MEET THE NEW FACULTY MEMBER

"My name is Jacob Copeland, and I'm a new Lecturer here in the Department of Mathematics at TTU. I'm currently an instructor of Introduction to Linear Algebra, Math for General Studies, and Precalculus Algebra.

I obtained my Bachelor's in Mathematics in 2019 and my Master's in Mathematics in 2021 both from TTU, and I'm excited to be back amongst both familiar and new faces!

I'm an algebraist at heart, and my days as a graduate student were spent working under Dr. Padmini Veerapen in Noncommutative Algebraic Geometry. I hope to eventually obtain my Ph.D in Pure Mathematics continuing to work in this or a similar field.

When I'm not working on mathematics, you can usually find me travelling on the road visiting friends, camping, singing in Mastersingers alongside Dr. Brian O'Connor and Dr. Michael Allen, attending music festivals, and generally finding as many dance floors as I can! I'm always looking for new music recommendations, so if you have any playlists to share or just want to say hi, feel free to stop by!"

Submitted by Mr. Jacob Copeland

WELCOME, GRADUATE STUDENTS

We are happy to welcome eight graduate students, this year. Three of the graduate students are returning, Belguutei Ariuntugs, Meredith Hall, and Shamima Tumpa. The other five graduate students are new. One is an international student, Margaret Okailey Okai. Three are new to Tennessee Tech, Peyton Johnson, Peter Metzelar, and David Pack. Finally, Aidan Woodard earned his undergraduate degree from Tennessee Tech and has returned to Tennessee Tech to work on his master's degree.

CONGRATULATIONS!

Three of our math faculty members have earned new titles. Congratulations to Ms. Shelly Forgey for her promotion from Lecturer to Senior Lecturer. Congratulations to Mr. Sam Narimetla and Mr. Hank Duvier, who were each promoted from Senior Instructor to Master Instructor.

OFFICE CHANGES

Over the summer, Dr. Pamela Harden's office was moved from room 360C, in the Volpe Library, to Bruner Hall 110.

Although Mr. Jacob Copeland's office is LSC 1122, he is temporarily using BRUN 409 until his office is ready.

WHAT ELSE HAS HAPPENED?

There have been a few personnel changes in the Dean's Office for the College of Arts and Sciences. Ms. Vickie Mayberry, former Financial Administrative Associate for the Math Department, has moved within the Dean's Office from the Administrative Associate position to the Financial Administrative Associate position. Currently, she is working with, the newly appointed Dean, Dr. Daren Snider and, the new Administrative Associate, Ms. Amy Jo Carpenter.

This year, Preview Day was held on October 5, 2024. At the event, the Math Department's representatives, Ms. Shelly Forgey, Mr. Spencer Kennon, Mr. Sam Narimetla, Dr. Wendy Smith, and Dr. Michael Allen, met with a total of fourteen students.

Lastly, the Math Department added a fifth concentration to our undergraduate program, Math for Secondary Education.

ACTUARIAL RESEARCH CONFERENCE 2024

(Left to Right: Dr. Maduranga, Mr. Ariuntugs, and Ms. Tumpa)

This past July, I had the privilege of attending the Actuarial Research Conference (ARC) 2024 at Middle Tennessee State University, supported by the Faculty Development Fund. Accompanied by my graduate students Shamima Nasrin Tumpa and Belguutei Ariuntugs, we joined a community of leading researchers and professionals in the actuarial science field. The conference, held from July 18-20, 2024, was a valuable opportunity to present our research, engage with cutting-edge developments in the discipline, and build collaborative networks.

The conference served as an ideal platform for my students to showcase their research and receive critical feedback from experts in the field.

Shamima Nasrin Tumpa presented a poster titled "Utilizing Recurrent Neural Networks for Real-Time Cryptocurrency Price Prediction and Trading Strategy Optimization." In her work, Shamima applied advanced deep learning techniques to forecast cryptocurrency prices and optimize trading strategies, offering a novel perspective on how neural networks can be applied to real-time financial modeling. The details and code for her project can be found on her GitHub, Cryptocurrency Price Prediction using RNN.
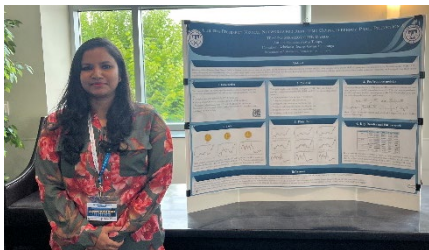
Ms. Shamima Tumpa

Belguutei Ariuntugs delivered an oral presentation titled "Optimizing Actuarial Neural Networks with Response Surface Methodology." His research explores how response surface methodology (RSM) can be used to optimize neural networks in actuarial models, enhancing the efficiency and precision of predictive models in the actuarial field. The details and the code for his project can be found on his GitHub: Response Surface Methodology-Based Hyperparameter Optimization of Actuarial Neural Networks.
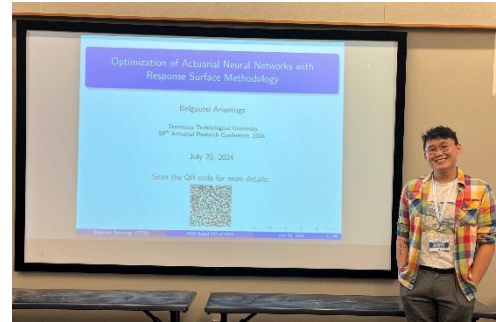
Mr. Belguutei Ariuntugs

Throughout the conference, I attended numerous workshops and presentations on the latest research methodologies, gaining new perspectives on actuarial science, especially regarding the integration of deep learning methods. These sessions provided insight into future directions for my research, enriching the way I approach both curriculum development and graduate student mentorship.

In addition to academic sessions, networking was a key aspect of our participation. We connected with researchers from institutions around the world and industry professionals, discussing potential research collaborations and sharing ideas that could lead to joint projects and publications. These discussions have not only broadened our understanding of challenges and innovations in the field but also laid the groundwork for future academic partnerships.

The knowledge gained from ARC 2024 is already being integrated into various aspects of our department's academic programs. From a teaching perspective, I plan to update the course content of my deep learning and data analysis courses, ensuring that our students are equipped with the latest methodologies and tools. On the research side, the conference discussions have opened up new directions for our ongoing work, particularly in the application of deep learning techniques to actuarial models. The feedback received at the conference has also improved my approach to mentoring graduate students, helping them better navigate their research paths and develop professionally.

Our participation in ARC 2024 has reaffirmed the importance of engaging with the broader academic community. Moving forward, I plan to foster the connections made during the conference, explore collaborative research opportunities, and continue applying the knowledge gained to enhance the department's research capabilities and academic offerings. I also hope to encourage more faculty members and students to participate in similar conferences, as such events are invaluable for professional growth and networking.

The Actuarial Research Conference 2024 was a significant experience for both my students and me. Presenting research, receiving expert feedback, and engaging with leaders in the field have greatly enriched our academic and professional trajectories. I am grateful for the support provided by the Faculty Development Fund, which made our participation possible and allowed us to represent Tennessee Tech University at this prestigious event.

Submitted by Dr. Kehelwala Dewage Gayan Maduranga

NOTE: If you are interested in learning more about the presentations or activities held at the conference, you can visit the official ARC 2024 program website: ARC 2024 Schedule of Events.
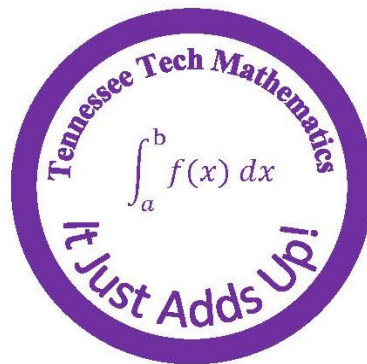
*If you wish to donate to the Mathematics Department, **please click this link** and select "Mathematics Department" from the dropdown menu. If you prefer to donate to a specific fund, please select "Other" from the dropdown menu and enter the name of the fund. Your gift is truly appreciated!*

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