



TEXAS A&M MATHEMATICS

NEWS FROM THE DEPARTMENT OF MATHEMATICS

2023-2024, Issue No. 1

HEAD LINES



Peter Howard
Department Head

I'm delighted to inaugurate this annual department newsletter in which I hope to convey at least some of the many exciting things going on in our department each year. Topics will include the introduction of new faculty, farewells to retiring faculty, and maybe some bragging about the many great things that our

current students and faculty members are up to. We'll have sections on the graduate and undergraduate programs, updates on outreach and staff, and a section on news from former students and benefactors. In short, this newsletter will include all the information I can think of that former students and friends of the department might be interested in learning about. Let's get started!

One of our first activities for 2023-2024 was to host a conference (Spectral Theory and Applications) in October to honor Distinguished Professor Peter Kuchment. More



Peter Kuchment
Distinguished Professor

than 60 people participated in this event, which was organized by Gaik Ambartsumian, Ilya Kachkovskiy and Wencai Liu. Featured speakers included Fioralba Cakoni, Lennie Friedlander, Yulia Karpeshina, Katya Krupchyk, Leonid Kunyansky, Graeme Milton, Alexei Poltoratski, Emil Prodan, Gunther Uhlmann, Boris Vainberg, Michael Weinstein and our own Gregory Berkolaiko. You can read more about the conference on the [College of Arts and Sciences website](#).

Additional fall 2023 events included our annual Derivative Bee on October 11 (organized by Todd Schrader), our High School Math Contest on November 4 (organized by Igor Zelenko), the annual series of Douglas Lectures presented November 13-15 by John McCarthy, fall Frontiers Lectures presented November 29 - December 1 by Fabrice Baudoin and our annual holiday party on December 3 at the George Hotel.



Members of the Texas A&M Department of Mathematics at the Joint Mathematics Meeting in San Francisco (January 2024).

Just after Christmas break, we hosted an annual department reception at the Joint Mathematics Meetings in San Francisco, where students and faculty members had the chance to catch up with former students and friends of the department, in some cases after many years. Our reception at this annual event is necessarily come-and-go, so it's a perennial challenge to get a photo that includes most of the group. I'm pleased we were able to capture 23 people in the image for this year!

Continuing into the spring, we somehow managed to pack four conferences into the semester: the Texas Analysis and Mathematical Physics Symposium (TexAMP), held February 9-11 and organized by Dean Baskin, Gregory Berkolaiko, Andrew Comech, Peter Kuchment, Wencai Liu, Jonas Lührmann and Minh-Binh Tran; CombinaTexas 2024, held March 23-24, organized by Chun-Hung Liu, Laura Matusevich, Jacob White and Catherine Yan; the 7th TX-LA Undergraduate Mathematics Conference, also held March 23-24 and organized by Wencai Liu and Matt Young; and the Texas Algebraic Geometry Symposium (TAGS), held April 5-7, organized by Tricia Klein and Frank Sottile.

Spring outreach activities included our Mathematics and Statistics Fair on February 24 (organized by John Weeks) and our annual Integral Bee on March 5 (organized by Todd Schrader). We also organized several colloquia and lecture series, including our spring Frontiers Lectures (Eugenia Malinnikova, February 7-9), the Foias Lectures (Camillo DeLellis, March 4, 5 and 7), the Geller Lecture (Persi Diaconis, March 27), the Maxson Lectures (David Eisenbud, April 4-5), and special colloquia by Alex Lubotzky (February 29), Stanislav Smirnov (April 10), Henri Moscovici (April 18) and Helge Holden (April 23).

On April 30, we held our first retirement reception since spring 2017, recognizing the careers of the following 17 faculty members (listed alphabetically by last name with retirement year): Harold Boas (2024), Janice Epstein (2023), Tamas Erdelyi (2023), Steve Fulling (2022), Sue Geller (2018), Bob Gustafson (2021), Bill Johnson (2023), Raytcho Lazarov (2020), Jennifer Lewis (2019), Mila Mogilevsky (2019), Joe Pasciak (2021), Gilles Pisier (2022), Jon Pitts (2018), Natarajan Sivakumar (2019), Steve Taliaferro (2024),

Paula Tretkoff (2018) and Joe Ward (2020). In total, these faculty members devoted 570.5 years of work to our department!

In sum, this past year has been absolutely busy but an absolute pleasure. I look forward to more of the same — and to sharing many more exciting newsletter issues — in the future.

CONGRATULATIONS TO AWARD-WINNING FACULTY

INTERNATIONAL AWARDS



Guoliang Yu
*Powell Chair in Mathematics and
Distinguished Professor*

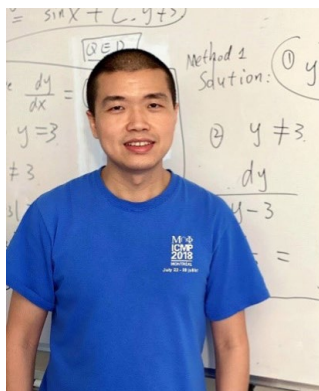
Guoliang Yu was awarded a 2023 Gauss Professorship by the Goettingen Academy of Science and Humanities, which gives outstanding scientists from around the world the opportunity to occupy Carl Friedrich Gauss's chair as a visiting scholar. This prestigious honor allowed Guoliang to give lectures at the Goettingen Academy

and participate in academy meetings.

Peter Kuchment was named a Fellow of the Asia-Pacific Artificial Intelligence Association (AAIA), which was incorporated in Hong Kong in 2021 and includes researchers from around the world in academia and industry. Peter joins our colleague Yalchin Efendiev, who was named an AIAA Fellow in 2023.



Peter Kuchment
Distinguished Professor



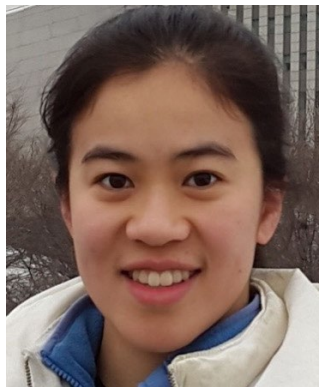
Wencai Liu
Associate Professor

Wencai Liu was named a 2024 Simons Fellow and was also one of three recipients (during the last three years) of the International Union of Pure and Applied Physics (IUPAP) Early Career Scientist Prize in Mathematical Physics. Simons fellowships are intended to support the research activities of

outstanding mathematicians by providing leave from teaching and administrative duties. The IUPAP prizes recognize the contributions of early career physicists in several areas, including mathematical physics. In addition, Wencai presented at the 2021 International Congress of Mathematical Physics in Geneva and in 2023 received a Frontiers of Science Award with his collaborator Svetlana Jitomirskaya at the inaugural International Congress of Basic Science in Beijing.

NATIONAL AWARDS

Assistant Professors **Sherry Gong** and **Alex Hening** were awarded NSF CAREER grants for the period 2024–2029. Sherry's proposal, "Gauge-theoretic Floer invariants, C^* algebras, and applications of analysis to topology," proposes applying analytic tools from physics, including gauge theory and operator algebras, to explore the geometric structure of manifolds, along with their wide range of potential applications in biology and physics.



Sherry Gong
Assistant Professor



Alex Hening
Assistant Professor

Alex's proposal, "Dynamics and harvesting of stochastic populations," proposes a study of how environmental fluctuations impact interacting species. After first constructing a general theory of the persistence of species that are influenced by diverse environmental fluctuations, he plans to build and analyze a mathematical theory of optimal harvesting that will be key for the conservation and management of both vulnerable and endangered species.

Gregory Berkolaiko

has been invited to spend September 2024 – July 2025 as a member of the Institute for Advanced Study at Princeton. He joins about 20 faculty members who receive salaries, housing and other resources so they may fully devote their energies to research. Gregory will spend his time studying spectral theory and mathematical physics and drinking lots of coffee!



Gregory Berkolaiko
Professor

Kudos to **Joseph "JM" Landsberg**, who was appointed to an Arthur Owen Endowed Professorship in Mathematics. The two Owen professorships in our department, along with two Owen faculty chairs, were created with funds donated by Arthur George and Mary Emolene Owen. JM's appointment to this position acknowledges his outstanding work on geometric questions originating in theoretical computer science.



JM Landsberg
Professor

2024 COLLEGE OF ARTS & SCIENCES FACULTY AWARDS

Faculty Excellence Award



Angie Allen

Instructional Associate Professor

Early Career Teaching Award



Ali Foran

Instructional Assistant Professor

Research Impact Award



Alex Hening

Associate Professor

2024 DEPARTMENT OF MATHEMATICS FACULTY AWARDS

Outstanding Service Award

Vanessa Coffelt

Instructional Associate Professor

Bo Zhu

Visiting Assistant Professor

Outstanding Teaching Award

Kendra Kilmer

Instructional Associate Professor

Yaroslav Vorobets,
Associate Professor

HOWDY TO NEW FACULTY

Four tenure-track faculty members and three academic professional track faculty members joined our department in fall 2024.

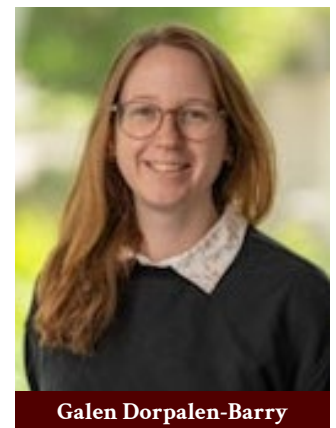


Elliot Cartee

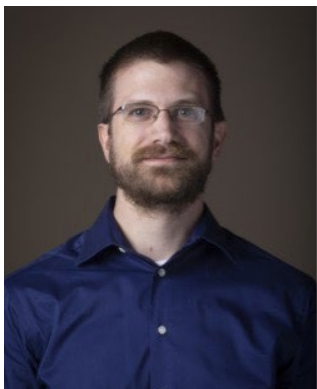
Elliot Cartee, instructional assistant professor, received his Ph.D. in 2020 from Cornell University and subsequently served as an L.E. Dickson Instructor at the University of Chicago (2020-2023). Elliot has a half-time appointment in the Math Learning Center.

Galen Dorpalen-Barry,

assistant professor, received her Ph.D. in 2021 from the University of Minnesota and has subsequently held postdoctoral positions at Ruhr-Universität Bochum (2021-2023) and the University of Oregon (2023-2024). Her research in algebraic combinatorics explores problems related to hyperplane arrangements, (oriented) matroids, posets and related fields.



Galen Dorpalen-Barry

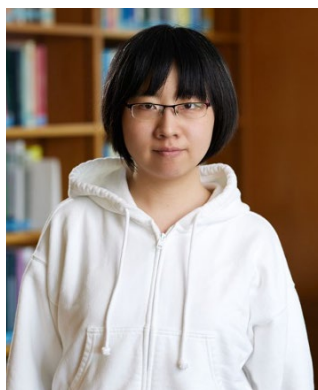


Jake Fillman

Jake Fillman, assistant professor, received his Ph.D. in 2015 from Rice University and, following a postdoctoral position at Virginia Tech, joined the faculty at Texas State University in 2019. His broad range of research interests includes mathematical physics, spectral theory

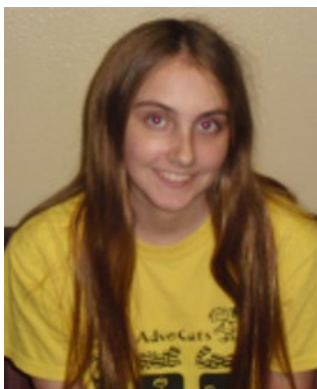
of Schrödinger operators, unitary and quantum dynamics, ergodic theory, mathematics of aperiodic order and orthogonal polynomials.

Hang “Amy” Huang, assistant professor, received her Ph.D. in 2019 from the University of Wisconsin and has subsequently held postdoctoral positions in our department (2019-2022) and at Auburn University (2022-2023). In spring 2024, she held a Viterbi Endowed Postdoctoral Fellowship at SLMATH. Her research focuses on interactions between representation theory, applied algebraic geometry and commutative algebra.



Amy Huang

Angelique Morvant, lecturer, received her Ph.D. in 2024 from our department. In 2021, she received a Houston A&M Mother’s Club Outstanding Teaching Assistant Award and in 2023, she was awarded our department’s Guseman Prize for excellence in research.



Angelique Morvant

Min Ranabhat, instructional assistant professor, received his Ph.D. in 2020 from Kansas State University and joined the faculty as a temporary assistant professor at the University of Delaware, where he taught and coordinated many courses. He has continuing research interests in analysis, partial differential equations (PDEs) and applied mathematics.



Min Ranabhat

Timo Sprekeler, assistant professor, received his Ph.D. in 2021 from the University of Oxford and has subsequently held a postdoctoral position at the National University of Singapore. His research centers around the numerical analysis of PDEs emphasizing numerical homogenization and the numerical approximation of nonlinear PDEs.



Timo Sprekeler

WELCOME, NEW VISITING ASSISTANT PROFESSORS

Runjie Hu received his Ph.D. in 2024 from Stony Brook University under the guidance of thesis advisor Dennis Sullivan. His research interests include algebraic topology, geometric topology, metric geometry, physics, algebra, L-theory, topological manifolds, Galois symmetry, algebraic varieties, metric spaces, renormalization and quantum field theory. His research mentor at Texas A&M is Zhizhang Xie.

Sebastiaan Janssens will receive his Ph.D. this fall from Universiteit Utrecht in the Netherlands under the guidance of thesis advisors Sjoerd Verduyn Lunel and Odo Diekmann. His research interests include integral and delay equations; operator semigroups, duality and perturbation theory; time delay effects in

systems and control; and stability and bifurcation of equilibria and periodic orbits. His research mentors at Texas A&M are Alex Hening and Bill Rundell.

Yi-Sheng Lim received his Ph.D. in 2023 from the University of Bath under the guidance of thesis advisor Kirill D. Cherednichenko. His research interests include homogenization, operator theory, Anderson localization and stochastic partial differential equations. His research mentor at Texas A&M is Gregory Berkolaiko.

Qiaochu Ma received his Ph.D. in 2022 from the Université de Paris Cité under the guidance of thesis advisor Xiaonan Ma and subsequently held a postdoctoral position at Penn State University (2022-2024). His research interests include differential geometry and global analysis on manifolds. His research mentor at Texas A&M is Sherry Gong.

Joshua Siktär received his Ph.D. in 2024 from the University of Tennessee under the guidance of thesis advisors Tadele Mengesha and Abner Salgado. His research interests include peridynamics, optimal control, finite element methods, the calculus of variations, harmonic analysis and enumerative combinatorics. His research mentor at Texas A&M is Alan Demlow.

Xueyin Wang received his Ph.D. in 2024 from Nankai University under the guidance of thesis advisor Jiangong You. His research interests include dynamical systems, mathematical physics and spectral theory. His research mentor at Texas A&M is Wencai Liu.

Andrea Welsh received her Ph.D. in physics from the Georgia Institute of Technology in 2019 under the guidance of thesis advisor Flavio H. Fenton. She held postdoctoral positions at Georgia Tech (2019-2020) and the University of Pittsburgh (2020-2024). Her research interests include pattern formation in biological systems. Her research mentors at Texas A&M are Alex Hening and Anne Shiu.

FAREWELL TO RETIRING FACULTY

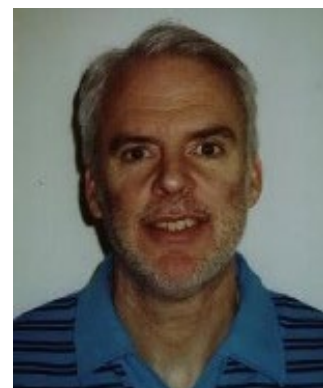


Harold Boas
Professor and Presidential
Professor for Teaching Excellence

Harold Boas, who retired in August, received his Ph.D. in 1980 from MIT and, after a postdoctoral position at Columbia University, joined our department in 1984 to pursue the study of complex variables. He soon distinguished himself as an outstanding faculty member in all aspects of our profession as an

excellent researcher, a gifted communicator and an effective member of any committee on which he served. To date, Harold has published 40 papers and mentored 10 doctoral students, including two who completed their degrees this year. From 1998 to 1999, he served as editor of the book review column of the *American Mathematical Monthly*, and from 2001 to 2003 he served as editor of the *AMS Notices*. Included among his numerous awards, honors and prizes are the Stefan Bergman Prize (1995, joint with Emil Straube), the Lester R. Ford Award (2007), the Chauvenet Prize for Mathematical Exposition (2009), the Texas Section Distinguished Teaching Award (2013), and the Paul R. Halmos-Lester R. Ford Award (2017). In 2012, Harold was named a Texas A&M University Presidential Professor of Teaching Excellence and in 2014, he was named a Texas A&M University System Regents Professor. He is a fellow of the American Mathematical Society and the American Association for the Advancement of Science.

Steve Taliaferro, who retired in spring 2024, received his Ph.D. in 1976 from Stanford University and joined our department as an assistant professor the same year, working in ordinary and partial differential equations. He published 49 research papers from 1978 to 2021. Aside from a year spent in Germany on an Alexander



Steve Taliaferro
Associate Professor

von Humboldt Fellowship at the Institute for Mechanics, Technische Hochschule (1983-1984), Steve spent his career with our department at Texas A&M.

GRADUATE PROGRAM

Graduate Students Earn Awards

Dean's Doctoral Award

Awarded by: College of Arts and Sciences

- **Emily Diegel**
Embry-Riddle Aeronautical University

Distinguished Graduate Student Award for Excellence in Teaching

Awarded by: Association of Former Students

- **Xiaoyu Su**

Graduate Merit Award Fellowship

Awarded by: College of Arts and Sciences

- **Nipun Amarasinghe**
California State University, Fresno
- **Spalding Garakani**
University of Texas, San Antonio
- **Marleigh Purgar-McDonald**
University of North Carolina, Chapel Hill

Guseman Prize

Awarded by: Department of Mathematics

Dr. Larry Guseman, a favorite professor in our department who served as graduate advisor from 1980 until his appointment in 1988 as the first director of graduate studies at Texas A&M, is remembered fondly by colleagues and students alike for his wit, wisdom, thoughtfulness and leadership. His dedication to Texas A&M and to the mathematics graduate students was complete and untiring.

- **Jordy Lopez-Garcia**
Advisor(s): Paulo Lima-Filho and Frank Sottile
"Jordy has distinguished himself in his energy and enthusiasm for service, in his leadership abilities, and in his research successes. He has almost unbounded enthusiasm for mathematical research, working on several topics at any given time."

- **Angelique Morvant**
Advisor(s): Andrea Bonito and Alan Demlow
"The innovative research she has contributed, the events she has coordinated, and the recognitions and awards she has received make her an excellent candidate for this prize. Angelique has proven herself to be a tenacious, hardworking and gifted individual who has serviced our department and the applied mathematics community at large."
- **Tushar Pandey**
Advisor(s): Tian Yang
"Tushar is one of the best young researchers in hyperbolic geometry and a rising star in quantum topology. Besides his excellent contributions to geometry and topology, Tushar also has two research papers on quantum computations."

Houston A&M Mother's Club Award

Awarded by: Department of Mathematics

This award recognizes outstanding teaching assistants.

- **Alexander Weygandt** for providing topical and instructive feedback.
- **Inyoung Ryu** for explaining complex problems in an understandable way.
- **Lawrence Dongilli** for teaching in an engaging, organized and highly informative manner.
- **Nazif Muhammad Nafi** for creating a safe space for students to learn and make mistakes.
- **Wyatt Smith** for explaining concepts clearly without talking down to students who may not understand.

Lechner Scholars Fellowship

Awarded by: Texas A&M University

The Walter W. Lechner Estate endowment was established to promote matriculation and progress of graduate students accepted into the graduate programs at Texas A&M University.

- **Bangjie Wang**
UC Berkeley
- **Khashayar Neshat Taherzadeh**
University of Victoria, British Columbia

Pearcy-Heep Endowed Graduate Mathematics Fellowship

Awarded by: Department of Mathematics

This fellowship was endowed by our colleague Carl Percy in 1998 and later augmented by the Herman F. Heep and Minnie Belle Heep Texas A&M University Foundation in 2005.

- **Andrew Biehl**
Carleton College
- **Yu-Chung Hung**
Chinese University of Hong Kong
- **Phung Nhat**
Sung Kyun Kwan University, South Korea
- **Narupachai Prairahongkun**
Chulalongkorn University
- **William Taylor**
The City College of New York
- **Chenxi Wang**
University of Wisconsin, Madison

Zinn Fellowship

Awarded by: Department of Mathematics

This fellowship was endowed by Michele D. Zinn in 2019, in memory of our beloved colleague Joel Zinn.

- **John Ajayi**
Georgia State University
- **Deven Gill**
University of Illinois, Chicago

2023-2024 Department of Mathematics Graduates

Ph.D.

December 2023

- **Srinivas Subramanian**
Dissertation: *Iterative Algorithms for Sparse and Low-Rank Recovery from Atypical Measurements*
Chair: S. Foucart

May 2024

- **Wenyuan Li**
Dissertation: *Contrast-Independent Partially Explicit Time Discretization for Multiscale Problems and its Application in Machine Learning*
Chair: Y. Efendiev
- **Zhengye Zhou**
Dissertation: *Markov Dualities via Algebraic Methods*
Chair: J. Kuan

August 2024

- **Shreedhar Bhat**
Dissertation: *p -Bergman Theory*
Chair: H. Boas
- **Laura Booton**
Dissertation: *Convergence of Moments of Twisted COE Matrices*
Chair: G. Berkolaiko
- **Ciaran Buckley**
Dissertation: *Thesis in Several Complex Variables*
Chair: H. Boas
- **Chia-Yu Chang**
Dissertation: *Maximal Border Subrank*
Chair: J. Landsberg
- **Agniva Dasgupta**
Dissertation: *Short Second Moment of L-Functions*
Chair: M. Young
- **Matthew Faust**
Dissertation: *Algebra-geometric Methods for Discrete Periodic Operators*
Chair: F. Sottile
Co-Chair: W. Liu
- **Zhaobidan Feng**
Dissertation: *Reconstructing Braided Subcategories*
Chair: E. Rowell
Co-Chair: A. Klappenecker
- **Xuehan Hu**
Dissertation: *Anti-Concentration of Random Tensors*
Chair: G. Paouris

- **Matthew Kroeshe**
Dissertation: *Low-Lying Zeros and Moments of a Thin Family of Automorphic Forms in the Level Aspect*
Chair: M. Young
- **Ting Lu**
Dissertation: *Computing the Haar State of $O(SL_q(3))$ on a Monomial Basis*
Chair: J. Kuan
- **Ryan Malthaner**
Dissertation: *Extending Matousek's Embedding Obstruction Techniques*
Chair: F. Baudier
- **Angelique Morvant**
Chair: A. Bonito
Dissertation: *The Immersed Boundary for Prestrained Plate*
Co-Chair: A. Demlow
- **Tushar Pandey**
Dissertation: *A Study of Bonahon-Wong-Yang Quantum Invariants*
Chair: T. Yang
- **Alexander Weygandt**
Dissertation: *Rapid Decay for Twisted Etale Groupoids*
Chair: Z. Xie

Master of Science

December 2023

- **Kathryn Quandt**
Mathematical Biology Track
Chair: A. Shiu

May 2024

- **Rachel Carlson**
Teaching Track
Chair: P. Lima-Filho
- **Adam Deaton**
Traditional Track, Thesis Option
Thesis: *De-Equivariantization in Fusion Categories from Quantum Groups at Roots of Unity*
Chair: E. Rowell
- **Jerik Eakins**
Traditional Track

Chair: H. Boas

- **Nichakan Loesatapornpipit**
Traditional Track
Chair: A. Shiu
Co-Chair: G. Paouris
- **Devon Maywald**
Computational Track
Chair: J. Siegel
Co-Chair: P. Howard
- **Preston Tranbarger**
Traditional Track
Chair: M. Young
- **Shuqin Zhou**
Computational Track, Thesis Option
Thesis: *Computational Biomechanics for a Standing Human Body: Modal Analysis and Simulation*
Chair: G. Chen
- **Yaoze Zou**
Traditional Track, Thesis Option
Chair: L. Matusевич

August 2024

- **Bradley Check**
Traditional Track
Thesis: *The Effects of Visual and Contextual Teaching in Undergraduate Mathematics*
Chair: P. Alonso Ruiz

Master of Science | Distance Learning

December 2023

- **Janelle Stelle**
Teaching Option
Chair: O. Shatalov
- **Julianna Adubato**
Computational Track
Chair: P. Kuchment
- **Taylor Boylan**
Computational Track
Chair: O. Shatalov
- **Chad Campbell**
Teaching Track
Chair: O. Shatalov

- **Travis Cooper**
Mathematics and Statistics Track
Chair: R. Rahm
- **Thad Gleason**
Computational Track
Chair: J. Guermond
- **John Harvey**
Computational Track
Chair: P. Kuchment
- **Heather Holden**
Teaching Track
Chair: O. Shatalov
- **Andrew Perea**
Teaching Track
Chair: F. Sottile
- **Osman Quinteros**
Teaching Track
Chair: F. Sottile

May 2024

- **Stuart Dover**
Computational Track
Chair: G. Petrova, Chair
- **Nicola Gonsalves**
Teaching Track
Chair: O. Shatalov

August 2024

- **James Bennette**
Teaching Track
Chair: P. Kuchment

New Graduate Courses

Algebraic Geometry II now has a permanent course number (Math 635) and will be taught again in spring 2025.

Representation Theory will soon have a permanent course number, which will be announced later in fall 2024.

Graduate Student Groups Elect New Leaders

AMS Student Chapter

President: **Zetyoon Kazemimoghaddam**

Vice President: **Seth Hoisington**

Secretary: **Ajay Kari**

Social Coordinator: **Shane Olson**

Treasurer: **Paul Dessaur**

2024 Algorithmic Algebraic Geometry Research Experiences for Undergraduates (REU) Group



From left, Dr. J. Maurice Rojas mentor and associate department head for graduate programs, with graduate students Weixun Deng (near Rojas) and Seongjune Han (far right).

SIAM Student Chapter

President: **Ryan Budahazy**

Vice President: **Jordan Hoffart**

Secretary: **Aditya Nambiar**

Treasurer: **Wyatt Smith**

Liaison: **Chris Pecoraro**

2024 Number Theory Research Experiences for Undergraduates (REU) Group



From left, graduating Ph.D. student Agniva Dasgupta, who will begin his first postdoctoral position at the University of Texas at Dallas this fall.

AWM Student Chapter

President: **Crystal Farris**

Vice President: **Danielle Sims**

Secretary: **Pooja Joshi**

Treasurer: **Zeytoon Kazemimoghaddam**

Diversity Committee

Organizational Leader (President): **Mansi Bezbaruah**

Reading Coordinator: **Marshall King**

Social Coordinator: **Pooja Joshi**

Communications Coordinator: **Try Tran**

UNDERGRADUATE PROGRAM

New Courses and Programs

During the last five years, we've introduced three new courses associated with evolving applications and technologies, *Probability and Computing* (Math 424; first taught in Fall 2020 as a Math 489, offered for the first time as Math 424 in Fall 2022), *Elliptic Curve Cryptography* (Math 472; new course in Fall 2019), and *Topological Data Analysis* (Math 478; new course in Fall 2020). We've also introduced three new tracks, one for our B.A. degree and two for our APMT degree:

Bachelor of Arts in Mathematics - Mathematics Teaching Emphasis

This track is for students interested in pursuing secondary school mathematics teaching. Students complete the aggieTEACH program through the College of Arts and Sciences. This degree program was first available in the Fall 2024 catalog.

Bachelor of Science in Applied Mathematics - Economics Emphasis

In this five-year fast track degree with a B.S. in Applied Mathematics and an M.S. in Economics, students complete the APMT Economics emphasis and are encouraged to continue their studies with the Economics master's degree. This 3+2 degree will be available starting in Fall 2025.

Bachelor of Science in Applied Mathematics - Cryptography Emphasis

This program, which was added to the Math Department's degree offerings in Fall 2020, includes

coursework in mathematical cryptography, number theory and algebra. Students are encouraged to take courses in adjacent fields of data science.

Celebrating Our Students



The Right Stuff

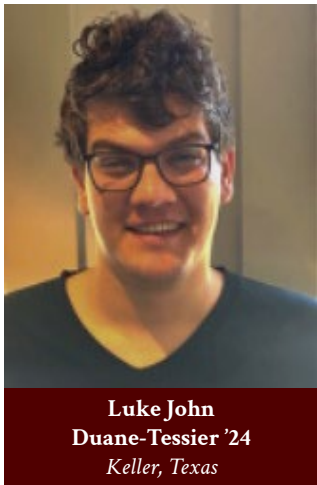
Junior mathematics major Kevin Le '25 is one of three Texas A&M students selected to receive \$15,000 scholarships from the Astronaut Scholarship Foundation honoring the nation's best and brightest scholars in STEM. [Read his story on the College of Arts and Sciences website.](#)



A Love for Logic: The Journey of Paolo Maaskant

From the Netherlands to College Station, Paolo Maaskant's path to Texas A&M tells a tale of a passion for judo, a love of mathematics and the pursuit of athletic and academic excellence. [Read Paolo's story and watch the video.](#)

Mathematics Inspires



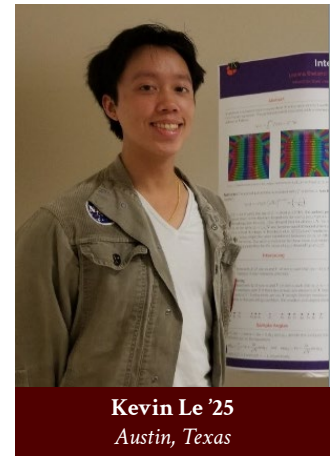
**Luke John
Duane-Tessier '24**
Keller, Texas

Luke John Duane-Tessier was an active member of the Math Club who graduated in May with a Bachelor of Science in Mathematics. While at Texas A&M, he also participated in University Bands, playing one year in the Symphonic Band, a year in Symphonic Winds, and a year in the Jazz 501 ensemble. He is

interested in complex analysis in several variables and complex geometry. He will begin work on a Ph.D. in mathematics (theoretical track) at The Ohio State University in Columbus, Ohio.

"It's partly my responsibility as a mathematician to make mathematics accessible to everyone, particularly underserved communities. The burden is on me to use the knowledge I gain through my studies to benefit not only my mathematical and university communities, but also society in general. Understanding math is useful in navigating life skills, and an understanding of statistics, statistical models, and how to interpret them is fundamental to preventing the spread of misinformation, a concern that has become more pronounced in recent years. Mathematics develops critical thinking and problem-solving skills, and is integral in physics, engineering and computing, and so plays an invisible role in everyday life in ways that may exceed a collective understanding of the subject. Mathematics is about asking questions and doing our best to answer them."

Kevin Le manages biweekly meetings and volunteers on campus and in the Bryan/College Station area at events associated with the department, such as the Mathematics and Statistics Fair and high school math competitions.



Kevin Le '25
Austin, Texas

"The rush of solving a difficult proof is a feeling that I haven't been able to replicate in any other activity. It is also really satisfying to know that the research I conduct is something that has never been discovered or may never be discovered."



Preston Tranbarger '24
San Antonio, Texas

Preston Tranbarger graduated with Bachelor of Science and Master of Science degrees in Mathematics in May 2024 and will pursue a Ph.D. at Rutgers University this fall.

"Mathematics lies at a conceptual crossroads. It provides a multitude of difficult, thought-provoking problems that are interesting to solve and simultaneously illustrate aesthetic value. It is this combination that has continually motivated my study and love of mathematics."

Undergraduate Student Organizations



Pi Mu Epsilon (Math Club)

In 2023-2024, our Pi Mu Epsilon chapter sponsored multiple events in our mathematical community. Starting with a booth for mathematical games, puzzles and brainteasers for new and returning students at Howdy Week in August 2023, students organized mathematics lectures, social events and outreach activities at local schools throughout the academic year. Undergraduate students David Cates, Kevin Le, Jenna Plute and Preston Tranbarger presented research findings at the Joint Mathematics Meetings in San Francisco in January 2024.

The 2023-2024 Math Club officers were Kevin Le (president), Preston Tranbarger (vice president), Cindy Zhuang (treasurer), Lucian Chauvin (webmaster) and Jennifer Mackenzie (outreach coordinator). For 2024-2025, the new math club officers are Kevin Le (president), McKinley Xie (vice president), Daniel Rodriguez (treasurer), Lucian Chauvin (webmaster) and Cade Dulaney (outreach coordinator). Professor Philip Yasskin is the faculty advisor.



Aggie Actuaries

The Department of Mathematics at Texas A&M is a leader in producing new analysts for the actuarial profession. More than 25% of our spring 2024 graduating class of applied mathematics majors completed our actuarial science emphasis, with graduates landing jobs at leading actuarial firms across the nation this spring, such as Aon, Willis Towers Watson, Prudent Financial and John Hancock. In recent years, our graduates have been hired by additional big-name firms, including Mercer, BlueCross BlueShield, Cigna, Traveler's Insurance, USAA, Lewis & Ellis, Tokio Marine HCC and EY. Associates from these actuarial firms actively recruit our students by attending the Sciences Career Fair each fall and spring, serving as guest speakers at Aggie Actuaries Club meetings and posting internship and full-time job opportunities at hireaggies.com.

Aggie Actuaries continues to be the premier club for Texas A&M students who are interested in learning more about actuarial science. Under the leadership of faculty advisor Todd Scrader for the last several years, the club has maintained connections with many leading actuarial firms while also consistently welcoming new firms to present at its Thursday evening meetings.

In response to the Society of Actuaries' recent changes to the actuarial exam structure, the department has created a new course to help students prepare for Exam SRM, *Statistics for Risk Modeling*, that was taught for the first time in spring 2024 by J.J. Lee. This course is a welcome addition to our curriculum that already includes courses to fully prepare students for the first two preliminary exams, Exam P (probability) and Exam FM (financial mathematics).

MATHEMATICS OUTREACH

We Inspire a Lifelong Passion for Math

The Department of Mathematics hosts a series of outreach activities designed to engage diverse audiences and foster a love for mathematics beyond the traditional classroom setting.



Peter Kuchment (left) hosted the problem-solving session this year.



Students love the Arts and Crafts table, where they learn the beginnings of geometry by building and analyzing balloon shapes.

and Games, and Statistics, which is hosted by our friends in the Department of Statistics — connect students to the world of mathematics, with prizes for those who engage with the most activities. It's a day of free, educational entertainment that promises something for everyone.

High school students have several exciting opportunities to delve deeper into mathematics. The annual [High School Mathematics Contest](#) challenges students to showcase their problem-solving skills in a

For the public, the [Mathematics and Statistics Fair](#) is an annual highlight. This event, filled with games, puzzles, arts and crafts, and captivating talks, invites families to explore the fun and beauty of mathematics and statistics. Four interactive booths — Arts & Crafts, Problem Solving, Puzzles



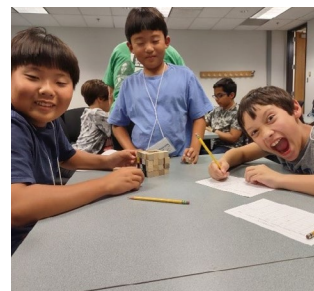
Phil Yasskin explores the four-color problem using a U.S. map at this year's Math Circle event.

competitive environment. For those with a keen interest in research, the [Program for Research in Mathematics \(PReMa\)](#) offers a unique chance to undertake individual or group projects under the mentorship of Texas A&M's esteemed math faculty. This program not only reveals the beauty of advanced mathematics but also cultivates a spirit of collaboration and friendship among participants.

Adding to the excitement are the fall and spring contests, the [Derivative Bee](#) and the [Integral Bee](#), where high school and college students race to accurately compute derivatives and integrals, highlighting speed and precision.



SEE-Math students in the lab learn augmented reality and three-dimensional rotations.



Math Circle students are engaging in a "Painted Cube" activity. An $n \times n \times n$ cube is built out of $1 \times 1 \times 1$ cubes and then is painted from the outside. How many of the smaller cubes have none, one, two, or three sides painted?

Throughout the academic year, the [TAMU Math Circle](#) brings together gifted students from the fifth to 12th grades for weekly sessions filled with stimulating math activities. These gatherings, led by faculty and graduate students, provide a platform for young minds to engage with interesting mathematical concepts in a fun and supportive

environment. Each of the Math Circle sessions show students the beauty of mathematics by introducing them to high-level mathematical ideas at an early age.

Discovery session uses interactive puzzles and logic deduction problems to engage our students' curious minds using advanced mathematics.

Middle school students are not left out, as the [Summer Educational Enrichment in Math \(SEE-Math\)](#) program offers a two-week camp for those entering sixth through eighth grades. This camp caters to interested students, providing an intensive and enjoyable exploration of mathematical concepts.

Through these [diverse outreach programs](#), the Department of Mathematics aims to inspire a lifelong passion for mathematics in students of all ages, creating a vibrant community of young mathematicians eager to explore and enjoy the wonders of their field.

Outreach in Brief

High School Math Contest | November 4

Organized by Professor Igor Zelenko, the event included about 330 students from 45 schools who tackled subject exams, best student exams, the power team exam and, of course, Professor Doug Hensley's iconic Buzz Contest. [Read about the contest on the College of Arts and Sciences website.](#)

Mathematics and Statistics Fair | February 24

Due to flooding and a power outage in the Blocker Building, which is typically home to this annual event, the entire fair was moved at the last minute to the Mitchell Physics Building next door, thanks to the determination, leadership and organizational prowess of this year's organizer, Professor John Weeks, along with the Department of Physics and Astronomy's graciousness. With the diligent work of many faculty, students and staff volunteers, the day remained a success, with activities including games, puzzles, arts and crafts, magic, problem solving and a special presentation by Gregory Berkolaiko. [Read about the Math-Stat Fair on the ArtSci website.](#)

Program for Research in Mathematics (PReMa)

The most recent session featured 10 talented students who engaged in vibrant online discussions and activities. Notably, Steven Ning, a student from Houston, presented alongside one of the program's

organizers at the Mathematical Association of America MathFest 2024 in Indianapolis, displaying the program's success and the students' achievements.

[Read about PReMa's 2024 Dolciani Mathematics Enrichment Grant on the ArtSci website.](#)

Did You Know?

Math Outreach Committee

In 2008, we created a committee to coordinate our growing number of outreach programs. Members of the 2023-2024 Outreach Committee are Peter Kuchment, David Manuel, Oksana Shatalov (chair), John Weeks and Zhizhang Xie.

Our Sponsors

Long-term sponsors of our outreach events are the Texas A&M Department of Mathematics, College of Arts and Sciences, Texas Instruments, MathWorks, Maplesoft and Curtis D. Roberts Endowment. Some of our programs are funded by grants from Mathematical Association of America, American Mathematical Society and National Science Foundation.

High School Mathematics Contest

Founded in 1991 by Arthur Hobbs, the contest has had several directors during the years, including Jeff Morgan, Mike Stecher (2002-2015), Oksana Shatalov (2016-2021), Igor Zelenko (2022-2023) and David Manuel (2024-present). For more than 30 years, this annual event has attracted hundreds of high school students to the campus for a daylong competition featuring team and individual contests and exams in subjects ranging from algebra to calculus. Texas native Luke Robitaille has consistently excelled in our High School Math Contest, winning multiple prizes over the years. Additionally, he earned gold medals in the International Math Olympiad from 2019 to 2022. He also secured victories in the "Who Wants to Be a Mathematician" competition and received several other prestigious awards. Notably, as part of the MIT team, he contributed to their consecutive victories in the Putnam Math Competition for four years.

Math-Stat Fair

First hosted in 2002, the fair was conceptualized by Peter Kuchment and Mila Mogilevsky based on a similar tradition in Wichita State University. It has

since grown from 100 participants to more than 200, with 100 faculty, graduate students, undergraduate students, and community volunteers making this annual celebration of mathematics possible. The organizers for our 2024 Math & Stat Fair were John Weeks, Patricia Alonso Ruiz, Scott Crawford (statistics), Ali Foran, Sinjini Sengupta and Phil Yasskin.

Summer Educational Enrichment in Math (SEE-Math)

Established in 2002 by Peter Kuchment, Mila Mogilevsky and Phil Yasskin, SEE-Math is a two-week day camp for 35 to 50 middle school students. Instructors include faculty, graduate students and even SEE-Math alumni who introduce abstract mathematical concepts and critical thinking skills in a hands-on format. Junior and senior counselors, most of whom are also SEE-Math alumni, check the kids in and out each day, take them from session to session, and assist the instructor with session tasks. This year, 34 students attended the camp. View details of the camps through the years, including student animations, on the [SEE-Math website](#).

Program for Research in Mathematics (PReMa)

Launched in summer 2022 by mathematicians Sherry Gong, Wencai Liu, Kun Wang and Zhizhang Xie, this initiative aims to deepen students' understanding of mathematics through collaborative research.

SMaRT (Summer Mathematics Research Training)

Our department hosted a nationally renowned outreach activity for 10 years until the COVID-19 pandemic. SMaRT Camp was a two-week boarding camp designed for advanced ninth through 12th graders. The camp quickly gained national popularity, typically receiving seven to 10 applications per available spot. The camp provided free lodging, food, instruction, and materials to all participants. From its inception in 2008, Peter Kuchment served as the director and main lecturer, with Oksana Shatalov joining as co-director and main lecturer in later years. The camp attracted exceptional students from across the United States, including Hawaii and the territory of Puerto Rico, who engaged in deep and intensive research-level activities. Graduates of the camp went on to attend prestigious universities such as Caltech, MIT, Harvard, Berkeley, and Texas A&M. Many have

since earned Ph.D.s and are now working in diverse fields from mathematics and physics to medicine and linguistics. Regrettably, due to financial and logistical challenges, SMaRT Camp has not been revived since the COVID-19 pandemic.

FOMO (Friends of Math Outreach)

Are you fearful of missing out on the exciting opportunities offered by the Texas A&M Department of Mathematics? The FOMO (Friends of Math Outreach) mailing list is your gateway to staying informed about all our fun and enriching outreach events. From the Derivative and Integral Bee contests and the High School Math Contest to the Math and Stat Fair, Math Circle, PReMa, and SEE-Math, there is always something happening that you will not want to miss. We invite parents, guardians, teachers, math coaches and other interested adults to join. Students under 18 should ask an adult to sign up on their behalf. By joining the mailing list, you will receive detailed information about each of our events, with the option to select the ones you would like best. We are excited to share the beauty of mathematics with you and to support your students in their mathematical journeys! [Sign up for the FOMO mailing list today!](#)

STAFF NEWS

We are thrilled to introduce you to the newest members of our staff team, Sean Winn and Tonya Waters.

First, let me take the opportunity to announce that Alisa Baron retired from Texas A&M on December 31, 2023, after 32 years of service. She has since been working as a part-time retiree helping to train her replacement, Sean Winn.



Sean Winn

Sean joins us as a senior administrative coordinator, bringing with him seven years of teaching operations and course scheduling from the mathematics and registrar's office at Sam Houston State University.

Contact information:

Blocker 305C
(979) 845-4178

sean.winn@tamu.edu



Tonya Waters

Tonya joins us as a business coordinator III, replacing Sharon Esparza, and bringing with her 20-plus years of accounting and banking experience with the past nine years as chief financial officer of a local company.

Contact information:

Blocker 311D
979-845-4358

tonya.waters@tamu.edu

FORMER STUDENT NEWS

Aleksandra (Ola) Sobieska, Ph.D. 2020, started this fall as assistant professor at Marshall University in Huntington, West Virginia.

Taylor Brysiewicz, Ph.D. 2020, started in 2022 as an assistant professor in the Department of Mathematics at the University of Western Ontario.

Chun-Chen (Jean) Yeh, Ph.D. 2018, is an associate professor in the Department of Mathematics at National Kaohsiung Normal University in Taiwan.

Nathan Green, Ph.D. 2018, is an assistant professor in the Department of Mathematics at Louisiana Tech University.

Nathan Melhop, M.S. 2018, graduated with his Ph.D. from Rutgers University Department of Mathematics in 2024 and is now a postdoc at Louisiana State University.

Kun Gou, Ph.D. 2012, is an associate professor in the Department of Computational, Engineering and Mathematical Sciences at Texas A&M University–San Antonio. He spent spring 2024 on sabbatical in the medical school of Harvard University.

Alejandro Chávez-Domínguez, Ph.D. 2012, received the 2024 Kinney-Sugg Outstanding Professor Award in the Dodge Family College of Arts and Sciences of the University of Oklahoma. In the more than two decades of its existence, this marked the first time the award was given to someone in the David and Judi Proctor Department of Mathematics.

Dmytro Savchuk, Ph.D. 2009, started in 2022 as chair of the Department of Mathematics and Statistics at the University of South Florida.

Gaik Ambartsoumian, Ph.D. 2006, published a monograph with World Scientific, “Generalized Radon transforms and imaging by scattered particles: broken rays, cones, and stars in tomography” (2023).

Mike Johnson, M.S. 2004, was promoted to level GS-14 at the U.S. Army Program Executive Office – Missiles and Space.



Professor Jon T. Pitts, '76, passed away on May 30. Jon received his Ph.D. in 1974 from Princeton University and joined the faculty of the University of Rochester the following year. A native Texan, Jon was determined to return to his home state, and in 1981, he moved to our department as a full professor. His research included influential results on geometric analysis and variational calculus; for example, the Algren-Pitts Min-Max Theory bears his name. In 1981, his work was recognized by a Sloan Foundation Fellowship. His teaching was also excellent, earning him a college-level Outstanding Achievement Award in Teaching from The Association of Former Students in 2000. He was a founding organizer in 1989 of the Texas Geometry and Topology Conference, which continues to be an annual event rotating among universities in Texas. He published 18 research articles, ranging in dates from 1974 to 2020, and he mentored 28 masters students and two doctoral students. Jon retired in May 2018 after 37 years with our department. Upon his retirement, he donated a substantial collection of books to our department library.

"Jon and I came to Texas A&M the same day and retired the same day. He was always kind, caring and gentle to me. My favorite memory is going to dinner at Oxford Street steakhouse every four to six weeks for years with our family members until his daughter became a teenager and Oxford Street closed. I missed seeing them but continued to enjoy seeing Jon in the department. I miss him still."

- Sue Geller



TEXAS A&M UNIVERSITY

Mathematics

THANKS AND JOIN US!

2023-2024 BENEFACTORS

**American Mathematical
Society**

Florent Baudier, Ph.D.

Kevin Bean '74

Andrea Bonito, Ph.D.

Gregory Cannon, Ph.D. '88

Elizabeth Capps '00

Combinatronics Foundation

Nysia George, Ph.D., '03

Nathan Hardwick '20

Jon Jackson '60

William Johnson, Ph.D.

Leslie Lenser '87

Marc Lewenthal '15

Nancy '73 and Jack Matz '71

Gabriel Perez '16

Southwest Actuarial Forum

Steven Taliaferro, Ph.D.

**University of Minnesota –
Regents of the University**

Help Us Grow the Texas A&M Math Tradition

Join us as we continue to build on the longstanding tradition of the Department of Mathematics at Texas A&M University with innovative research, teaching and outreach programs. Learn more about the many ways you may support our students and programs through the [Texas A&M Foundation](#) by contacting Senior Development Officer Karen Cochran at 979-845-6474 or kcochran@txamfoundation.com.