in NJ, got legally married 7/11/22, celebrated our marriage with a wedding 8/25/23, and had a baby girl 9/26/24."

**Benjamin P. Rogers - 2019** "Moved from Durham, North Carolina to Bethlehem, Pennsylvania. Still teaching high school mathematics (Algebra 1 & 2) at Liberty High School. Beginning my Master's in Teaching & Learning at Lehigh University this upcoming spring."

**Michael Golaski - 2021** "I recently made a big change. I began a new job. I was originally a data scientist at Siemens-Healthineers. I am now a senior data scientist at Stryker and I moved from Cary, NC to Chicago, IL

**Derek Gould - 2014** "MBA - Fuqua / Duke. Currently the Chief Growth Officer of Home Solutions

**Eleanor Smith Hartley - 1963** "Retired as Vice President and Actuary from Prudential Financial 2008. Moved to Massachusetts 2019 to be near our children and grandchildren. My husband Paul and I are enjoying retirement and being near our family."

**Amy Moore - 2022** "I'm currently in my 3rd year of pursuing my PhD in biostatistics at Emory University."

**TJ Walsh - 2023** "Employed full-time at Acrisure Re. Started Masters in Data Analytics at Georgia Tech."

*Alumni updates continued.....*

**Bethany Lake King - 2018** - "I currently work as the Strategic Contracting Manager at ViiV Healthcare doing analytics and strategy. I graduated from the Kenan-Flagler School of Business at UNC Chapel Hill with my MBA last October."

**Sam Chessen - 2021** "Started at Deloitte as a consultant in DC working on internal controls in the GPS practice for federal agencies."

**Ava Burlingame -2023** "Same job and place - Lockton Companies Analyst, NYC."

**Daniel Schiff- 2021** "Senior Specialist Programmer at AstraZeneca."

**Jeff Davis (1990) and Morgan Davis (1989)** - "We became grandparents this year.

Jagger Morgan Miller was our first grandchild and he was born on Feb 23, 2024 to our middle daughter Morgan.

Davis Walker Smith and Landon Ray Smith (identical twin boys) were born to our oldest daughter Amanda on Sept 17, 2024..





## Faculty Updates

**Dr. Hwayeon Ryu** and her team of undergraduate researchers were recognized for excellence at the 2024 Mathematical Association of America (MAA) MathFest conference in Indianapolis, IN over the summer. Five of her students, hailing from four different countries, presented their mathematical modeling research and were recognized with the Janet L. Anderson Award for Undergraduate Research in Mathematical or Computational Biology. The group dedicated their summer to research in computational biology, contributing to a National Science Foundation-funded project on Covid-19 mathematical modeling.

Dr. Ryu also won the 2024 Award for Distinguished Teaching by a Beginning College Mathematical Faculty Member at the Mathematics Association of America Southeastern Sectional conference. The annual award recognizes early career teachers whose success and effectiveness in teaching undergraduate mathematics exceeds the bounds of classroom teaching.

Dr. Ryu will spend the 2025/26 academic year on a full-year, full-pay sabbatical through Elon's Faculty Research and Development Committee. Her selected proposal will allow her to investigate the cause of a medical anomaly with the potential to advance cancer treatment strategies through completing a mathematical model predicting the dynamics of key immune cells in cancer biology.

**Dr. Karen Yokley** sat on the committee for Elon University's fund for Excellence in the Arts and Sciences. Thirteen projects envisioned by Elon faculty, staff and students were awarded grants which will fund items that strengthen community outreach, promote deeper understanding of historical and contemporary issues, and support scholarship or enhance existing programs.

**Dr. Jeff Clark** Continues to serve as Faculty Ombudsperson. On October 30 he attended the semi-annual meeting of the NC Region Ombuds Group in Chapel Hill, NC.

Dr. Clark also attended the Mathematical Association of America's annual MathFest in Indianapolis, IN. He concluded six years as chair of the MAA's Committee on Minicourses and monitored one of the minicourses his committee selected on behalf of the MAA. In addition, he spoke on "Animations in Multivariable Calculus", about how to construct meaningful animations that advance student understanding and intuition about three-dimensional objects.

**Dr. Heather Barker** traveled to New Zealand to present at the International Association of Statistics Education Roundtable. The theme was "connecting data and people for inclusive statistics and data science education". Her paper, titled "Integrating Social Justice into Data Investigation: A Framework for Statistical Analysis of Police-Involved Deaths," explores the intersection of teaching mathematics for social justice principles and a data investigation process framework. The conference's approach requires a sharing of participants' papers and feedback which drives revisions and helps shape their presentations.

**Dr. Aaron Trocki and Dr. Hwayeon Ryu** presented at the 2024 Transforming STEM Higher Education Conference, the annual meeting of the American Association of Colleges and Universities (AAC&U) in November. They delivered the oral presentation “Fostering and Assessing Conceptual Understanding in Early STEM Courses.” This represents their ongoing SoTL work, which was designed to enhance students’ conceptual understanding in Calculus I courses at Elon. The team hopes to develop the curriculum materials for Calculus I and to share them with other faculty who regularly teach this course. This project has been supported by funds from the College of Arts and Sciences’ HHMI Inclusive Excellence Grant.

Dr. Trocki was also invited to deliver the featured workshop, “Strategies for Incorporating Generative AI into Undergraduate STEM Teaching and Learning,” at the Artificial Intelligence in Undergraduate STEM Education Conference sponsored by the American Association of Colleges and Universities and hosted by North Carolina Central University and Wake Technical Community College.

**Dr. Nancy Scherich** had two of her mathematics student researchers featured at summer conferences. Sol Addison '25 and Lila Snodgrass '26 gave oral presentations at two conferences. At the Unknot V conference for Knot Theory, Addison and Snodgrass's presentation on their work with the "danceability" of knots was the only undergraduate talk to be featured without a parallel session. Dr. Scherich traveled with them when the two presented their research at the Bridges Math and Art conference and she presented her Math-Dance video about Alexander's theorem. All three performed in a theatrical production about the life of Mathematician Alan Turing.

Dr. Scherich also began a team building event with students. The Math Stats Acrobats had their first outing in Spring 2024. A group of 30+ students took an acrobatic pole dance class together at the Elon alumni owned Pole Fitness Dance studio in Burlington. It was a wonderful community building event for our department’s students.

**Drs. Brittany Riggs, Emily Elrod, Kristen Mazur, along with Drs. Aaron Trocki, Jeff Clark, and Hwayeon Ryu** presented at MathFest, the annual meeting of the Mathematical Association of America in August.

**Trocki, Riggs, and Elrod** organized a contributed paper session, along with colleagues from the American Mathematical Association of Two-Year Colleges (AMATYC), entitled "Engaging All Students in Meaningful Mathematics and Accessibility by Design". Seven presentations were held during the session. The three also delivered the oral presentation "Making Early College-Level Mathematics Relative to Students' Interests". This represents work completed alongside Elon colleagues **Larry Cantrell, Dan Flores and Nancy Scherich**.

**Dr. Mazur** delivered her oral presentation in the Advances in Algebraic Topology session entitled "Uniquely Compatible Transfer Systems".

**Dr. Ryu** delivered her oral presentation "Project-based Learning to Enhance Student Critical Thinking".

**Drs. Nicholas Bussberg and Karen Yokley** along with their math/stats research students traveled to the Greensboro Science Center in September. Students were able to engage in hands-on learning with the animals they are studying and engage with experts in other fields of their research.

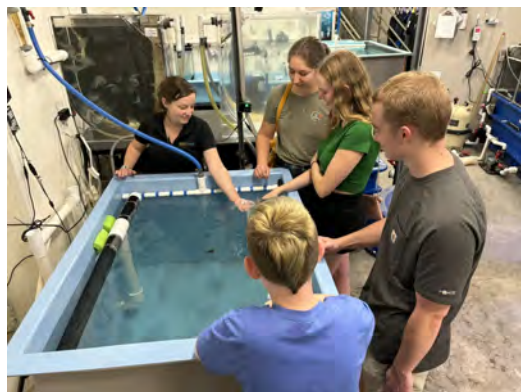


Dr. Barker in New Zealand

MathFest: Dr. Riggs, research students, Dr. Elrod, Dr. Clark







Dr. Busberg and Dr. Yokley's research students: Jillian Thomas '25, Erik Blix '25, and Kelly Donovan '26 worked with Greensboro Science Center aquarist Elizabeth Hincker



Dr. Scherich's research students: Lila Snodgrass '26 and Sol Addison '25 present At the Unknot V conference for Knot Theory



Dr. Scherich and Math Stats Acrobats



Dr. Ryu with her research students - Nicolas Alvares '27, Ayesh Awad '24, Murilo Ferreira Lopes '27 and Pagnapech "Pech" Ngoun '26 At MathFest



Drs. Riggs, Elrod and Trocki at MathFest

# *Thank you Donors!*

Thank you so much for your donations to our department, which help us provide money for equipment, projects and departmental scholarships. We are so grateful for the following donors for the Calendar year 2024:

*Abigail J. Garcia '11, Kasey Collins '22, Jessica D. Kelly '09, Mary C. Hall '10, Booz Allen Hamilton, Jeanette P. Mokry '03, Briana T. Long '05, Kelly A. Reagan '17, Ashleigh A. Bowen '24, Michael B. Landreth '11, Lauren P. Beuerle '25, Maggie B. Hakas '17, Lynne M. Davis '71, Tammy S. Newbern '94, Lori See '85, Bobby N. Beckom '69, Emily D. Buehler '13, Harold Edward E. Williams '66, Matthew R. Christian '07, Samantha F. Chesson '21, Sharon L. Medeiros '02, Jaime L. Speiser '10, Maggie G. Macdonald '15, Gina M. O'Rourke '11, Juliet D. Angle '18, Caitlynn L. Collins '24, Mark Weaver, Leanna B. Giles '02, Morgan L. Ferguson '19, Bethany V. King '18, Griffin Pace '25, Paul C. Kantlehner '16, Kathleen M. Lovin '03, Helen F. Walton, Angeline M. Sanders, '18, Helen Stein, Thomas J. Walch '23, Amy E. Flower '04, Cynthia A. Blanchard '10, Sara D. Armstrong '22, Robert M. Davis '03, Daniel J. Rapp '13, J. Todd Lee '09, Lynn W. Mollenauer '11, Lynne M. Davis, Lori E. Tyler '11, John E. Papa '09, Heather Barker '11, Sara Boyer, Tammy S. Newbern '71, Nery Guardado, Helene K. English, Dr. Jim Beuerle.*