

# MATH DEPARTMENT

## 2020-2021 Newsletter

Sacred Heart University

WELCOME to our annual Mathematics Department Newsletter. This was an unusual year for our department as the coronavirus pandemic continued. However, we made the best of the situation and did as many activities as we could. We held our annual Alumni Night virtually and we held a scaled back version of our annual Pi Mu Epsilon Induction and Awards Night. Thankfully, we were able to see our majors graduate in an in-person commencement ceremony and there was even an in-person commencement ceremony for last year's graduates in which some of our majors returned.

### Curricular Development

In the Fall, we inaugurated our new math major with three tracks: the traditional track, actuarial science track, and data science track. The traditional track is similar to our major prior to the division into three tracks. We are thrilled that many incoming freshmen are choosing our two new tracks, and even some upper-class students are converting to our new tracks!

To sustain our new curriculum and to support other majors such as computer science and engineering, we have begun to offer Differential Equations, Probability, and Mathematical Statistics on a regular rotating basis. Additionally, Dr. Bertrand taught a new course in Mathematical Modeling this spring. The department is continually enhancing its curriculum to suit the needs to today's students.

### Welcome to our new faculty!

We welcomed three new full-time faculty members into the department at the beginning of this year: Dr. Elizabeth Tripp, Prof. Catie Carrigan, and Prof. Julianne Howard. Dr. Tripp recently completed her Ph.D. at Dartmouth College. Her area of specialization

is probabilistic dynamics on networks. Prof. Howard was an adjunct in the department last year. Prof. Carrigan was most recently an adjunct instructor at Quinnipiac University and Southern Connecticut State University. Professors Tripp, Carrigan, and Howard are in the pictures below.



We are also sad that Prof. Zoe Cramer is leaving us after being with us for two years. Prof. Cramer had begun a real estate business and it is doing very well! She will be focusing her energies on her business. We wish her well in her future endeavors. To this end, we did a search to fill Prof. Cramer's position. After interviewing many qualified applicants, the department has hired Rachel Andriunas. If her name sounds familiar from past newsletters, it is because Rachel is an alumna! She graduated from SHU as a math major in 2018. We look forward to welcoming Rachel back (although she did adjunct with us last year).

### Keep Reading!

The department is excited about many of its accomplishments this past year. Our students have accomplished a lot, our graduates have exciting plans for the future, and our faculty have had some notable accomplishments. We have also been fortunate to keep in touch with several alumni who have written to us letting us know how they are doing. We have noted their accomplishments as well. We hope you enjoy reading about all of this in our annual newsletter!

# Graduating Seniors

Because of the cancellation of commencement last year, there were actually two commencements involving our math majors, one for the Class of 2020 and one for the Class of 2021. Three of our majors from the Class of 2020 returned for their commencement ceremony. Pictured below from the Class of 2020 (left to right) are Lauren Bolcar, Vanessa Kobyluck, and Meghan Uhrynowski.



A few days after the 2020 commencement was held, the 2021 commencement was held. Below is a photo of some of our math majors at the commencement. Chelsea Coelho and Winston Pauley are missing from the photo as they graduated with the Welch College of Business and Technology with double majors.

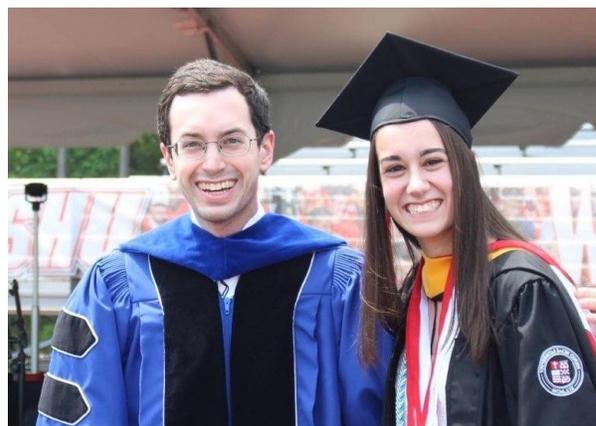


As we say goodbye to our graduating seniors, we are excited for what the future holds for them. Jaime Maggio has had an internship for over a year now working within the business services directorate at Brookhaven National Lab located on Long Island. She has applied to several full-time positions and is currently waiting to hear back. Her current goal is to work full time (Hopefully at Brookhaven National Lab) and in the future go back to school part time to receive an MBA.

Nick Malzone will be attending Rensselaer Polytechnic Institute for Industrial Management Engineering, continuing in the 4+2 program to which he was accepted this winter. This summer, he has an engineering internship at L3Harris. It is a remote internship but still very demanding, requiring 40 hours per week for 12 weeks.

Jordan Rzasa will begin her graduate education courses right after graduation. In the Fall, she will do her student teaching. After graduating with her master's in teaching, she plans to get a job as a middle school math teacher.

Chelsea Coelho (below with Dr. Elliott Bertrand) has applied to graduate schools and is still waiting to hear back from some of them. Her first choice is Stony Brook for their Applied Mathematics Degree.



Graduating seniors continued on next page ->

Brian Lumia is looking at different roles in risk management, business analytics, and even potentially teaching.

Mahailia Tulloch plans on returning to SHU this fall to continue her studies in the Master's in Finance and Investment Management program and then work in that field.

Shawn Tischler is happy to share two personal accomplishments. During his senior year, he had a daughter named Juliette. He also recently got engaged to his girlfriend who is also a Sacred Heart alumna from the Class of 2020 from the College of Business. Their family is pictured to the right.



## Pi Mu Epsilon Inductions and Awards Night

After being cancelled last year due to Coronavirus, we were able to hold our annual Pi Mu Epsilon Induction Ceremony and Awards Night on April 6th. Because of the pandemic, this was a smaller ceremony consisting of only students and faculty, but we were able to livestream the event for parents of the students.

Inductees of Pi Mu Epsilon were Erica Juliano, Lauren Vowinkle, Melanie Walenda, and

Makinzie Youngblood. Winners of the Freshman Award were Maya Salamone and Abigail Poleway; winners of the Sophomore Award were Erica Juliano and Alexa Ocel. Linnea Caraballo won the Junior Math Award; Makinzie Youngblood won the Rose Marie Kinik award for top junior math major. The Silver Medal of Excellence was awarded to Chelsea Coelho and the Gold Medal of Excellence was awarded to Jaime Maggio. Congratulations to our students!



# 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:

**Rachel Andriunas '18** got engaged last summer! She and her fiancé and are now planning the details for their wedding which will take place in May 2022. In March, she published her first research paper: "A Geometric Project for a Linear Algebra Class" in *Primus* with SHU faculty, Andrew Lazowski and Bernadette Boyle, as co-authors. She is also excited to be starting as a full-time math instructor at Sacred Heart University in the Fall.

**Michael Bubolo '19** is continuing to work as an actuarial analyst for KMS Actuaries, LLC. His firm is slowly approaching busy season, so they are preparing to create and send materials to their clients for their upcoming valuation reports. In addition to his job responsibilities, he also made great progress with the actuarial exams, as he passed four SOA exams and received all of his VEE credits towards the ASA designation. Currently, he is working through the FAP (Fundamentals of Actuarial Practice) modules and will start studying for Exam PA – Predictive Analytics about a month from now. If any students are interested in learning more about an actuarial career, Mike will be happy to answer any questions that they have about the profession.

**Stephen Clarke '20** has a NASA internship at Ames that started in the Fall and has been extended twice. So he will continue working there until the end of the summer. He also has a technical paper publication in the works and will hopefully be presenting at a conference, the AIAA Aviation Forum, later this summer.

**Michael Fenech '13** is a second year STEM Education Ph.D. student, Teaching Assistant, and Graduate Research Assistant at the University of Texas at Austin. His research interests include how students' classroom experiences influence their attitudes towards mathematics. He is currently refining an instructional model, called Argument-Driven Mathematics, to investigate how students respond to argumentation in algebra. He is also implementing a Quantum Computing course at a local high school for the second year in a row, which is the first course of its kind to be offered at a public school in the United States. This summer he is helping to turn this course into a dual-

enrollment college course that high school students can take and earn college credit for. He will be finishing up course work this summer, and in the Fall will begin working towards qualifying as a PhD candidate.

**Nick Kapoor '11, MBA '14** will begin his third year of full-time teaching in the Math Department at Fairfield University in the Fall. He is so excited to teach math-major multivariable calculus and two sections of math-major Calculus I. Nick continues to serve on the Monroe, CT Board of Education and Connecticut Commission on Human Rights and Opportunities. He also continues to help operate his family's insurance software business and has begun to adjunct again in the Department of Government at SHU.

**John Munday '19** is happy to report that he graduated from his master's program this April with an MS in Communication Sciences and Disorders from Teachers College, Columbia University. He also accepted a job at Nationwide Children's Hospital in Columbus, Ohio, working with children who were born with craniofacial anomalies.

**Sarah Novotny Vigliotta '08** has completed her second year with the Associate in Arts Program (AAP) with the University of Delaware. She spent the last year, as many in education have, converting courses to work with remote/virtual instruction. She helped move the AAPs Math Lab into the virtual setting and tried out several new pedagogical tools! In particular, she sat on an interdisciplinary panel discussion with two colleagues titled "Assessing Student Learning Through Oral Exams" at the University of Delaware's Summer Institute on Teaching in early June 2021. Prior to the pandemic, Sarah was working on starting a Math Circle for Wilmington middle school students and she hopes to get back to this work once it is safe to do so.

**Erin Puschak '14, MA '15** is finishing her sixth year of teaching math at Guilford High School. She also just finished her Sixth-Year in Educational Leadership at Quinnipiac University.

**Tim Weiss '16** is teaching math at St. Joseph's High School in Trumbull. He is enjoying teaching AP Calculus for the first time and is looking forward to teaching it again next year. He has even incorporated topics from MA 301 Structures and Proofs in his class after the students took the AP Exam!

# Faculty Spotlight

The faculty have accomplished a lot this year. Dr. Jason Moliterno was re-elected as Secretary/Treasurer of the Northeastern Section of the Mathematical Association of America. Dr. Moliterno also gave the presentation, "Excel Projects in a Probability Course " at the virtual NES/MAA conference in November. He was also elected Grand Knight of the Cheshire Knights of Columbus.

Dr. Elliott Bertrand enjoyed his third year at SHU. Highlights included teaching a pilot course in Mathematical Modeling (co-developed with Dr. Jean Guillaume) and chairing a search committee for a new instructor. Elliott and co-author Mustafa Kulenovic had the article "Global Dynamics of Generalized Second-Order Beverton-Holt Equations of Linear and Quadratic Type" published in the Journal of Computational Analysis and Applications. Along with several colleagues, Elliott co-organized a virtual special session of the AMS Spring Eastern Sectional Meeting on Applications and Asymptotic Properties of Discrete Dynamical Systems, which was dedicated to the retirement of their mentor/collaborator Orlando Merino of URI. Elliott delivered a presentation titled "Convergence Behavior of a Class of Generalized Difference Equations" at this conference and was invited to give a remote talk at URI. He also appreciated the opportunity to perform with the SHU Symphony Orchestra at a concert and during several of this year's commencement exercises.

Dr. Bernadette Boyle continued to enjoy teaching several different levels of math and mentoring senior seminar projects. In addition, she, along with fellow math professor, Dr. Andrew La-

zowski and alumna Rachael Andriunas, published the paper "A Geometric Project for a Linear Algebra Class" to the math journal PRIMUS. Dr. Boyle also continues to enjoy her work as the faculty mentor to the cross country and track and field teams at SHU.

Dr. Andrew Lazowski continues to direct the Thomas More Honors Program. The honors program has grown significantly under his direction and next year it will welcome over 300 new students. In addition to publishing the paper in PRIMUS (as described above in Dr. Boyle's section), Andrew also published the paper "Sequences of porous sets and an application to Kleinian groups" in the journal Quaestiones Mathematica. Andrew also had a significant role in securing a NOYCE grant. See the next page for details.

Dr. Peter Loth was the advisor for a team of students participating in the COMAP (The Consortium for Mathematics and its Applications) Mathematical Contest in Modeling, a worldwide mathematical contest. The students Amelia Brenner and Jaime Maggio received the final designation "Successful Participant" for their solution to *Problem B: Fighting Wildfires*. Dr. Loth's research paper *Free subgroups with torsion quotients and profinite subgroups with torus quotients* (with W. Lewis and A. Mader) was published in the refereed journal *Rendiconti del Seminario Matematico della Università di Padova* 144 (2020), 177-195. Also, his research paper *The main decomposition of finite-dimensional protori* (with W. Lewis and A. Mader) was published in the refereed periodical *Journal of Group Theory* 24 (2021), 109-127.

# NOYCE Grant

In the Spring 21 semester Dr. Andrew Lazowski, along with colleagues across the university: Dr. Mark Beekey, Dr. Kristin Rainville, and Bonnie Maur, received more than \$1.4 million from the National Science Foundation's Robert Noyce Teacher Scholarship Program. The program aims to increase the number of quality STEM teachers that graduate from SHU and then teach in high-needs school districts at the secondary level. As part of the grant, mathematics majors interested in teaching entering junior year, for the next three years, will be able to apply to this program to receive approximately \$47,000 towards tuition to

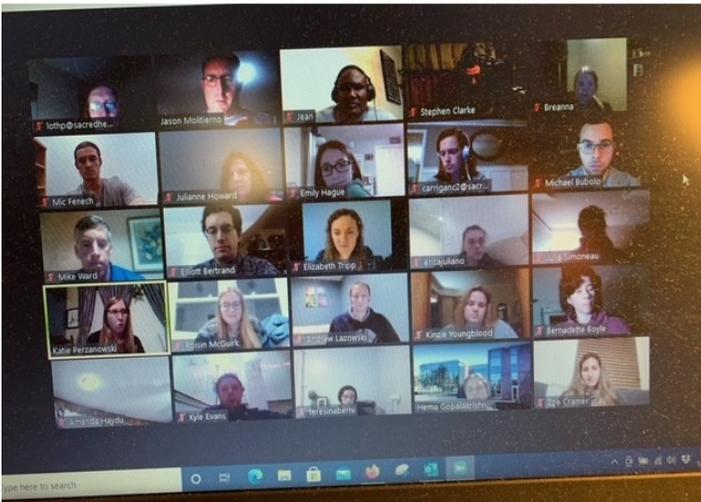
help fund their undergraduate and graduate education. They will also have funds to travel to national and regional conferences. In addition, they will receive mentors to optimize their STEM knowledge and gain teaching experience before they graduate. Rising junior Lauren Vowinkel has applied for and been accepted into this program; congratulations Lauren! This grant caught the attention of Congressman Jim Himes, who visited SHU to meet the Noyce Team. Below is a picture of Congressman Himes and Dr. Lazowski. To read more about the program, read [here](#).



# Alumni Night

With the pandemic, we did our annual Alumni Night virtually this year. We did this event over the extended Winter Break so that our current students could still feel connected to us. This evening gave our current students the opportunity to hear our alumni talk about the careers that they have been pursuing since graduation. Because the event was conducted virtually, this gave us the unique opportunity to invite alumni who live further away who would ordinarily be unable to participate. We

had alumni from Rhode Island, New York, New Jersey, Maryland, and Texas! Alumni featured were Steve Clarke '20, Mike Bubolo '19, Emily Hague '19, Matt Cole '15, Breanna McLaughlin '14, Michael Fenech '13, Katie Perzanowski '13, and Kyle Evans '11. These alumni have careers ranging from teaching to finance to business analytics to actuarial science. 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 we are sad to see our colleague, Zoe Cramer, leave us, we look forward to the arrival of our newly hired instructor, Rachel Andriunas. Rachel graduated from SHU in 2018 as a math major and we are excited to have her back!

With the pandemic hopefully subsiding, we will have the opportunity to do more activities. For the past two years, Dr. Rick Cleary from Babson College was to give the talk “Playing Fair with Math

and Stats: Analytics Applications to Sports Rules and Rankings”. We are hopeful that the talk can finally take place this year. Dr. Cleary has spoken at SHU in the past and his talks have always been very well received.

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 various Math Club activities as well. Stay tuned!