

# MATH DEPARTMENT

## 2022-2023 Newsletter



Sacred Heart  
UNIVERSITY

WELCOME to our annual Mathematics Department Newsletter. We had an exciting year with many activities and accomplishments. Our students have received awards, attended conferences, conducted research, and have really contributed to the life of the department. Our faculty have had many accomplishments in teaching and scholarship. We conducted several events such as Alumni Night, hosted a guest speaker for the university community, had our Pi Mu Epsilon induction and awards ceremony, and much more. We have heard from several alumni and are happy to report what they are doing. Our Math Club has been becoming more active. On the curriculum front, the department is creating an innovative course, Introduction to LaTeX, which will be launched in the Fall. This course will teach students how to use the program LaTeX which is the industry standard for typesetting mathematical writing. It has been a great year and we hope you enjoy reading all about it in this newsletter!



### Pi Day

Pi Day was March 14th and the department happily acknowledged it. The department was all decorated, thanks mostly to Prof. Howard, and there were even pies available baked by Dr. Moliterno's wife. Below is a picture of Prof. Howard with two students from her MA 107 Math for Elementary Teachers class.



### Reaching out to Teachers

The math department hosted three Fairfield County Math Teachers' Circle Meetings this academic year. Dr. Lizzie Tripp led a session on "The Graceful Tree Problem." Middle and High School math teachers, Sara Dalton and MaryAnn Goldstein, respectively, led a session on "Geometric Discoveries with Dot Paper." And Fairfield University professor, Zhanar Berikkyzy, led a session on "Topological Connectivity and the Four-Color Theorem." The sessions were highly engaging and well attended by Noyce scholars, math majors, math teachers and SHU professors.

Support the math department by clicking [here](#) and donating to the College of Arts & Sciences.

# Graduating Seniors

As we say goodbye to our graduating seniors, we are excited for what the future holds for them. Teresina Berni will be starting her Ph.D. in Neuroscience at UC Davis in the Fall. Erica Juliano is working at Raytheon in their Digital Leadership Development Program where she will be doing three 8-month rotations. Her first rotation is as a project manager for the F35 fighter jet. Allyson Kenny will be working as a project manager for New Castle Hotels and Resorts. Hoony Kwak will be applying to graduate schools for mathematics. Kimani Long will be working over the summer as a Teacher at Horizons at SHU, starting her Masters year this summer as well, and will be student teaching in the Fall at Ponus

Ridge STEAM Academy in Norwalk. Julia Simoneau will be pursuing her Masters in secondary education at SHU and is hoping to student teach/intern at Bun-nell High School in the fall. Lauren Vowinkel will also be pursuing her Masters at SHU for education and will be student teaching at Hillcrest Middle School in Trumbull in 7<sup>th</sup> and 8<sup>th</sup> grade mathematics. After that, she plans on continuing teaching as part of the Noyce Program, teaching in a high needs school district for six years after completing her Masters. Makinzie Youngblood is working full time at OdysseyRe in Stamford as an Actuarial Associate. She is part of their property pricing team.



Above is a picture taken at the graduation ceremony on May 14. Pictured are (front row L to R) Allyson Kenny and Erica Juliano, (middle row L to R) Kimani Long, Lauren Vowinkel, Julia Simoneau,

Makinzie Youngblood, and Prof. Tina Romansky, (back row L to R) Dr. Andrew Lazowski, Colton Nicholas, Roisin McGuirk, and Cameron Connelly

## Student Accomplishments

We are proud of the accomplishments of our students. Chelsea Thakkar '23 and Erica Juliano '23 received the dean's prize for their senior capstone project for Computer Science which was presented at the Academic Festival this year. Here is the [link](#) to the poster and the project.

Claire Skumurski '24 will be interning this summer at American Express as a Credit & Fraud Risk Analyst in their NYC office. This is very exciting opportunity for her.

For her senior seminar capstone project, Lauren Vowinkel '23 worked with Dr. Andrew Lazowski and Dr. Jean Guillaume to write the paper "Discovering Shadows in Hyperbolic Space." Her paper won honorable mention in the Writing Across

the Curriculum contest. See picture below of Lauren with her award.



## Pi Mu Epsilon Inductions and Awards Night

The department held our annual Pi Mu Epsilon Induction Ceremony and Awards Night on April 6th. Inductees of Pi Mu Epsilon were Francesca Daniele '25, Victor Ginart Belmonte '24, Kimani Long '24, Abigail Poleway '24, David Robillard '24, Claire Skumurski '24 and Lauren Strong '24.

Winners of the Freshman Award were Michael Rothberg and George Triebenbacher; winners

of the Sophomore Award were Francesca Daniele and Molly Dolan. Lauren Strong won the Junior Math Award; Maya Salamone won the Rose Marie Kinik Award for top junior math major. The Silver Medal of Excellence was awarded to Makinzie Youngblood and the Gold Medal of Excellence was awarded to Erica Juliano. Congratulations to our students!





# NOYCE Scholars

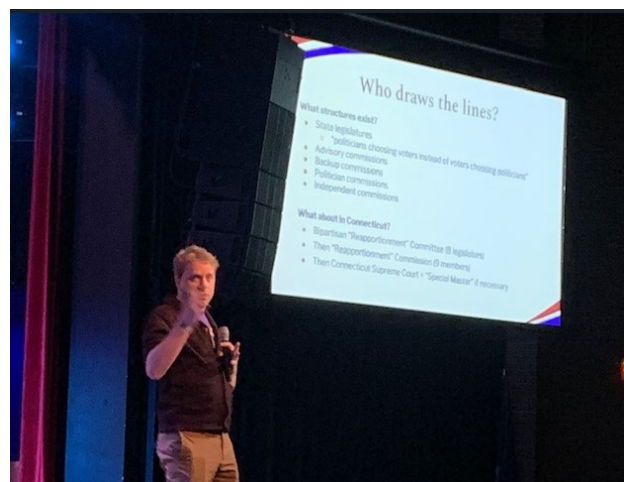
The mathematics department continues to have students in the NSF sponsored Robert Noyce scholarship program which is a grant that helps fund students who will be future teachers in grades 7-12. Students receive about \$47,000 in scholarship money for their junior, senior, and graduate years. They are committed to teaching in high-needs school districts for at least six years after they become certified teachers. Graduating scholars include Kimani Long, Julia Simoneau, and Lauren Vowinkel. Beginning their second year are Matthew Cordova, Abigail Poleway, and Maya Salamone. Next year Francesca Daniele and Isabella Zanni will start the program. This past year, Kimani, Julia, and Lauren traveled with Dr. Andrew Lazowski to the National Council of Teachers of Mathematics (NCTM) Annual Meeting & Exposition in Los Angeles to present a workshop titled

“SYSTEMIC Explorations of Culturally Responsive STEM Pedagogies with Preservice Elementary Teachers” and a talk titled “Master Mentors as a Lever for Fostering Culturally Responsive and Sustaining Math Educators.” See picture below of them in LA.



## Math in State Elections

In March, we held our Annual Mathematics Lecture. For the first time since we have held this event, our speaker was an alum! Kyle Evans '11, Visiting Assistant Professor of Mathematics at Trinity College in Hartford gave the talk “Redistricting and Connecticut: Is Democracy Incumbent on Mathematics?” In this talk, Dr. Evans discussed the mathematics behind creating state congressional districts. He discussed how both major parties vie to keep incumbents in office, and how mathematicians are getting involved in an attempt to draw more fair maps. It was an interesting talk that garnered excellent attendance.



# Math Club

The Math Club, under the dynamic leadership of president Arianna Visconti, has been the driving force behind the implementation of a School-University Partnership program. This program was developed by Math Club advisor, Dr. Jean Guillaume, together with Dr. Robin E. Hands, Director of Clinical Practice at the Isabelle Farrington College of Education and Human Development. In an effort to assuage the [devastating effects of covid-19 pandemic on American schoolchildren](#), Jean and Robin teamed up with Brad McGuire, the Director of Athletics and Late Day Programs at Adam J. Lewis Academy in Bridgeport, to pilot an after-school math enrichment program which involves members of the university Math club. When presented with the idea in the early days of Fall 2022 semester, Arianna quickly jumped on board and sprang into action. She immediately got in touch with Brad and, together, they laid out the framework of what is proven to be a fruitful partnership between the University Math club and the Academy.

Pursuant to the terms of the agreement, members of the Math Club drove themselves to the Academy every other Friday to meet the schoolchildren and to entertain them with fun math activities and games. The aim, according to Arianna, is to “create an environment that makes the kids want to learn math and want to focus. We introduced them to fun games and ice-breaker math activities such as scavenger hunts, math bingo, and competitive team math designed to boost math skills and to encourage critical thinking.” It did not take long for the program to become one of the kids’ favorites. Every other Friday, they looked forward to meeting our Math Club members and to sharing with them all that they learned since they last saw each other. For Arianna, the entire experience rekindles her passion for working with children. Moreover, it presents Math Club members with a unique opportunity to test, hone, and cultivate valuable skills. Albert Einstein says it best: “if you can’t explain it to a six-year-old, you don’t understand it yourself.”

In the end, this new experiment was a success and all the credit should go to the following Math Club members for carrying it out: Arianna Visconti (math, business economics, and finance majors), Lauren Strong (math major), Julia Simoneau (math major and education), Matthew Cordova (math major and education), and Ava Manzo (biology major). It is worth noting that this initiative culminated in a conference presentation at the National Association for Professional Development Schools, in Jacksonville, FL. As Education Preparation Programs (EPPs) struggle to implement strategies to recruit math teachers in order to fulfill the national math teacher shortage, the model of an Education Preparation Program, working together with the Math Department in the College of Arts and Sciences (CAS), and applying the teaching practice to a local school represents the epitome of what the *National Network for Educational Renewal* calls the “Tripartite Model” = EPP + CAS + School District = Tripartite ([Hands, et al](#)). Even if it doesn’t result in the Math Club students becoming math educators right away – a seed has been planted and you never know when it will sprout!



# Alumni Page

One of the greatest joys of the math department is keeping in touch with our alumni. It's always exciting to hear about their accomplishments, both professional and personal. Here are some highlights:

**Gabrielle Bentze '22** recently started a full time position as a financial advisor at Lenox Advisors in NYC.

**Connor Bohl '15** passed his last actuarial exam in December 2022 and is now a fully qualified member of the Casualty Actuarial Society. He has been living and working in Manhattan since 2016. He works for reinsurance broker Guy Carpenter, which is one of the operating companies of Marsh and McLennan.

**Christopher Carbone '11** has been teaching at Post University for 8 years with various levels of math classes. He is almost finished with his fourth year of teaching at Fairfield University, as well.

**Amy Ellis Zaffina '17** got married! She and her husband, Gianfranco, got married in July at Burr Mansion in Fairfield. Lauren Puskar '17, who was also a math major, was one of her bridesmaids.



**Michael Fenech '13, MAT '14** is graduating with his Ph.D. in STEM Education from The University of Texas at Austin and will be starting as a Postdoctoral Associate at The Massachusetts Institute of Technology this summer, where he will be creating project-based instruction curriculum units for high school geometry classes and conducting design-based research around their implementations.

**Amanda Haydu '22** is still serving with AmeriCorps NCCC until the end of July. Then in September she is heading over to Missouri where she was accepted into the AmeriCorps St. Louis Disaster Response Team.

**Nick Kapoor '11, MBA '14** continues to teach full-time in the Math Department at Fairfield University and this year was promoted to Instructor of the Practice. He has been teaching the calculus sequence, an honors seminar on gerrymandering and redistricting, and will teach Discrete Math this Fall. He was also appointed Associate Director of the Fairfield University Center for Teaching & Learning in Fall 2022 and serves on the Faculty of Color Executive Council. Nick stays involved in politics as the Chairman of the CT Commission on Human Rights and Opportunities and manages campaigns for various state and local offices across Fairfield County. Nick has begun an active research agenda around the scholarship of teaching and learning in mathematics and political science, and also around bringing the two disciplines together through research on topics such as  $n$  ranked-choice voting and ballot design. He had his first peer-reviewed publication last year and looks forward to many more.

**Katie Perzanowski '13** continues to work for the State of CT's Land and Water Resources Division at DEEP. She primarily focuses on coastal enforcement as well as outreach initiatives to help educate prospective buyers of coastal property on permit requirements and potential flooding issues. She performs improv regularly at Sea Tea Comedy theater in Hartford and enjoys swing dancing. She is almost at 10 years of volunteering at Mystic Aquarium and is with the Animal Rescue Program helping to rehabilitate sick and injured seals and sea turtles.

**Sophie Pindrys '22** is working at John Hopkins Applied Physics Lab. She is currently working on two projects. For the first project, her team is developing some machine learning models to find certain medical events in videos of a simulation where a medic performs on an injured individual. She is developing a grammar that can parse the user's query and extract parameters that are then used to run the model. For her second project, her team is automating the generation of Covid-19 reports and integrating it into the customer's environment. She is working with Pyspark to perform operations on very large datasets and generate graphics and tables that are then inserted into the report through an automated workflow. She is enjoying both projects and is thankful for her math degree that has prepared her for this job.



# Faculty Spotlight

The faculty have accomplished a lot this year. Dr. Jason Moliterno continued serving as Secretary/Treasurer of the Northeastern Section of the Mathematical Association of America. Dr. Moliterno also gave the presentation, “Teaching Proof Writing Courses During and After the Pandemic” at MathFest in Philadelphia. He is also currently serving as Faithful Navigator of the Waterbury Assembly of the Knights of Columbus. Dr. Moliterno is looking forward to being on sabbatical in the Fall.

Dr. Elliott Bertrand enjoyed his fifth year teaching at SHU. He presented the talk “Variations on Discrete-Time Population Models” at the Joint Mathematics Meetings in Boston this past January. He also continued collaborating with FCEHD colleagues Dr. Lindsay Keazer and Dr. Jen Phaiah as part of an NSF grant on developing resources and professional development opportunities that focus on promoting Universal Design for Learning (UDL) strategies in undergraduate math classes. Elliott looks forward to working with his math colleagues on this initiative and is also excited to teach a new course, Introduction to LaTeX, next fall. Elliott and his wife Hannah welcomed twin boys, Cole and Reed, on May 4.



Dr. Bernadette Boyle was excited to return to the classroom after her sabbatical. This year she incorporated the statistical computer program “R” into her Elementary Statistics classes for the first time, which was well received by the students. She also taught an independent study on topology to three senior mathematics majors. This was the first time that topology had been offered to

students at Sacred Heart University. Both creating the topology course and integrating R into the statistics courses were the result of work that Dr. Boyle had done during her sabbatical year. She looks forward to teaching both courses again in the future. In addition to her time in the classroom, Dr. Boyle continues to enjoy her work as the faculty mentor to the varsity cross country and track and field teams at Sacred Heart. She will be serving as interim department chair in the Fall while Dr. Moliterno is on sabbatical.

Dr. Jean Guillaume gave two conference presentations this year. The first was *Upward-Closed Hereditary Families in the Dominance Order* which was given at the Joint Math Meetings in Boston. The second was *A Multidirectional Approach to the Math Teacher Shortage with Benefits for all Stakeholders* at NAPDS 2023 in Jacksonville. He also submitted the article submission [The Distinguishing Chromatic Number of Hamiltonian Circulant Graphs](#) to the journal *Graphs and Combinatorics*.

Dr. Peter Loth was on sabbatical in the Fall semester. His research paper *Fat Delta 2: Functorial Subgroups of Topological Abelian Groups* (with D. Dikranjan, W. Lewis and A. Mader) was published in the journal *Topology Proceedings* 61 (2023), 269-304. At the 2023 Spring Eastern Virtual Sectional Meeting of the American Mathematical Society, April 1-2, 2023, Dr. Loth presented the research paper  *$L_{\omega\alpha\omega}$ -equivalence of abelian groups with partial decomposition bases*.

Dr. Elizabeth Tripp published her doctoral research, *Evolutionary Kuramoto Dynamics* in *Proceedings of the Royal Society B* in November, 2022.

# In Memoriam

## Rose Marie Kinik

Rose Marie Kinik, Professor Emeritus of Mathematics and long-time chair of the Department of Mathematics passed away on July 8, 2022, at the age of 80. Rose began her career as a high school math teacher. She came to SHU in the early 1980s as an adjunct and became a full-time faculty member a few years later. Rose served as chair of the math department for over two decades until her retirement in 2010 after which she continued to adjunct until 2012.

Rose was a mentor to students and faculty alike. No matter how busy she was, she always had time for students. It was very common to walk by her office and see several students congregating there getting extra help. But her assistance to students went far beyond helping them with math. Rose was always there for students who wanted to talk about their futures and about life in general. She imparted her wisdom onto over a generation of students. Alumni frequently ask about her and refer to her as one of their most influential professors. In her long tenure as department chair, Rose was also a mentor to the many faculty she hired, both full-time and adjunct. She was always available for advice on teaching, and always helped new faculty get acclimated to the department and to the university so that they could have a successful career.

Even though Rose retired many years ago, her positive effects on the math department are still felt to this day. Almost like a mother to the department, she created a culture of warmth and collegiality in the department. She created an atmosphere where students felt welcome. Rose also did much to modernize the department to bring it in line with the uni-



versity as it grew – creating new courses, updating the curriculum, and establishing resources necessary for students. A few years ago, the department named an award after her, the “Rose Marie Kinik Award for Outstanding Junior Math Major” given to the junior math major with the highest major GPA. Rose always came back to the department each year for the annual awards night to see the award given in her honor and to support the department.

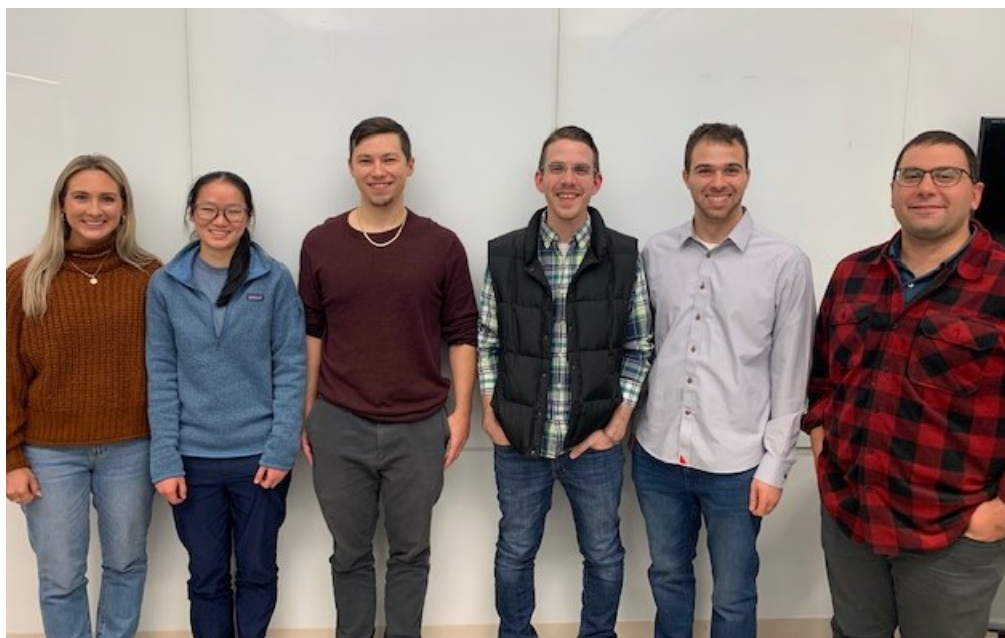
Rose was a loving wife, mother, and grandmother and always spoke fondly of her husband, two children, and five grandchildren she leaves behind.



# Alumni Night

We had our yearly Alumni Night in October. This was one of the best attended Alumni Nights that we have had! This evening gave our current students the opportunity to hear our alumni talk about the careers that they have been pursuing since graduation. Alumni featured, and pictured below, were Lucinda Cahill '22, Linnea Caraballo '22, Michael Boyles '18, Tim Weiss '16, Michael Bubolo

'19, Bobby Lycoudes '12. Stephen Clarke '20 and Chelsea Coehlo '21 also participated via Zoom. These alumni have careers such as high school teaching, graduate school, engineering, actuarial science, business & finance, and more! We are always thrilled to welcome our alumni back to interact with our current students.



## Coming Attractions!

As this academic year closes, we look forward to another great year ahead. While Dr. Molierno is on sabbatical in the Fall, Dr. Boyle will be the interim chair. We're sure she will do an amazing job. We look forward to the continued activities of the Math Club. We also plan to continue our traditions of hosting Alumni Night and inviting a guest speaker to give a mathematics talk to the university community. This past year the guest speaker discussed the mathematics behind state redistricting. Next year we hope to have a speaker discuss the mathematics behind national redistricting.

We plan to offer our MA 201 Introduction to LaTeX for the first time. This course will teach students how to type all of their math homework in LaTeX so that it looks nice and professional!

We also look forward to our students participating in academic activities such as giving talks and presenting posters at SHU's annual Academic Festival and at local conferences through the MAA. We also look forward to more accomplishments by our students and faculty. Stay tuned!