Postdoctoral Faculty Essential to Department's Success

For nearly 50 years, the department has recruited and hired recent PhD recipients as postdoctoral assistant professors (postdocs). These term-limited appointments began with a few Hildebrandt assistant professors in the mid-1970s. The postdocs were able to gain more experience in teaching, while also having time to establish their research careers working with more senior members of the faculty in the department. After their terms, most of these mathematicians went on to tenure-track positions at universities around the world.

In the mid-1980s, then chair Don Lewis expanded the program, and the department was able to recruit and hire additional three-year postdocs. The number of these new postdocs that joined the department each year varied from a low of around 10 to more than 30, depending on teaching needs. Over the years, several grants and outside funding sources have helped to support and enhance these faculty members. Beginning in 2000, the NSF VIGRE grant provided funding for numerous new postdoctoral positions for several years. NSF RTG grants have funded some of these postdoc faculty beginning in the mid-2000s, and one grant is still active. More recently, some of the postdocs have been supported with funds from private donations. Currently, there are postdoctoral positions named for James Van Loo, Donald J. Lewis, Jack Byrne, and Curtis E. Huntington.

Postdocs, faculty, and graduate students mingle at the department's end of term gathering.

These young faculty are vital to the academic and research environment of the department. Upon arrival, the new postdocs attend a week-long training program to learn the process of teaching in the department. The Michigan Calculus program has been recognized as one of the more successful

View From the Chair's Office
Anthony Bloch

I am pleased to say that the past year has been much more like a normal year at Michigan and in the department in general. It has been wonderful to see so many people in person. There are still zoom meetings, which are indeed sometimes convenient and there are changes and challenges, but hopefully everything will continue to move in a positive direction.

I would like as usual to thank everyone at UM Mathematics for all the effort they put into making our department function so well over this period. I would like to acknowledge in particular the contributions of our Associate Chairs: Andreas Blass, Joe Conlon, Sergey Fomin, Kristen Moore and Dick Canary. In addition I am grateful to Ralf Spatzier, the head of the Personnel Committee, Mattias Jonsson our Doctoral Chair, Stephen DeBacker the head of undergraduate program, Jinho Baik and Kartik Prasanna our current and previous head of admissions, and Silas Alben our head of the Applied and Interdisciplinary Mathematics Program. I would also like to thank everyone else who worked so hard on departmental committees and administration this year and for the department's dedication in general to teaching and research, including our large and important introductory program.

Our staff, led by Doreen Fussman, provide exceptional support to our faculty and students. Heather Kleber keeps me and other administrative faculty on track. Jessica Randolph leads our student services team. Our other extremely capable staff work hard to keep things running smoothly at the faculty, graduate, and undergraduate levels. Suzanne Rogers is to be commended for her diligent work on all things communication.

In terms of hiring, Dmitry Chelkak (see page 3) joined the faculty this year, and Sarah Peluse will join us from IAS in fall 2023. We also welcomed a new class of postdoctoral assistant professors and a new class of graduate students.

Many of our activities continued to thrive (mainly in person!) including our colloquium under the leadership of Zaher Hani, Wei Ho, and Lizhen Ji, our interdis-

Faculty News

Professors Jinho Baik, **Bhargav Bhatt, Tasho Kaletha,** and **Aaron Pixton** made presentations at the 2022 International Congress of Mathematicians. Baik, Kaletha, and Pixton gave invited sectional lectures, and Bhatt was a plenary speaker.

Professor Bhargav Bhatt received a 2021 Clay Research Award. Presented by the Clay Mathematics Institute, the award recognizes major breakthroughs in mathematical research. Bhatt is cited for his groundbreaking achievements in commutative algebra, arithmetic algebraic geometry, and topology in the p-adic setting. Bhatt also received the Frederic Esser Nemmers Prize in Mathematics from Northwestern University. The biennial prizes recognize top scholars for their lasting significance, outstanding achievements, contributions to knowledge, and the development of significant new modes of analysis. Bhatt is cited for his "revolutionary contributions to algebraic geometry in mixed characteristic through a new synthesis of ideas in topology, algebra, and arithmetic."

Professor Lydia Bieri has been elected a Fellow of the American Physical Society. The number of APS Fellows elected each year is limited to no more than one half of one percent of the membership. It is a prestigious recognition by her peers of her outstanding contributions to physics. The citation on her certificate states: "For fundamental results on global existence of solutions of the Einstein field equations, and for many contributions to the understanding of gravitational wave memory."

Assistant Professor Charlotte Chan has been named a recipient of a 2022 Sloan Fellowship, recognizing her work in representation theory. She is one of 118 early-career scholars who have been named Sloan Research Fellows this year.

Professor Stephen DeBacker, Arthur F. Thurnau Professor of Mathematics and the Undergrad Program Director, has received the 2022 Individual Award for Outstanding Contributions to Undergraduate Education, bestowed by the College of Literature, Science, and the Arts. His nomination cites Stephen's exceptional ability to explain "basic mathematical concepts to broad audiences," his ability to inspire love for mathematics in students, his work designing math curriculum to favor one-on-one mentoring and small group work instead of extensive lecture content, and his many contributions to the culture, outreach, and community engagement of the department.

Professor Trachette Jackson, Professor of Mathematics and University Diversity and Social Transformation Professor, has been named to a three-year appointment as the University of Michigan's inaugural Assistant Vice President for Research – Diversity, Equity, and Inclusion Initiatives. She joins the Office of the Vice President for Research, where she will work to promote and support the infusion of DEI principles in all aspects of the university research portfolio.

Professor Robert Megginson accepted the U.S. Presidential Award for Excellence in Science, Mathematics, and Engineering Mentoring (PAESMEM) on May 25. He accepted the award on behalf of the Mathematical Sciences Research Institute, recognizing MSRI's diversity, equity and inclusion efforts over the last thirty years. Megginson played key roles in MSRI's DEI efforts for three decades. He helped established MSRI's DEI committee, was a founding member and later chair of the committee, and held various leadership roles for the Institute, including as a Trustee as well as a term as Deputy Director in 2002-04 while on leave from UM.

Professor Sijue Wu, the Robert W. and Lynn H. Browne Professor of Mathematics, has been elected to the American Academy of Arts and Sciences. She is one of 261 honorees in 2022. Academy members are recognized for their accomplishments and leadership in academia, the arts, industry, public policy and research.

Faculty Promotions

Zaher Hani was promoted to professor.

Alex Wright was promoted to associate professor with tenure.

Nina White was promoted to associate research scientist.

Research Profile: Danny Forger

The research of Professor Daniel Forger uses mathematics, modeling, and simulations to understand problems in biology and medicine. He applies mathematical techniques from dynamical systems, numerical methods, and machine learning to simulate and analyze large-scale models, often using graphics processing units. Forger studies the mathematics of physiological factors which affect human performance such as sleep, proper timing by our internal daily (circadian) clock, and mood regulation. The data and information he and his colleagues collected and analyzed led to the creation of a tool used by hundreds of thousands of travelers that helps to ease recovery from jet lag (the ENTRAIN app). He has analyzed the sleep and circadian patterns of medical interns to shed light on how physiology, e.g., neuropeptide regulation, the electrical activity of neurons, and cellular biochemistry, affects human performance.

Forger has investigated mood disorders and their relation to circadian rhythms. In 2020, he utilized an app to help analyze the impact of social distancing and the pandemic lockdown on sleep and circadian timekeeping. The data collected from wearable devices can be helpful to alleviate the consequences of social isolation.

More recently, Forger led a group of researchers who investigated changes in multiple physiological systems during COVID-19 disease progression using information collected by wearable technology. The data indicate that multiple separate physiological features and autocorrelation of heart rate are significantly altered in COVID disease, and can classify symptomatic versus healthy periods. Increased heart rate and autocorrelation begin at symptom onset, while the heart rate response to activity increases soon after symptom onset and increases more in individuals experiencing coughing symptoms. This work could allow for future wearables to pre-detect COVID infection.

In a new project, funded with a $6.25M grant from the Multidisciplinary University Research Initiative, Forger leads a team of researchers from UM, the University of Arizona, and Washington State University, to uncover and investigate the underlying neurobiological mechanisms of cognitive fatigue. The focus of the investigation will be to determine how cognitive fatigue, through sleep deprivation and disruption of circadian rhythms, impacts human performance. Use of wearable technology and a mobile app will help to collect data for analysis.

New Faculty

Dmitry Chelkak joined the department in September 2022 as the M.S. Keeler Professor of Mathematics. His research interests include complex analysis, probability, and mathematical physics.

After attending St. Petersburg University for undergraduate studies, Professor Chelkak received his PhD from the St. Petersburg Department of Steklov Mathematical Institute of Russian Academy of Sciences (PDMI RAS) in 2003. He was an associate professor and senior researcher at St. Petersburg University until 2014. Professor Chelkak held visiting positions at ETH Zürich and the University of Geneva in 2014-2016, and worked at École Normale Supérieure, Paris, in 2016-2022.

Professor Chelkak's recent research involves two-dimensional lattice models at and near the critical point. Notably, he studied the Ising models of statistical mechanics, in which he showed universality and conformal invariance at criticality with Fields medalist Stanislav Smirnov. He also did research on spectral theory of one-dimensional differential operators.

Professor Chelkak has been recognized for his achievements in the field since he was awarded the "Young Mathematician" Prize from the St. Petersburg Mathematical Society in 2004. In 2008 he received the Pierre Deligne Prize in Moscow. In 2014 he received the Salem Prize from the Institute for Advanced Studies in Princeton. Professor Chelkak was an invited speaker at the 2018 International Congress of Mathematicians.

Notes from the Chair

ciplinary institute MCAIM under Lydia Bieri, and many wonderful outreach activities including Math Corps run by Sarah Koch and Stephen DeBacker. Other exciting programs which extend our outreach include the Michigan Math and Science Scholars program and the Marjorie Lee Brown Scholars.

Our faculty continued to accrue many honors including grants from the NSF and other agencies. Some of their achievements are detailed on page 2. Our alum June Huh received the Fields Medal (see page 11).

The mathematics community in our department continues to be a supportive and exciting place to work and I am optimistic that it will continue to be. I know everyone here will work to make this a reality.

In Memoriam

Gene Krause 1937-2022

Professor Emeritus Eugene Krause passed away on July 27, 2022. He was a member of the University of Michigan mathematics faculty from 1963 until his retirement in 2002. After receiving his bachelor's and doctorate degrees from the University of Wisconsin, Professor Krause joined the UM Department of Mathematics in 1963 as an instructor. He became a Professor in 1977, and served as Associate Chair for Education, from 1975 to 1979.

Professor Krause began his mathematics research career in the area of algebra but soon migrated toward mathematics education. For more than 20 years Professor Krause managed the mathematics department's education program. He taught a majority of the department's teacher education courses, counseled myriad students who went on to teach in elementary and high schools, and demonstrated that it was possible to communicate the complexities and beauty of mathematics to young students. Professor Krause conveyed the art of teaching both in the classroom and through his writing. He wrote eight books, two for middle school (with C. Brumfiel), and six for college, including *Introduction to Linear Algebra* and *Mathematics for Elementary Teachers*. He also contributed a number of articles to math-education journals and was considered a top expositor. Professor Krause's monograph, *Taxicab Geometry*, was popular with both students and teachers.

During his tenure at UM Professor Krause was a stellar teacher. His courses were quite demanding. His teaching evaluations were simply outstanding, and his commitment to his own teaching and to the teaching profession was evident. His dedication and strong teaching did not go unrecognized by the University. In 1979 he won the AMOCO Foundation Good Teaching Award; in 1982 he won the Ruth M. Sinclair Award in LSA Freshman-Sophomore Counseling; he received the College's Excellence in Education Award three times, Excellence in Concentration Advising award in 2001, and was recognized by the Panhellenic Association of Michigan as an outstanding teacher. In 1993 he was named a Fulbright Scholar and spent a year at Rhodes University in South Africa.

Professor Krause is survived by his wife of 62 years, Jane, their two sons, and numerous grandchildren and extended family members.

Graduate Program Highlights

The department has been back to in-person instruction and meetings for more than a year. This was especially impactful for our cadre of graduate students. They were able to interact and socialize, collaborate on teaching and research, and form relationships with their colleagues.

The Associate Chair for Graduate Studies, Sergey Fomin, hosted a series of weekly lunch meetings with small groups of interested graduate students. There were regular meetings with the Graduate Student Advisory Committee (GSAC), an elected body of graduate students. Several social and academic events for graduate students throughout the year proved beneficial toward creating a strong community. The students participated in pumpkin carving in October, built gingerbread houses for the end of semester gathering, and took a tour of Michigan Stadium. A department-wide picnic welcomed everyone in the fall of 2022. These bonding activities have helped renew the community spirit of the department, and enhance the academic atmosphere for students and faculty alike.

The PhD program continues it success in attracting strong students, maintaining them in the program, and seeing them through receipt of the degrees. This fall 40 new students were welcomed to the doctoral and masters programs. The success of the recent group of PhD recipients is reflected on page 6. Since 1998, over 80% of the students who begin the program have eventually finished with the PhD.

The Marjorie Lee Browne Scholars (MLB) Program continues to bring students into the program at the masters level, and it is designed to help them transition from undergraduate to PhD level work. It has been successful in attracting students from groups that are underrepresented in mathematics graduate programs, and helping them continue their pursuit of PhD degrees in mathematics. MLB Scholars include students pursuing applied mathematics as well as pure mathematics.

The Quantitative Finance and Risk Management (Quant) program welcomed 40 new students in 2022. The program's graduates continue to find success in the financial and business domains.

The majority of our graduate students directly benefit from funding established by donors and alumni. The funds are instrumental in attracting and retaining the best and brightest students.

Top: Graduate students tour the locker room at the UM Football Stadium.
Bottom: Graduate students participated in a holiday gingerbread house building project. This group (l-r: Schinella D'Souza, Chris Zhang, Havi Ellers, Lukas Scheiwiller, Teresa Yu , Jessie Conrad) designed a replica of the Math atrium, including first and second floors, chalk boards, and students feeling the pressures of finals week.

2022 Graduate Fellowships & Awards

Allen L. Shields Fellowship
Christina Athanasouli

G. Cleaves Byers Award
Willian Dana

Luther Claborn Fellowship
Swaraj Pande

Arthur H. Copeland Memorial Fellowship
Ethan Zell

Wirt and Mary Cornwell Prize
Alex Kapiamba

Cameron & John Courtney Scholarship
Quisheng Zhao

E.S. & A.C. Everett Memorial Fund
Jineon Baek

A. V. Flint Memorial Scholarship
Ram Ekstrom

Donald J. Lewis Fellowship
James Hotchkiss

Alice Webber Glover Scholarship
Chuhao Sun

Juha Heinonen Memorial Fellowship
Yili Zhang

Marjorie Lee Browne Scholars
Cyril Cordor
Ram Ekstrom
Jose Esparza Lozano
Saida Fatema
Oscar Gonzalez
Shivani Prabala
Mia Smith

Edwin Wilkinson Miller Award
Ekaterina Shchetka

National Science Foundation Fellows
Anthony Chen
Shelby Cox
Alana Huszar
Daniel Maes
Carsten Sprunger
Teresa Yu

Carroll V. Newsom Award
Cyril Cordor

Peter Smereka Thesis Award
Rishi Sonthalia

Prasad Family Fellowship
Karthik Ganapathy

President's Challenge
Michael Mueller

Rackham International Student Fellowship
Kashvi Srivastava
Quisheng Zhao

Rackham One-Term Fellows
Jack Carlisle
Ben Krakoff
Yuping Ruan
Binglin Song

Rackham Predoctoral Fellowship
Bradley Dirks
Sanal Shivaprasad
Sayantan Khan

Rackham Science Award
Samuel Boardman
Emilee Cardin
Dylan Cordaro
Cyril Cordor
Attilio Castano

Anthony Della Pella
Joanne Dong
Ram Ekstrom
Saida Fatema
Oscar Gonzalez
Gary Hu
Jonghyun Lee
Daniel Maes
Juan Morales
Moise Mouyebe
Shivani Prabala
Mia Smith
Ursula Trigos-Raczkowski
Caitlin Waddle

Gabrielle & Sophie Rainich Fellowship
Anna Brosowsky

Joel Smoller Graduate Fellowship
Moise Mouyebe

Usha Sharma Bhalla Fund
Makavika Mukundan
Sumner B. Myers Memorial Prize
Xin Zhang

Mathematics Outstanding Teaching Award
Jonathan Guzman

The Karen Rhea Excellence in Teaching Award
Jason Liang

The Mort Brown Excellence in Teaching Award
Emilee Cardin

The Pat Shure Excellence in Teaching Award
Anna Brosowsky

Golden Stapler Award
Emilee Cardin

Recent Doctorate Degrees

Christina Athanasouli completed her dissertation "*Analyzing perturbations of sleep-wake dynamics using bifurcation theory and circle maps*" under the direction of Victoria Booth and Danny Forger. She has a position at Georgia Tech.

Jack Carlisle completed his dissertation "*Equivariant complex cobordism and geometric orientations*" under the direction of Igor Kriz. He has a position at Notre Dame.

Yiwang Chen completed his dissertation "*Some results on homogeneity results for GLn*" under the direction of Stephen DeBacker. He has a position at YouTube.

Robert Cochrane completed his dissertation "*Tensor ranks and norms*" under the direction of Harm Derksen and Mattias Jonsson. He has a position at UM.

Elizabeth Collins-Woodfin completed her dissertation "*Free energy and overlaps of a spherical spin glass with an external field*" under the direction of Jinho Baik. She has a position at McGill University.

Peter Dillery completed his dissertation "*Rigid inner forms over function fields*" under the direction of Tasho Kaletha. He has a position at the University of Maryland.

Aleksander Horawa completed his dissertation "*Motivic action on coherent cohomology of Hilbert modular varieties*" under the direction of Kartik Prasanna. He has a position at Oxford University.

Yifeng Huang completed his dissertation "*Topics on equations in noncommutative rings and motivic aspects of moduli spaces*" under the direction of Michael Zieve. He has a position at the University of British Columbia.

Alana Huszar completed her dissertation "*Non-commutative rank, quivers, and tensors*" under the direction of Harm Derksen and Mel Hochster. She has a position at JP Morgan Chase.

Zhi Jiang completed his dissertation "*Tensors, cap set and invariant theory*" under the direction of Harm Derksen and Karen Smith. He has a position at Arrive Logistics, LLC.

Hyung Kyu Jun completed the dissertation "*Curried algebras and the representation theory of inverse monoids*" under the direction of Andrew Snowden. Hyung has a position at Jump Trading, LLC.

Benjamin Krakoff completed his dissertation "*Duality and Hardy spaces on Levi-flat domains with corners*" under the direction of David Barrett. He has a position at SIG, LLC.

Jason Liang completed his dissertation "*Vinberg representations and 2-descent on Jacobians of curve*" under the direction of Victoria Booth and Wei Ho.

Yunze Lu completed the dissertation "*On the coefficients of some nonabelian equivariant cohomology theories*" under the direction of Igor Kriz. Yunze has a position at the University of California, San Diego.

Christiana Mavroyiakoumou completed her dissertation "*Membrane flutter in inviscid fluid flow*" under the direction of Silas Alben and Karthik Duraisamy. She has a position at New York University.

Andrew McMillan completed his dissertation "*A note on dynamic processes*" under the direction of Silas Alben and Shaowei Ke. He has a position at Citi.

Shubhodip Mondal completed his dissertation "*Ga-perf -modules and de Rham cohomology*" under the direction of Bhargav Bhatt. He has a position at the Max Planck Institute.

Khoa Nguyen completed the dissertation "*M-theory on G2 manifold moduli to phenomenology*" under the direction of Lizhen Ji. Khoa has a position at Amazon.

Jenia Rousseva completed her dissertation "*Reduction and propagation of coherent states in Bargmann spaces*" under the direction of Alejandro Uribe.

Ryan Sandberg completed his dissertation "*Vlasov simulation with* FARSIGHT *and unlimited photon acceleration*" under the direction of Robert Krasny and Alex Thomas. He has a position at Berkeley Lab.

Nawaz Sultani completed his dissertation "*Gromov-Witten theory of non-convex complete intersections*" under the direction of Aaron Pixton. He has a position at the University of Taipei.

Jack Wakefield completed his dissertation "*Macroscopic traffic models with behavior variation driven by noise*" under the direction of Smadar Karni and Romesh Saigal.

Wijit Yangjit completed the dissertation "*Hilbert's inequality, generalized factorials, and partial factorizations of generalized binomial products*" under the direction of Hugh Montgomery and Jeff Lagarias. Wijit has a position at UM.

Eric Zhao completed his dissertation "*Neural quantum states for scientific computing: Applications to computational chemistry and finance*" under the direction of Shravan Veerapaneni and Vikram Gavini. He has a position at Amazon.

Above: The 2022 cohort of Marjorie Lee Browne Scholars, l-r: Javier Santiago, Shivani Prabala, Dania Abuhijleh, Saida Fatema, Mia Smith, Gerardo Dutan.

Commencement speaker Antareeksh Deb; Degree recipient Tenushree Rathi with Stephen DeBacker; Gradutaes Antareeksh Deb, Lillian McPhereson and Grace O'Brien at the reception.

Postdoctoral Faculty

teaching models in the country. Once trained in these skills, the postdocs provide vital instruction to the thousands of students who learn Calculus, along with other courses, while at Michigan. When their term appointment ends, these postdocs find permanent positions at other universities or within industry. The teaching skills these young faculty members developed at UM will help to enhance the academic environments in mathematics departments worldwide.

Our postdoctoral program strengthens instructional abilities while providing a rich research environment in the department. Young faculty bring new perspectives to share with colleagues. They in turn participate in the dynamic and diverse research activities of the established faculty members. On an average week, there will be over 20 seminars held in the department on various subjects. There are usually several special lectures each year featuring recognized mathematicians. Young researchers benefit from the vigorous, active, and varied scholarship occurring at Michigan.

Undergraduate Program Highlights

The department continues to thrive at the undergraduate level. Mathematics is mentoring over 1,000 major and minor students each year. In fact, for the last decade mathematics has been one of the ten largest majors (by department) in LSA and one of the three largest minors (by department). Mathematics is currently the largest minor, with 462 declared math minors. Roughly 60 percent of math majors have at least one additional bachelor's degree major.

In May 2022, the department graduated about 215 majors and 192 minors. The commencement ceremony was held in person once again, where graduates were recognized individually and received a special gift from the department (baseball caps or winter beanies, both with the Math logo!). The graduates and their families enjoyed a reception after the ceremony. A "Comeback" ceremony was also held in May 2022 that honored those students who graduated in 2020, when no commencement activities occurred (see photos on page 9).

The awards ceremony was also held in person this year for the first time since 2019. The recipients are detailed on these pages. Nearly $90,000 of award and prize money was distributed to our outstanding students. Besides the department awards, our students have received national recognition. Faye Jackson was the runner up for the 2022 Alice T. Schafer award, and received a 2022 Astronaut Scholarship. Jonah Nan also received the Astronaut Scholarship. Sophie Kriz received an honorable mention for the 2022 Frank and Brennie Morgan Prize (and just received the same recognition for the 2023 prize). Several of our graduating seniors received NSF Graduate Research Fellowships for use to continue their education.

The department also administers some direct scholarships to students of mathematics. Currently, there are 105 students receiving scholarship funds from the department, and the total amount disbursed to them is $503,250. Most awards range from $4,000 to $10,000, are used for tuition support, and are based both on need and merit.

Having students attending the UM in person for the past year has renewed the many social opportunities in mathematics. The Math Club weekly meetings are again in person, and both speakers and participants enjoy pizza after the talks. The Walking Club, open to anyone in the department who enjoys early morning treks around town, continues to meet daily, and recently incorporated academic advising opportunities during their travels. Friday kayaking is an option, weather permitting. Students are also active in academic pursuits, including the Laboratory of Geometry at Michigan (Log(M)), mathematics competitions, mentoring in Math Circles with middle school students, and participating in the summer Math Corps program with middle and high school students. These activities help to assure our students experience a wealth of academic and social opportunities during their time at UM.

2022 Undergraduate Awards and Scholarships

UM Undergraduate Mathematics Competition
Tuong Le - First Place
Alex Xu - Second Place
Ramchandra Apte - Third Place

82nd Annual Putnam Mathematics Competition
Alex Xu - First Place
Adam Earnst - Second Place
Ramchandra Apte - Third Place

Evelyn O. Bychinsky Award
Houming Chen
David Donze
Aayush Dutta
Nameer Hirshkind
Boyang Huang
Christopher Jiang
Yuqin Kewang
Nianchen Liu
Jishi Sun
Zhe Zhang

Marc Altschull Actuarial Award
Sun Youp Lee

Marylin and Stewart Gloyer Award
Jaime Annear
Jamie Debrincat
Kate Willemin

Stephen DeBacker presents the Gloyer Award to Kate Willemin.

Leon P. Zukowski Prize for Math Lab Mentoring
Jiehan Wu

Mathematics Alumni/Alumnae Scholarship
Adam Earnst

Jack McLaughlin Award in Algebra
Teo Miklethun

Wilfred Kaplan Award in Applied Mathematics
Adam Earnst

William LeVeque Award in Number Theory
Xun Wang

Frank Raymond Award in Geometry and Topology
Sophie Kriz

George Piranian Excellence in Mathematical Writing Award
Andrew Keisling

Irving Wolfson Award
Eric Huang

Lois Zook Levy Award for K-12 Teaching
Joseph Meston

Sumner B. Myers Award in Analysis
Boyang Huang

CIGNA Award
Logan Driscoll
Michael Hurlburt
Vincent Lee
Muhammad Hafizudeen Mohamad Saman

Roger Natarajan presents the D.W. Simpson Award to Adam Erbes.

D.W. Simpson Award
Adam Erbes
Amanda Snyder

KMPG Award in Actuarial Excellence
Akshay Gopinathan

Margaret S. Huntington Prize in Actuarial Research
Katherine Bednarz
Justin Berghorst
Timothy Cheek
Sawyer Gustafson
Keegan Kipke
Anika Palkhiwala
Scott Rolf
Muhamad Idlan Rusmin
Hunter Stanek
Gabe Weber

Natarajan Family Award for Actuarial Science
Joshua Gordon

Otto C. Richter Prize for Actuarial Science
Trevor Kelterborn

Outstanding Achievement in Mathematics
Jingyi Gao
Jiashu Han
Yiling Huang
Peihan Lie
Grace O'Brien
Kenneth Steinhilber
Cooper Stevens
Jun Wang
Zheng Yang
Lance Ying

Michigan Mathematics Merit Scholar Award
Scott Guest
Owen Langejans
Thomas Larsen

Rodrigo Medina Cespedes
Joshua Messing
Ananya Sridharan
James Walrad

Outstanding Graduating Seniors
John Haviland
Lillian McPherson
Chen Shang
Yingzi Yang

Wirt and Mary Cornwell Prize in Mathematics
Faye Jackson

Alan Kaylor Cline Scholarship
Warren Austin
Du Haoyu
Nikolas Stahl

Arthur H. Copeland Memorial Scholarship
Liam Clancy
Faye Jackson

L.C. Cortright Memorial Scholarship
Brian Stratton
Praneet Voleti
Martha Rose Wolf

Frank H. and Agnes A. Davis Scholarship
Joshua Gordon
Shreya Gummadapu
Abigail Hess
Amanda Krick
Andy Lee
Minki Lee
Bochem Pham
Riley Rich
Arman Vaswani
John Yang

Carl Hahn Fischer Scholarship
Akshay Gopinathan
Madison Morelli
Nicholas Muray
Ross Neuman
Sajni Patel
Ka Fung Tjin
Mary Belle Youngs

J.W. Glover Scholarship
Hao Chen
Zijian Cheng
Yubing Cui
Henry Fleischmann
Marcus Gozon
Tapio Heinonen Smith
Nameer Hirschkind
Christopher Jiang
Madhav Krishna
Sophie Kriz
Jing-Yi Liu
Theo Mikelthun
Margaret Mutch
Jonah Nan
Connor Novak
Dylan Ponman

Xun Wang
Yi Wang
Haochen Yang
Alexander Yu
Sheena Zeng

David G. Hartman Actuarial Scholarsip
Jack Langejans
Raina Zwolinski

Miner S. Keeler Scholarship
David Donze
Haoyu Du
Steven Dunne
Aayush Dutta
Adam Earnst
Andrew Gadbois
Jia Guo
Joel Greenfield
Boyang Huang
Miho Kasai
Andrew Keisling
Yuqin Kewang
Audric Lebovitz
Nianchen Liu
Xuyan Liu
Zhongqi Ma
Akash Narayanan
Andrew Nguyen
Rui Nie
Matthew Nomura
Ashvin Pai
Wen Plotnick
Humberto Rodriguez
Nathan Rosenberg

Liyang Shao
Zhihao Su
Jingruo Sun
Jishi Sun
Zhiyuan Sun
Alexander Takla
Matthew Wang
Michael Xi
Zhe Zhang

Virginia McCulloh Scholarship
Dhruv Kulshreshtha
Cassie Prokopowicz

Willilam F. Poorman Scholarship
Joseph Bednar
Katherine Bednarz
Alec Behrendt
Emma Dimilia
Matthew Dykstra
Adam Erbes
Eric Huang
Mia Ivanovic
Brandon Kirkendall
Kyle Langworthy
Leon Lin
Andrew Meyer
Scott Rolf
Max Roman
Muhamad Rusmin
Amanda Snyder
Hunter Stanek
T.J. Striblen

In May 2022 the department held a brunch for those alums who received their degrees in 2020, when no commencement ceremonies took place. In conjunction with other activities around the University, the department welcomed back more than 20 mathematics graduates from the class of 2020 who were individualy recognized and received a graduation gift.

Want Your Own Math T-Shirt?

Here is your chance to represent the UM Math Department in the stylish shirts highlighted on the next page. Complete the order form below by placing a number (signifying the quantity desired) in the appropriate boxes (sizes are standard adult), complete your address information, and return to the address at right along with your check or money order (payable to the Department of Mathematics). **T-shirts are $10 each, shipping and handling is included.**

	Blue	Pink	Yellow	Grey
Small				
Medium				
Large				
X-Large				
Onesies 12 month				n/a

Where should we mail your t-shirt?
Name:_____
Address1: _____
Address 2:_____
City:_____ State: _____ Zip:_____
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Total T-shirts Ordered: _____
E-mail Address: _____

Send this form with payment to:
The University of Michigan Department of Mathematics
T-Shirt Orders
530 Church Street, 2074 East Hall
Ann Arbor, MI 48109-1043

Online ordering and payment available at lsa.umich.edu/math/about-us/math-t-shirts.html

Where's Your Math T-shirt Been?

When you get your math T-shirt, find a fun spot to take a picture and upload it to our website lsa.umich.edu/math/undergraduates/extracurricular-activities.html. The button "Where in the World is Your Math T-shirt" has links to a Google drive to add your photo, as well as a map where you can indicate where in the world you displayed your mathematics pride: padlet.com/mathundergradoffice/worldtshirts. You can also send them by email to um.math.tshirts@gmail.com.
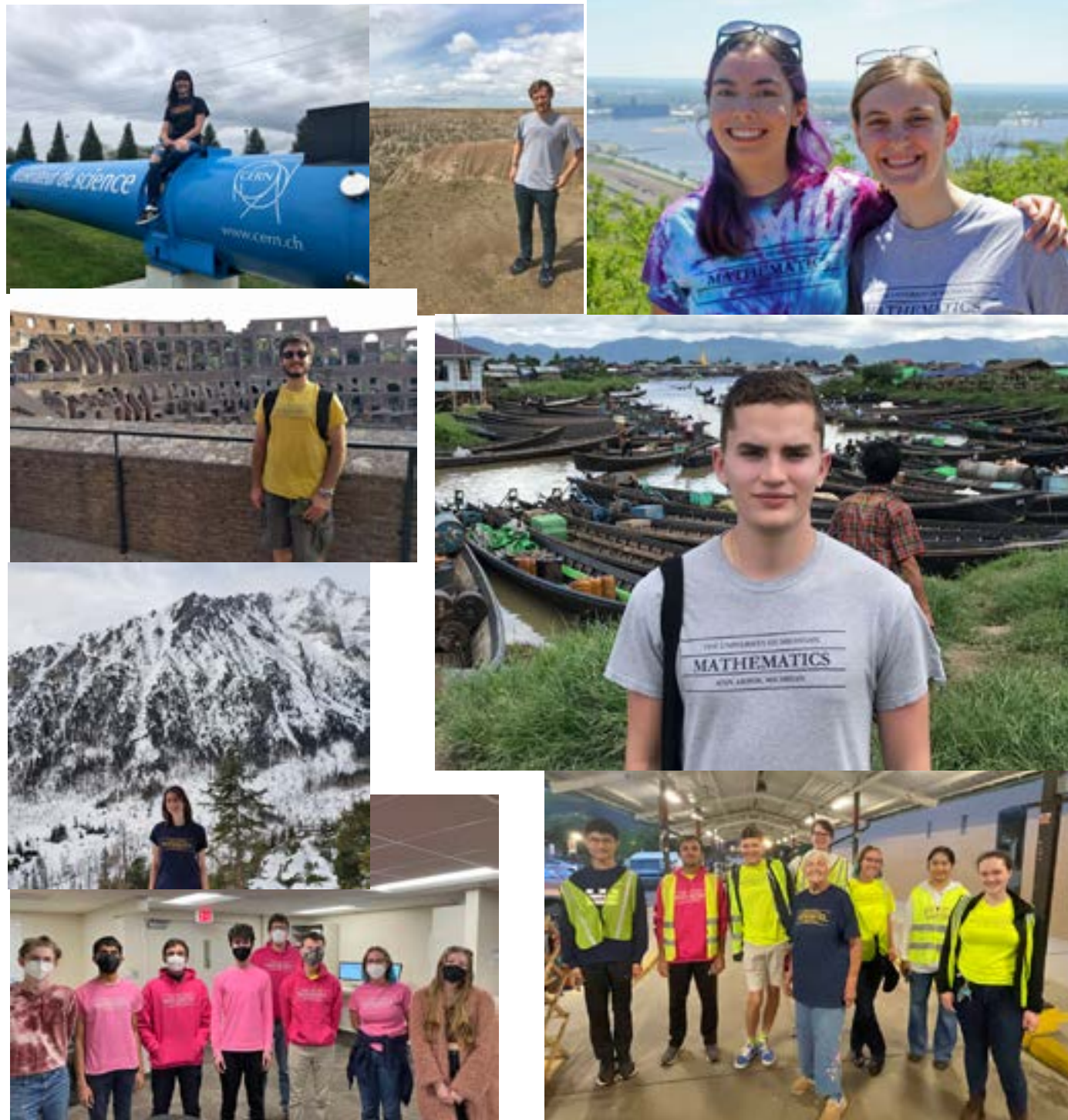
First row, l-r: Sabrina Corestti (2021) at CERN in Switzerland; David Sherman (2013) at the Badlands National Park, SD; Amanda Burcroff (2019) and Grace O'Brien (2022) in Duluth, MN. Second row, l-r: Mark Greenfield (2021) in Rome Italy; Juan Sebastián Mesa (2018) at the Inle lake in Burma; Third Row: Natalia Jenuwine (2020) enjoying mountainous terrain; Fourth Row: Faye Jackson, Akash Nayaran, Dhruv Kul, Evan Cohen, Stephen DeBacker, Steve Dunne, Abigail Hess, and Cassandra Prokopowicz display their pink regalia in a classroom; Walking club at the Ann Arbor Farmer's Market with vendor Carol (front), purveyor of snowcones and blueberries.

Alumni Highlights

June Huh Received Fields Medal

In the summer of 2022, the department was excited to learn that June Huh, a 2014 PhD graduate under the direction of Mircea Mustaţă, was named a 2022 Fields Medalist. One of the highest honors in mathematics, the Fields Medal is presented by the International Mathematical Union. Currently a professor at Princeton University, Huh is cited "For bringing the ideas of Hodge theory to combinatorics, the proof of the Dowling–Wilson conjecture for geometric lattices, the proof of the Heron–Rota–Welsh conjecture for matroids, the development of the theory of Lorentzian polynomials, and the proof of the strong Mason conjecture."
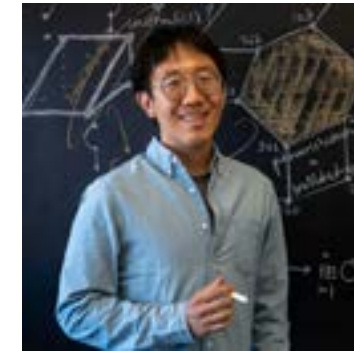
After recieiveing his PhD, Huh was a Fellow at the Clay Mathematics Institute from 2014-2019. He joined the Insitute for Advanced Study at Princeton as a Veblen Fellow (2014-2017), Visiting Professor (2017-2019) and Fernholz Visiting Professor (2019-2020). He was a Professor at Stanford University before joining the faculty at Princeton.

Huh received early recognition for his mathematical work. From UM he received the Sumner Myers Thesis Prize and the Wirt and Mary Cornwell Prize in mathematics. He was an invited speaker at the International Congress of Mathematicians in 2018 and received the New Horizons Mathematics Prize in 2019. He was recently named a MacArthur Fellow.

Further information about these awards, Huh's career, and interesting videos about his work, can be found on the following web pages:
mathunion.org/imu-awards/fields-medal/fields-medals-2022
macfound.org/fellows/class-of-2022/june-huh

Alums Achieve FSA Status

Nabil Ahmed and Kah Jun Lim, both of whom graduated in 2019 with BS degrees in mathematics concentrating in actuarial science, became Fellows of the Society of Actuaries in December 2021. Earning an FSA just two and a half years after graduating is rare. Nabil joined AETNA as an Actuarial Analyst, and in fall 2021 enrolled at Stanford University to pursue a Master's degree in data science. Kah, who quadruple-majored in actuarial math, computer science, data science, and statistics, with a minor in complex systems, joined Central Bank of Malaysia as an insurance regulator.

Emily Witt Receives Michler Prize

Emily Witt, a 2011 PhD graduate under the direction of Mel Hochster, received the 2022 Ruth I. Michler Prize from the Association for Women in Mathemaitcs and Corenll University. Witt is cited for "her research accomplishments in commutative algebra. Her results on local cohomology modules based on applications of invariant theory have been groundbreaking, striking, and unexpected. Her techniques are innovative and broadly applicable. Witt will use the award to pursue a research project at the intersection of commutative algebra, algebraic geometry, and singularity theory. The project's title, *Invariants of Singular Plane Curves*, is a tribute to the paper with the same title published by Ruth I. Michler posthumously."

After receiveing her PhD, Witt was a Dunham Jackson Assistant Professor at the University of Minnesota, a Postdoctoral Fellow at the Mathematical Sciences Research Institute, and a Research Assistant Professor at the University of Utah. Since 2015, she has been a faculty member at the University of Kansas, where she was promoted to Associate Professor in 2020. She currently holds the institution's Keeler Intra-University Professorship, under which she is collaborating with computer science faculty on the use of proof assistant software to develop formal proofs.

Witt is involved in a number of initiatives promoting diversity in the mathematical community. She co-organized the first Women in Commutative Algebra research collaboration workshop, and co-directed, with UM Alum Daniel Hernández, an REU program in algebra and cryptography serving students from underrepresented groups.

Michigan Reception

2023 Joint Mathematics Meetings

Thursday, January 5, 2023
6 pm to 7:30 pm

Boston Copley Marriot
Provincetown Room

RSVP to math.mich@umich.edu

All are welcome! See you in Boston!

Watch for our email on March 15, 2023!