

Math & Stats

Fall 2025 Newsletter

Department of Mathematics and Statistics

Welcoming New Professors



Vu Thai Luan joined the Texas Tech Math faculty in the fall of 2024 as an Associate Professor. With a deep, rich and ongoing set of research grants and publications, Professor Luan adds to the reputation of the Department, and has already demonstrated his ability to shepherd graduate students toward success.

Also joining in the fall of 2024, Asim Dey started his Assistant Professorship, adding to the Statistics foundation of the Department. His success with grants and attracting grad students show his skill and effectiveness in the academic environment, and exemplify the qualities a student interested in the discipline would want from a professor while reinforcing TTU's academic Statistics footprint.



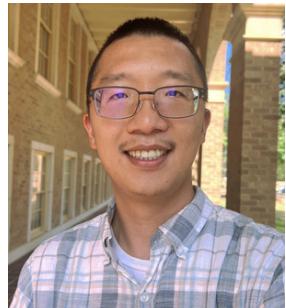
And also coming on board in fall 2024, Anh-Khoa Vo is an Assistant Professor coming to Tech from Florida A&M, and demonstrating his capacity to obtain grant funding early. Dr. Vo brings a determination with his easy-going demeanor that make him a congenial colleague and valuable member of the Mathematics faculty.

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Welcoming New Professors continued



Senwei Liang joined Texas Tech as an Assistant Professor fall 2025. After earning a Ph.D. in Applied Mathematics from Purdue in 2022, he spent three years at Lawrence Berkley National Laboratory with the U. S. Department of Energy. His research focuses on integrating advanced AI techniques with numerical algorithms to create scalable mathematical solvers for high-dimensional problems.

Welcoming New Postdoctoral Scholar Professors



Kirill Golubnichiy joined the Department the fall of 2024. Dr. Golubnichiy comes to Texas via Canada from Russia, and has been active in prestigious publications, grant proposals and conference events since his arrival.

Erhan Güler came to Texas Tech from Bartın University in Turkey fall 2024. He is an established differential geometrist and continues a long tradition of publications, outreach and research. His work bespeaks devotion and dedication to the discipline.

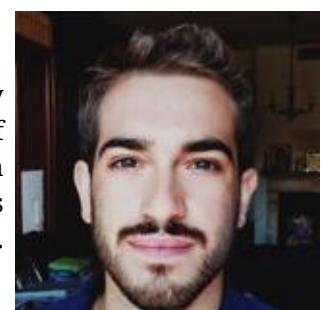


Rui Wang got her first Ph.D. in Applied Mathematics from Northeast Normal University in China in 2018 and a second in 2024 from the University of Kansas in Economics. She works with Dr.'s Lindquist and Rachev in the Mathematical Finance group, joining Texas Tech in the spring of 2025.

Andrew Soto-Levins returned to Texas fall of 2024 after his UT - Arlington undergrad days, following his Ph.D. in Lincoln, Nebraska. Working with Dr. Christensen, he is a commutative algebraist. Dr. Soto-Levins enjoys the vanishing of Ext and Tor, Bass numbers and injective dimension of local cohomology.



Giacomo Barbi has a background in Mechanical and Energy Engineering, and earned his Ph.D. from the University of Bologna in 2024. After a year as a Postdoctoral researcher in Industrial Engineering at Bologna, he joined TTU Mathematics this fall.



Yanni Zeng holds an MSc in Biostatistics from the University of Toronto and obtained her Ph.D. in 2024 from Western University. Her work lies at the intersection of applied mathematics and computational modeling, with particular emphasis on complex systems and applications in biomathematics.

Tenure and Promotion



In March the Board of Regents conferred the promotion to Full Professor for Dr. Angela Peace. She obtained NSF grants totaling more than \$1 million and has been involved with grants and initiatives of roughly \$3 million, chaired several PhD committees, won the 2021 President's Excellence in Teaching Award, done the Department Newsletter for many years, and has been in the top 3% of cited researchers in her field; she earned the promotion while at Texas Tech. But this fall brought the news that Dr. Peace has changed Tech's, leaving Texas and joining the faculty at Virginia Tech starting the spring of 2026. As Acting Chair Raegan Higgins has written, her "mentorship of students and new faculty has been exceptional." Very true and we wish her well in her next academic journey.



Also in March, the Board of Regents approved the promotion of Dr. Dermot McCarthy to Full Professor. Having recently won a Simons Foundation grant, Dr. McCarthy is a recognized authority in Number Theory, widely published in numerous prestigious journals, with a dedicated group of grad students he has and continues to mentor.



Coming from Mississippi State, Dr. Vu Thai Luan was hired in fall 2024 and granted tenure as Associate Professor this March. He brings an impressive NSF grant, two transferring grad students, is Associate Editor to Advances in Applied Mathematics and Mechanics, and has a host of regarded publications. Dr. Luan is a welcome and valued addition to the Department.

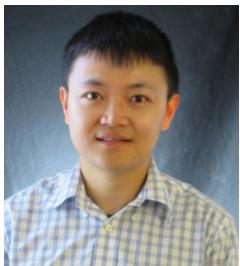
Carol Williams has been promoted from Lecturer-with-Continuing-Appointment to Senior Lecturer. She came to Tech in 1999 after earning her MS at the University of Tennessee. She actively engages her students, having them work problems during class, often in collaborative groups, to ensure they truly understand the material. Additionally, Carol Williams mentors graduate instructors, helping them adopt similar interactive strategies to make their classes more engaging and effective.



Faculty Achievements



In his first academic year at Tech, Asim Dey has secured two grants, from JPL/California Institute of Technology in December 2024 and the NSF in May 2025, worth \$70,500.



Professor Wei Guo was awarded \$42,239 for a grant from the Lawrence Livermore National Laboratory, contract # B668841 in February.



2025 has been an eventful year for Dr. Higgins, who began the year as a Women of Excellence honoree by the YWCA. In July she was named Acting Chair and on January 1, 2026 is appointed Interim Chair.

Raegan Higgins has a long and successful career obtaining grants for the department, is the current President of the Association for Women in Mathematics, in 2023 was promoted to Associate Vice-Provost for Faculty Success, and was named Integrated Scholar by the Office of the Provost in 2020.



Successfully working with the DOD Air Force/Blink Thermal, Inc., Math professors Katharine Long (PI) & Postdoctoral Scholar Jeffrey Belding along with TTU Kinesiology professor Yasuki Sekiguchi, have secured two grants, one for \$31,608 in February 2025, *Development and Validation of Rapid Contactless Core Body Temperature Measurement Capability*, and another for \$572,682 in May 2025, *Development and Validation of BlinkThermal's XTEMP for Rapid, Contactless Core Body Temperature Measurement to Prevent Exertional Heat Injury*.



In June 2025, Dr. Vu Luan received \$172,450 for the National Science Foundation grant *Innovative Time Integrators for Stiff and Highly Oscillatory Systems*.

Kirill Golubnichiy has a new research book, *New Euclidon Method of Generating Vacuum Einstein Fields*, published this August by World Scientific Connect.



Dr. Amanda Laubmeier is the PI for an NSF Career grant worth almost \$495,000. The project, *Parameter Estimation and Identifiability for Ecological Models with Seasonal Disruption*, was awarded June 2025.



In September 2024, Professor Dermot McCarthy won a \$42,000 Simons Travel Support for Mathematicians grant.



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Faculty Achievements continued



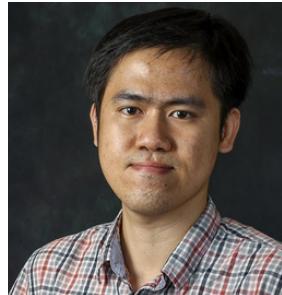
In September 2024, Dr. Magda Toda was named an Association for Women in Mathematics 2025 Fellow for her outstanding leadership in supporting women and girls in mathematics. Having received notification on her birthday, she wrote this was her "best birthday gift ever." Dr. Toda was made

Interim Chair of the department, 2015-2016,

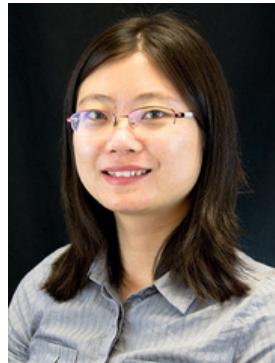
and served as Chair from 2016 until July 2025, taking off one year, 2022-2023, to serve in the Division of Mathematical Sciences for the NSF in Alexandria, Virginia. During her tenure the Math Postdoctoral Scholar program was developed, and she oversaw an increase in the department's external funding, expansion of enrollment, and departmental growth.

\$220,000 from the NSF with DMS-2409841 *Hydrodynamic models of electric charge transport: structure-preserving numerical methods*, and \$42,000 from a Simons grant. In February 2025, he was also awarded

\$50,000 from Sandia National Laboratories for the project *Ensuring a mathematically self-consistent plasma model hierarchy for high energy density systems with complex equations of state*.



Professor Anh-Khoa Vo has received an NSF grant for his project *Deep Quasi-Reversibility Inversion for Source Localization Oncological Problems* for \$46,618 in February 2025.



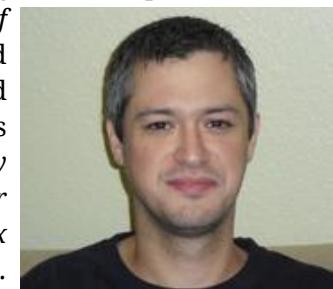
Dr. Fangyuan Zhang, working with TTUHSC researchers, secured a US Department of Defense grant for the project *Role of TBX2 in the establishment of the Prostate Cancer Pre-Metastatic Niche (PMN) in the Bone* for \$35,046 in June 2025.

In April 2024, Professor Zari Rachev was the recipient of the Barnie Rushing, Jr. Faculty Distinguished Research Award (STEM disciplines). This is an exemplary award for Texas Tech faculty,

and the Department of Mathematics & Statistics is honored with the announcement, duly earned by Dr. Rachev's extensive research and publications as a pioneer in the field of Mathematical Finance.

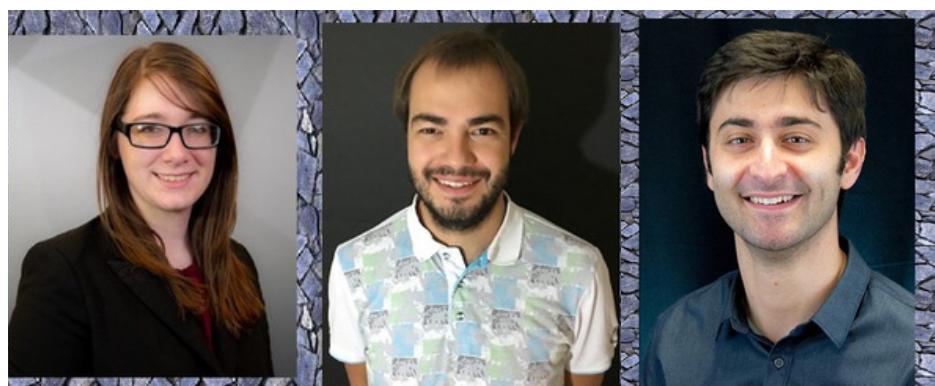


Professor Ignacio Tomas earned two grants in September 2024,



Professor Dimitri Volchenkov has formed a successful relationship with DOD Army/AVX Aircraft, garnishing two significant grants.

One in January 2024, where he worked in an interdisciplinary fashion with TTU Computer Science and Industrial, Manufacturing, and Systems Engineering departments, was a co-PI, and used the research aid of Graduate Student Alan Bohnert. The second, awarded in September 2025, is valued at \$339,811.

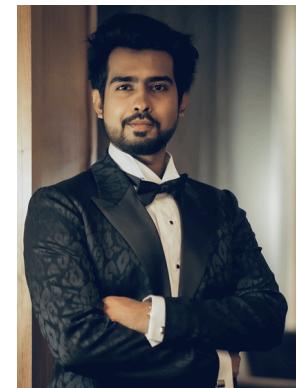


Each April University Student Housing has students nominate 10 faculty members who have demonstrated exceptional educational skills. For the 2025 Professing Excellence award, and only department on campus to have more than one faculty member selected, three professors from Mathematics and Statistics won, Jianna Davenport, Álvaro Pámpano, and Giorgio Bornia. Dr. Bornia left Texas Tech to return to his native Italy effective fall 2025.

Grad Student Achievements



In November 2024, TTU Society for Industrial and Applied Mathematics (SIAM) Chapter President Jagdish Gnawali and member Bari Hridoy both won travel grants to the AMS National Joint Mathematics Meetings held in Seattle, January 2025.



In May at the 2025 Association for Women in Mathematics Research Symposium held at the University of Wisconsin-Madison, TTU AWM Chapter President Mohammadi Ain presented the poster *Seasonality can drive co-infection dynamics of pediatric rotavirus and norovirus*.



In October of 2024, SIAM member and graduate student Rifat Rejuan presented the poster *Exact subdomain and embedded interface polynomial integration in 2D finite elements with parabolic cuts* at the 7th Annual SIAM Conference Texas-Louisiana Section, deemed **outstanding** by Conference Organizers.



In December of 2025, Huy Quang Pham is being awarded a travel grant from the American Mathematical Association worth \$1,430 to attend the Joint Mathematics Meetings held in Washington, D.C. in January, 2026.



In May of 2025, both Huy Quang Pham and Van Hoang Nguyen each received a travel award of approximately \$1,200 from the NSF to attend the NSF Computational Mathematics Meeting 2025, held May 8-9 in Salt Lake City, Utah.

Grad Student Achievements continued



In September of 2024, selected from a highly competitive international pool of thousands, graduate student Bradley Vigil was named one of only fifty 2024 Quad Fellows.

And in March of 2025, Mr. Vigil was awarded the Texas Tech University Doctoral Dissertation Completion Fellowship through the Graduate School.

Undergrad Achievements



The College of Arts and Sciences recognized four people in May of 2025 for the Distinguished Undergraduate Student Award, two of whom obtained Bachelor of Science degrees in Mathematics, Odin Schneider and Cal Vinson.

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22nd Emmy Noether Day

May 14, 2025

Dr. Amanda Laubmeier artfully managed Emmy Noether Day, 2025, but made sure these helpful participants were recognized ...

- * Jeffrey Belding, Kiril Golubnichiy, Erhan Güler, Jennifer Wang, Travis Thompson, Álvaro Pámpano, Chris Monico, Arne Ledet, Ram Iyer, and Jianna Davenport organized a variety of workshops which had the kids talking late into the afternoon
- * Raegan Higgins organized a new event, highlighting nine different TTU resources for prospective students
- * Angie Peace and Georgia Thompson put together the biggest problem solving contest yet, which meant grading complex problems for ~30 teams in under two hours
- * Isabell Martinez Server organized a new, interactive portion of the career panel which was also facilitated by ~15 undergraduate and graduate volunteers
- * Eugenio Aulisa and Andrea Chierici recruited more than twenty graduate volunteers, who mentored student work and coordinated different activities
- * Zari Rachev funded supplies for the problem solving contest, as well as student prizes
- * Technology and setup in the building was seamless thanks to Michael Kacal, Erandy Garcia's lunch order was perfect, while Joseluis kept funding running smoothly in the background



10 Trailblazing Women Who Shaped Mathematics

Denen Güler¹, Kiril Golubnichiy², Erhan Güler²

¹Lubbock High School, iMAP Programme, Junior, 79447 Lubbock, Texas, USA
²Texas Tech University, Department of Mathematics and Statistics, 79439 Lubbock, Texas, USA

Abstract

Although mathematics has long been perceived as a male dominated field, many brilliant female scholars have made groundbreaking contributions that changed the discipline. This work highlights the lasting impact of ten pioneering women in mathematics, including their life stories, their contributions, and their legacy. These women have inspired many to continue their work and have paved the way for future generations of mathematicians.

1. Maria Agnesi (1718-1799)

Maria Agnesi was an Italian Enlightenment author and mathematician. She is known for her book *Instituzioni Analitiche ad Uso della Scuola Pubblica* (Analytical Institutions for the Use of Public Schools), which was the first book to contain a clear and systematic treatment of the calculus. Her work on the calculus was highly regarded and influenced many mathematicians of the time.

2. Ada Lovelace (1815-1852)

Ada Lovelace was a British polymath and a pioneer of computing. She is best known for her work on Charles Babbage's proposed mechanical general-purpose computer, the Analytical Engine. She is often被誉为 the first computer programmer because of her work on the Analytical Engine.

3. Sophie Germain (1776-1831)

Sophie Germain was a French Enlightenment mathematician and physicist. She is known for her work on Fermat's Last Theorem and for her contributions to the theory of elasticity. She is also known for her work on the theory of numbers and for her contributions to the theory of heat.

4. Emmy Noether (1882-1935)

Emmy Noether was a German American mathematician and physicist. She is best known for her work on abstract algebra, particularly her work on the theory of rings and fields. She is also known for her work on the theory of numbers and for her contributions to the theory of heat.

5. Karen Uhlenbeck (1942-)

Karen Uhlenbeck was an American mathematician known for her work on partial differential equations. She is best known for her work on the theory of geometric measure theory and for her contributions to the theory of heat.

6. Maryam Mirzakhani (1977-2017)

Maryam Mirzakhani was an Iranian American mathematician and a professor of mathematics at Stanford University. She is best known for her work on the theory of numbers and for her contributions to the theory of heat.

7. Hypatia (c. 370-c. 415)

Hypatia was a Greek mathematician, philosopher, and astronomer. She is best known for her work on the theory of numbers and for her contributions to the theory of heat.

8. Sophie Germaine (1776-1831)

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Society for Industrial and Applied Mathematics (SIAM) TTU Chapter

SIAM Officers

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Vice President
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Karunanayaka



Treasurer
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Lamptey



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Gayanthima
Weerarathne



Events Coordinator
Vichithra Amunugama
Walawwe



2024-2025 President
Jagdish
Gnawali



In addition to the achievements of SIAM members found on page 6 above, these pictures tell the story of the eventful time the TTU Chapter members have excelled in, while having some fun in the process.



SIAM Quiz
October 31, 2024



SIAM Picnic

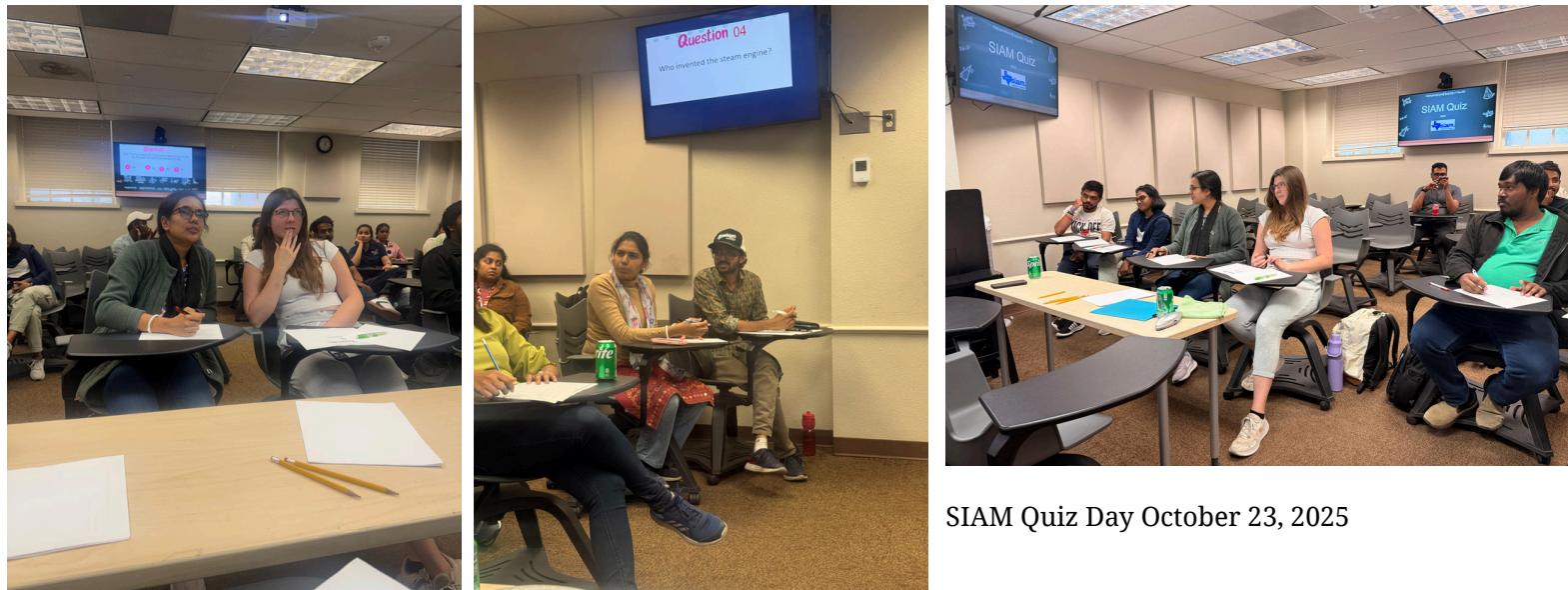


SIAM Social



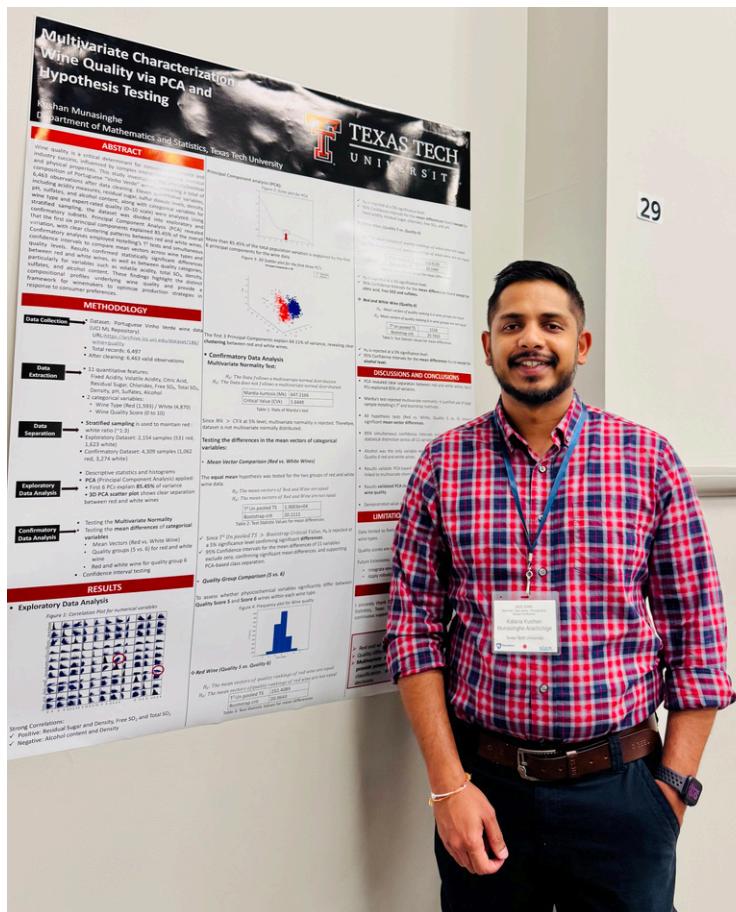
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SIAM continued



SIAM Quiz Day October 23, 2025

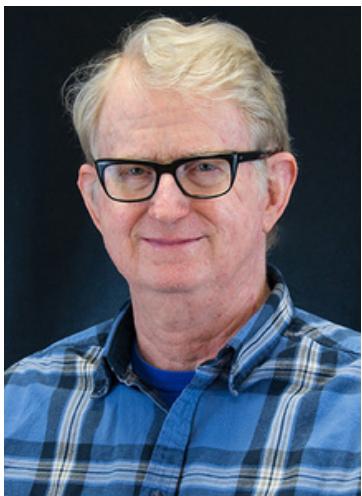
Kushan Munasinghe and Sharindi Amasha Samaraweera give posters at the SIAM NY-NJ-Penn Section Conference at Penn State, Oct 31-Nov 2, 2025



In addition to the Penn State Conference and posters this past October, SIAM had a Graduate Research Day on April 9th, 2024, with talks from SIAM members Nathan Holtman, Boluwatife Awoyemi, and Md Mahmudul Bari Hridoy. On February 21st, 2025, Dr. Charles Pueltz of the University of Houston delivered the SIAM colloquium.

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PREP Summer 2024 and 2025



Summer of 2024 and 2025 saw two more successful PREP outreach programs managed by Program Director Jim Brown, and his capable staff, particularly Isabell Martinez Server. The innovative Lecturer Jianna Davenport introduced the idea of an academic poster for the young secondary Freshmen and Sophomores to create and discuss, giving them a taste of graduate school research. But PREP is also about the educational joy of scientific, engineering and mathematical exploration, where a picture is worth a thousand words, so ...



PREP continued



Graduate Degree Recipients



MBA December 2025

Typically, here the *Math & Stats Newsletter* lists our Mathematics and Statistics Graduates, but this year, the front office has a noteworthy milestone, the MBA of Associate Director of Finance and departmental business manager Joseluís Sanchez.



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Graduate Degree Recipients

May 2024

Ph.D. Mohammad Mihrab Uddin Chowdhury
Nusrat Tabassum

M.S. Math Morgan N. Beetler
Benjamin T. Farrell
Emily D. Franklin
Jagdish Gnawali
Nathan F. Holtman
Jiajun Hoo
Radhika Kunjal Sripathi Rao
Yashu B. Lanki
Oluwagbemisola P. Oladepo

M.S. Stats Jannatul Ferdous Ema
Andras Horvath
Sudharonjon Roy
Thilini Wiskam Wijendra Karunasena

August 2024

Ph.D. Prathibha Ambegoda Liyanage
Sajal Chakroborty
Himali Dilrukshani Don Gammanpila
Jannatul Ferdous Ema
Dananjani Perera Madiwala Liyanage
G M Fahad Bin Mostafa
Charu Rajapaksha Pathiranage Dona
Aman Rani

M.S. Math Olivia D. Brubaker
James A. Francesc
Aman Rani

M.S. Stats Qiang Chen
Sams Rashid

December 2024

Ph.D. Indika Gihan G. Ilandari Dewage
Himali Sakunthala S. Kalanchige

M.S. Math Nancy Asare Nyarko
Bhathiya M. Divelgama
Blessing I. Omotade
Anna Solodukhina
Johnathon P. St Andre

December 2024 continued

M.S. Stats Sadia Afrin
Sachini Lakeesha Dinali Joseph Sebastian
Ting-Jung Lee
Thisari K. Mahanama
Thilini Piyumika W. Weerasekara
Gihani Vidumini Wickramasinghe Disanayakage



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Graduate Degree Recipients continued

May 2025

Ph.D. Drew T. Macha
Miraj Chamara Samarakkody
Mason T. Springfield

M.S. Math Sarani Kavinga Aththanayaka Mudiyanselage
Bryce A. Barnes
Ryan S. Covington
Saumya Tharindi Ganhela Pathiranage
Yifan He
Dilmi C. Hettiachchi Halpe Kankanamalage
Dhruba Pariyar Damay
Kaveendri S. Rathnayake

M.S. Stats Jagdish Gnawali
Hasini Kaushalya Herath Mudiyanselage
Kesavapriya Manoharan
Iresha Ravihari D Mudiyanselage
Maleka Kaumudi Pujari
Shashipraba N. Rajakaruna
Sharindi Amasha Samaraweera
Zuhra F. Seleima Lebbe
Woonyoung Song
Juan Zhai

August 2025

Ph.D. Sunday Esebre
Md Mahmudul Bari Hridoy
Kohl H. James
Neranjan Marasinghe
Rifat Rejuan

M.S. Math Clayton Paget
Daniel Korley
James R. Cash

M.S. Stats FNU Rashmi

December 2025

M.S. Math Shujit Kumar Bala
Kassandra Elizabeth Gallardo
Isaac Ofoe McCarthy
Chimaobi Victor Offordile
Rasheedat Oluwakemi Oladoja
Nirupa Rai
Peter Kipngetich Yegon

M.S. Stats E. L. Nuwanthika Karunathilaka
Kushani Madhubhashaini Lenora





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Department of Mathematics & Statistics™

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