

## Welcome Graduate Students

The Department of Mathematics is proud to have five graduate students this semester! We're excited to welcome Lily Dodson, who recently earned her mathematics degree from Tennessee Tech in Spring 2025, as she begins her master's program. Joining Lily are our four returning graduate students: Peyton Johnson, Solomon Bemshima Dekaa, Margaret Okailey Okai, and Aidan Woodard. Of these, Aidan has advanced far enough in the program to begin teaching, and is leading two sections of Pre-Calculus Algebra (MATH 1710-LO6 and MATH 1710-LO3). We look forward to the contributions each of these talented students will make this year!

## Meet Our Newest Lecturer



Cheryl Swafford

We're thrilled to introduce Cheryl Swafford as the newest lecturer in the Math Department. This semester, she's teaching four courses:

- MATH 1910-005 – Calculus I
- MATH 1710-LO2 & MATH 1710-018 – Precalculus Algebra
- MATH 1530-LO5 – Introductory Statistics

Ms. Swafford is currently instructing 167 Precalculus Algebra students, which makes up over half of her total student load—a testament to her dedication and impact in the classroom. Below is a brief bio to help you get to know her better.

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*I'm originally from Crossville, TN, but I now live in Mt. Juliet. In my free time, I enjoy travelling, yoga, reading, and spending time with family and friends.*

*I've been teaching for 19 years, including four years of dual enrollment courses for Roane State Community College. I've also taught at several high schools — Rhea County High School, Stone Memorial High School, and Wilson Central High School.*

*I earned both my undergraduate and Master's degrees from Tennessee Tech University. My undergraduate degree is in Secondary Education Mathematics, and I completed my Master's in Mathematics in the spring of 2004. My thesis was titled "An Order Statistics Approach for Testing Normality."*

*Tennessee Tech has always been close to my heart. As a graduate of Tennessee Tech, I've loved this school for years. I also had the chance to work full-time here during the Fall 2004 semester, just before the birth of my youngest child. That experience left a lasting impression, and I've hoped to return.*

*So, when I saw a full-time lecturer position open this year, I didn't hesitate to apply. I'm incredibly grateful for the opportunity to be back. I've always loved teaching rigorous math classes, and I'm truly enjoying my new job and the experience of teaching at the college level.*

*Life is good!*

- Cheryl Swafford

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## **New Hire: Abbigayle Taylor**

In May 2025, Abbigayle Taylor joined the Department of Mathematics as the new Administrative Services Coordinator II. This role was previously titled Administrative Associate III, but both the title and salary were recently updated as part of Tennessee Tech's university-wide compensation study.

Ms. Taylor holds both a Bachelor of Science and a Master of Arts in Counseling and Psychology from Tennessee Technological University.

In her role, Ms. Taylor plays a key part in the daily operations of the department, supporting the chair with administrative, financial, and scheduling responsibilities. She oversees budgets and procurement processes, manages office functions, maintains departmental records, assists with faculty searches, and supervises student workers—ensuring the department runs smoothly and efficiently.

We are pleased to welcome Ms. Taylor to this role and look forward to the valuable contributions she will continue to make to the department.

## **Faculty Spotlight: Meredith Hall**



*Meredith Hall*

Meredith Hall recently joined the Department of Mathematics as an adjunct faculty member after earning her master's degree from Tennessee Technological University in Spring 2025.

She currently teaches two courses at Tennessee Tech—MATH 1720-009 and MATH 1710-LO4—on Mondays, Wednesdays, and Fridays. On Tuesdays and Thursdays, she also teaches mathematics courses at Volunteer State Community College, demonstrating her dedication to student learning across institutions.

We are pleased to welcome Ms. Hall to the department and commend her commitment to teaching excellence.

## Math Club Makes a Splash at Mix and Mingle

On August 20, 2025, the Tennessee Tech University Math Club joined over 200 campus organizations at the annual Mix and Mingle event, held on the Lab Sciences Common Lawn. Despite the rainy conditions, Math Club representatives—faculty advisor Dr. Andrew Hetzel, President Kylie Laster (sophomore Math major), and Vice President Ava Clark (senior Math/Finance major)—enthusiastically welcomed nearly 100 students to their tent.

Visitors had the opportunity to learn about Math Club meetings, explore the Math major, and connect personally with the club’s leadership. One of the highlights was an interactive display explaining the four-color theorem, which sparked genuine curiosity and excitement among attendees. Many students were surprised by how engaging and fun mathematical concepts could be.

As a promotional giveaway, the Math Department’s stylus/pen proved more popular than traditional candy, adding a practical and memorable touch to the experience.

Overall, the event was a resounding success in boosting student engagement and generating new interest in the Math Club.

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*“The best part of Mix and Mingle was watching students realize they had an interest in math! Many had never imagined that learning mathematical concepts and theorems could be fun, and they were excited to join the Math Club. Our club has seen an increase in engagement since meeting all these students, and I hope to see the trend continue!”*

- Kylie Laster, Math Club President

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## Conference Participation: 2025 International FLAIRS Conference

Dr. K.D. Gayan Maduranga, along with Shamima Nasrin Tumpa —a recent graduate of the Tennessee Tech Master’s program—attended the 2025 International FLAIRS Conference. At the conference, Dr. Maduranga and Ms. Tumpa had the opportunity to present their work. Copies of each of the papers are available through the following link to the conference proceedings.

<https://journals.flvc.org/FLAIRS/issue/view/6467>

In the following reflection, Dr. Maduranga shares insights from his experience at the conference, highlighting key takeaways and the value of academic engagement at this international event.

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### FLAIRS-38 Conference Highlights: Presenting Our Research

*This past May, I had the wonderful opportunity to attend the 38th International FLAIRS Conference (FLAIRS-38), held in Daytona Beach, Florida. The conference brought*

together researchers and practitioners in AI, machine learning, and data science from across the globe. It was both energizing and rewarding to be part of that environment.

I presented my latest research paper titled “Curvature-Adaptive Learning Rate Optimizer: Theoretical Insights and Empirical Evaluation on Neural Network Training.” This work focuses on making neural network training more stable and efficient by adapting learning rates based on curvature—something I’ve been deeply exploring over the past year.

But the highlight for me was seeing my student, Shamima Nasrin Tumpa, take the stage to present our joint work: “Advanced Hybrid RNN Architectures for Real-time Cryptocurrency Forecasting and Strategic Trading Optimization.” She did an excellent job presenting how our hybrid deep learning models can be used to predict crypto markets and inform trading strategies—no small task in front of a technical audience. Watching her confidently present months of collaborative effort was truly a proud moment.



Dr. K.D. Gayan Maduranga



Shamima Tumpa

Beyond our sessions, we had the chance to attend a wide range of talks, connect with researchers in both academia and industry, and bring back new insights that will help shape our future work.

I’m very grateful to the College of Arts and Sciences Development Fund and the Department of Mathematics for supporting our travel. Their funding made it possible for us to present and participate in this conference, and I truly appreciate that investment in our research. Grateful for the experience and already looking forward to where this momentum takes us next!

—Dr. K.D. Gayan Maduranga  
Assistant Professor, Department of Mathematics  
Tennessee Tech University

## Dr. Allen’s Experience on the Board of Trustees

In the following section, Dr. Michael Allen shares his reflections on attending his first official meeting of the Tennessee Tech Board of Trustees, offering insights into the experience and the lessons he took away from it.

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*Some of you may not have heard, but I was elected last year to be the faculty representative on the Tennessee Tech Board of Trustees (BoT). Let me share my recent BoT experiences with you.*

*On Wednesday, September 24, I was invited to my first official gathering at Walton House. Deborah and I got all dressed up and joined the throng that evening. There was live music played by Dr. Oldham's favorite guitarist, Kerry "Doc" Stone. I had seen him at other gatherings before and enjoyed his repertoire this evening as well.*

*As always, there was plenty of food prepared by Chartwells Catering, though I think some were new recipes Victor just had to try.*

*The crowd included all the administration and coaches from Athletics. With Tennessee Tech's move from the Ohio Valley Conference to the Southern Conference, it was good to learn about what has been going on with our student-athletes. Of course, there was much discussion about the football team and their chances this season. Based on their current unbeaten record, expectations have been met and then some.*

*The atmosphere in President Oldham's residence was subdued, though. Because the Sunshine Law requires certain governmental meetings, records, votes, and official actions to be accessible to the public, the BoT rarely spoke to each other, and when we did, we shared stories of family, vacations, etc. In other words, September 24th was a lesson for me in "small talk".*

*The next morning, the BoT had a scheduled breakfast with the Faculty Senate. Senators and trustees enjoyed more catering from Chartwells. Trustees listened to concerns brought forth by the senators, and good discussions were had. I overheard discussions on the new general education categories, salary inversions, the foreign language department, and parking. Did someone say assigned parking spots?*

*At 8:30 am, we started the meeting. Actually, the BoT does not fully meet on scheduled meeting days until 1:30 pm. The morning session is for the individual BoT committees to meet, hear reports, discuss, and possibly vote on agenda items to present later to the full BoT meeting at 1:30 pm. This time, though, we did meet fully for five minutes. The committee to meet was the executive committee, whose duties include the evaluation and compensation of the president. They met, discussed his evaluation, made a motion to give him a pay raise, voted, and then adjourned. Immediately after that, we met as a full board, had a small discussion on his evaluation, voted on his pay raise, and then adjourned. As faculty representative, I found myself in a quandary when we voted. According to BoT policy, a trustee must be independent and impartial with regard to items brought before the BoT, like not owning stock in the construction company building the new football stadium. I decided I could not remain independent nor impartial with regard to the president's raise, so I abstained.*

*The last session of the morning was the closed-door session. This is the time when legal counsel and internal audit give their reports. Much of what was said was not confidential, but sometimes it can be, hence the closed-door session.*

*We then had a delicious lunch, catered again by Victor Kline's group, and then went in for the final session. Basically, everything that was voted on in the morning sessions by the individual committees was voted on by the BoT. There was very little discussion on these items since we had heard about them during the sessions. You see, even though the committees meet throughout the morning, the whole BoT remains in the room to listen.*

*In summary, I learned about the different committees that make up the BoT, of which I am a member of the academic committee. The executive committee works with the president, the financial committee works with the vice-president for finance and planning, and the academic committee works with the provost. There are other committees, but these were the first to meet this year. I also learned how much preparation goes into the BoT meetings. Presentations are practiced and timed. Our schedule is set to the minute for each item. When a discussion goes beyond what was expected, a move to table is the common result. It is not a means to squelch the discussion nor the topic, but to give equal time to the other pressing issues the BoT must hear and discuss.*

*At the next meeting, though, I'm bringing a pillow!*

— Dr. Michael Allen

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## Upcoming Personnel Changes

Dr. Michael Allen, who has served as Department Chair since June 2020 and is a member of the statistics faculty, will transition into a new position beginning in May 2026.

As a result, the department is actively recruiting for a new Chair (or Interim Chair) and two professor lines—one to support the statistics program and the other to replace Dr. Padmini Veerapen, who has accepted a role at another institution.

We thank Dr. Allen and Dr. Veerapen for their contributions and wish them continued success in their new endeavors.

## Let's Keep In Touch

The following is a message from Dr. Veerapen to her students and her colleagues in the math department.

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*I'll be leaving Tennessee Tech sometime in early December to start a position at Indiana University Northwest. While I'll be terribly sad to leave my students (including my former M.S. students, Jacob Copeland & Meredith Hall) and many of my colleagues, this position offers my husband the opportunity to work in a dynamic workplace; my daughter, the chance to attend some good public STEM magnet schools, and finally it offers me the opportunity to push my professional development and research program further. I would love to stay in touch - I can be reached at [padbarnett@gmail.com](mailto:padbarnett@gmail.com).*

- Dr. Padmini Veerapen

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