Integral

Spring 2023, Volume 12
Mathematics Department at MIT
Massachusetts Institute of Technology

NEWS FROM THE MATHEMATICS DEPARTMENT AT MIT

Dear Friends,

Greetings from sunny Cambridge. I've been so busy lately that I let ChatGPT write this letter for me. (Only kidding. Or am I? Let's see whether you can tell!) In fact, all of us in the department have been quite busy these past few years; it seems to be the "new normal." Many new faculty, new staff, a new MIT President, and like every year, new students. It is on this last group — our treasured students — that we will give some additional focus in this issue of *Integral*.

New people

First, we are delighted to welcome our newest faculty member: Daniel Álvarez-Gavela, who works in algebraic topology. We also note the retirement of one of our beloved senior faculty, Victor Guillemin. You can read more about them inside.

Two of our key staff retired this year. Dennis Porche served as assistant to five department heads, including me. His vast knowledge of MIT protocols and other arcana, as well as his gentle, unassuming nature, will be greatly missed. Fortunately, we've been able to hire the highly capable Sara Turk as my new assistant. Barbara Peskin ran the Math Academic Services office for the past decade. A former PhD from our department, she brought a rare mix of mathematics knowledge, managerial acumen, and passion for our students to her role. Happily, Theresa Cummings, who worked skillfully in that office under Barbara's supervision, has been promoted to become our new Academic Officer. Several other staff have joined us in recent years: Kitia Gonzaga (Receptionist), Toni Barbosa and Jay Carrasco (IT support), Rebecca Campobasso (Events), André Lee Dixon (Math programs), Ting Ting Li and Julian Yun (Financial), Hailey Lloyd and Sapphire Tang (Academic Services). We are thankful for all of their assistance.

Student matters

As Associate Head for Education Bill Minicozzi points out in his letter inside, the numbers of math majors and enrollments in math subjects are both hitting significant new highs. Naturally, we are pleased, but this success brings challenges. Faculty must find ways to teach and advise more students effectively while preserving time for their own research and personal lives. To accommodate students with a variety of mathematical preparations when entering MIT, we are adjusting our curriculum to provide more "on-ramps" for our majors into upper-level subjects. In addition, several student groups have sprung up in the department recently to provide a greater sense of community among our majors and graduate students. More on all that inside.

One Institute-wide development is likely to affect us: MIT graduate students voted to unionize. Hopefully, this outcome will bring the students a well-deserved improved quality of life. Negotiations are just beginning and disagreements may arise. We depend heavily on our graduate student teaching assistants in our large math classes, so a work disruption would be problematic. Fingers crossed.

Every four years, a large number of mathematicians gather at the International Congress for the awarding of the Fields medals and other prizes, and to listen to a select group of plenary and invited speakers.

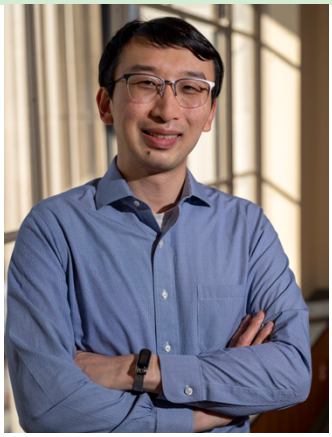
The 2022 ICM was to be held in July in St. Petersburg, but was held virtually instead because of the ongoing war. Our department was well represented at this virtual ICM with Toby Colding, Larry Guth, and Scott Sheffield as plenary speakers, and Semyon Dyatlov and Elchanan Mossel as invited speakers. To make it more enjoyable for the speakers and the local mathematical community, we organized a two-day mini ICM at MIT with speakers from Harvard and MIT. Our Simons Building was bursting with mathematics.

Lastly, a sad note as we were going to press. Peter Baddoo, one of our applied mathematics instructors, passed away suddenly on February 15 at the age of 29 from cardiac arrest. Peter was a lively, joyful young man, a gentle soul with a kind spirit and a ready smile. He will be sorely missed by all who knew him

— Michel Goemans

Faculty Updates

Jörn Dunkel was promoted to Full Professor. Jörn's group is developing new mathematical models and inference techniques that make it possible to identify how microscopic biological variables determine the macroscopic physical properties of tissues and other multicellular systems.



Andrew Lawrie and **Yufei Zhao** were promoted to Associate Professor without Tenure. Andy works on understanding the asymptotic dynamics of solutions to partial differential equations. Yufei works on problems in extremal combinatorics, spectral graph theory, and discrete geometry.

Daniel Álvarez-Gavela Joins Faculty

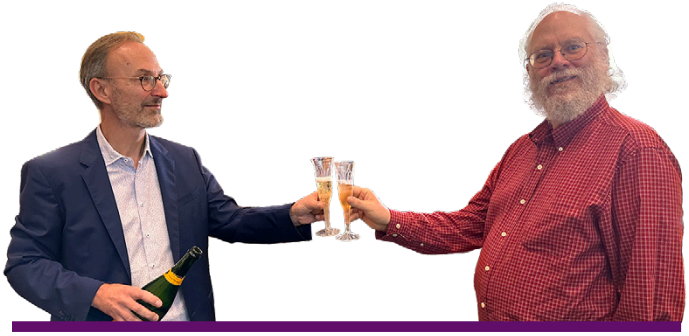
Daniel "Dani" Álvarez-Gavela joined us this year as an assistant professor, following postdoc appointments at the Institute for Advanced Study, Princeton, and MIT. He received his PhD in 2018 from Stanford with Yakov Eliashberg. Dani's research is in symplectic and contact topology, emphasizing connections with algebraic K-theory, parametrized Morse theory, and the philosophy of the h-principle.

A recipient of the 2019 Vicent Caselles Mathematics Research Prize, he showed that the problem of simplifying the singularities that appear in wavefronts is flexible, i.e., that the simplification is possible at the geometric level if and only if it is possible at the homotopical level. The singularities of wavefronts are a familiar object, sometimes known as caustics, which can be visualized by the wrinkles of light that appear when light is reflected or refracted by a medium.

Dani co-organizes the Symplectic Seminar and the Geometry and Topology Seminar, and is active on the department's Diversity and Community Building Committee. He has been running a volunteer program with grad student Marisa Gaetz in which department members teach mathematics at nearby correctional facilities.

Tristan Collins, left, received the Class of 1948 Career Development Professorship. He works at the intersection of geometric analysis, partial differential equations, and algebraic geometry. **Jeremy Hahn** received the new Rockwell International Career Development Professorship. His research is in algebraic topology and homotopy theory emphasizing structured ring spectra.

Peter Shor Receives Two Major Awards



Peter Shor PhD '85 received the 2023 Breakthrough Prize in Fundamental Physics. He shares this prize with Charles H. Bennett, Gilles Brassard, and David Deutsch, for their foundational work in quantum information.

Peter also received MIT's 2022–2023 James R. Killian Jr. Faculty Achievement Award, the highest honor the Institute faculty bestows upon one of its members each year. He is giving the Killian lecture on March 9 at 4:30pm in 10-250.

Recent Awards

Bonnie Berger was named a SIAM Fellow "for pioneering work in computational molecular biology, including comparative and compressive genomics, network inference, genomic privacy, and protein structure prediction."

Roman Bezrukavnikov was elected to the AAAS.

Semyon Dyatlov received the inaugural AMS-EMS Mikhail Gordin Prize for his work on quantum chaos, scattering theory and, in particular, differentiable dynamical systems.

Pavel Etingof was elected to the European Academy of Sciences and Arts.

Michel Goemans received the Steele Prize for Seminal Contribution to Research with David Williamson PhD '93 for "Improved Approximation Algorithms for Maximum Cut and Satisfiability Problems Using Semidefinite Programming."

Steven Johnson received the student-nominated Teaching with Digital Technology Award, for his class 18.369: Mathematical Methods in Nanophotonics.

Tom Leighton PhD '81 and Akamai CEO received the IEEE John von Neumann medal "for fundamental contributions to algorithm design and their application to content delivery networks."

George Lusztig was awarded the Wolf Prize in Mathematics "for groundbreaking contributions to representation theory and related areas." He donated most of his prize money to support Ukraine.

Dor Minzer received the EATCS Presburger Award for Young Scientists "for his deep technical contributions towards resolving the 2-to-2 Games Conjecture."

Tomasz Mrowka with Peter Kronheimer received the AMS Steele Prize for Seminal Contribution to Research for their joint paper Gauge Theory for Embedded Surfaces.

Richard Stanley received the AMS Steele Prize for Lifetime Achievement.

Bjorn Poonen received the AMS Joseph L. Doob Prize for his 2017 book Rational Points on Varieties, in the series Graduate Studies in Mathematics.

Lisa Sauermann received a Sloan Research Fellowship, and the Department's Edmund F. Kelly Research Award.

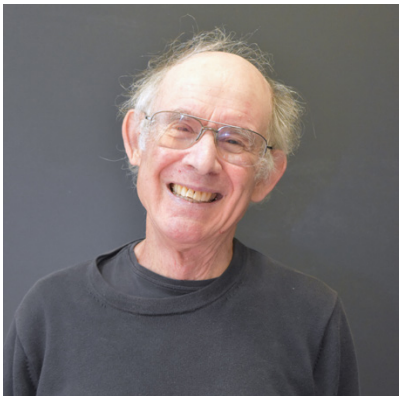
Scott Sheffield and former MIT postdoc and instructor **Jason P. Miller** were awarded the AMS Leonard Eisenbud Prize in Mathematics and Physics.

Wei Zhang was named a Simons Investigator by the Simons Foundation.

Yufei Zhao received the Department's Edmund F. Kelly Research Award.

More awards on math.mit.edu/about/awards

Victor Guillemin Retires after 56 Years



Victor Guillemin joined our faculty in 1966 following his PhD from Harvard in 1962 with Shlomo Sternberg. Victor has made fundamental contributions to microlocal analysis, symplectic group actions, and the spectral theory of elliptic operators on manifolds.

A dedicated PhD supervisor, Victor advised 47 students and has 237 descendants. His first student was Marty Golubitsky in 1970 and his last student was He Chen in 2017. "To them and to the students in between, I owe everything that has made my life in mathematics worthwhile," says Victor, in accepting his 2003 AMS Leroy P. Steele Prize for Lifetime Achievement. He is especially known for the support he gave to the careers of young women mathematicians.

Victor is a Fellow of the American Academy of Arts & Sciences and a member of the National Academy of Sciences. He received the 1987 Teaching Award of the MIT Graduate Student Council and the 1994 School of Science Prize for Excellence in Graduate Student Education. He is the author or co-author of numerous books and monographs, including a widely used textbook on differential topology, written jointly with Alan Pollack.

In his retirement, he goes for daily long walks and works over Zoom with many of his former students.

Past Department Members Recognized

Our former faculty colleague **Daniel Spielman** PhD '95 was awarded the 2023 Breakthrough Prize in Mathematics for "breakthrough contributions to theoretical computer science and mathematics, including to spectral graph theory, the Kadison-Singer problem, numerical linear algebra, optimization, and coding theory."

Former NSF postdoc **Maggie Miller** earned a Maryam Mirzakhani New Frontiers Prize for her work on fibered ribbon knots and surfaces in 4-dimensional manifolds.

2022 PhDs

Araminta Amabel, "Genera via Deformation Theory and Supersymmetric Mechanics" with Mike Hopkins (Harvard)

Morris Ang, "Integrability in random conformal geometry"with Scott Sheffield

Juncal Arbelaiz, "Optimal distributed control and estimation for systems with spatiotemporal dynamics" with Ali Jadbabaie

Robert Burklund, "Multiplicative structures on Moore spectra" with Mike Hopkins (Harvard)

Yibo Gao,"Symmetric structures in the weak and strong Bruhat orders" with Alex Postnikov

Linus Hamilton, "Applications and limits of convex optimization" with Ankur Moitra

Kai Huang, "K-stability of Log Fano Cone Singularities" with Chengyang Xu

Andrei Ionov, "Tilting sheaves for real groups and Koszul duality" with Roman Bezrukavnikov

Sungwoo Jeong, "Linear algebra, random matrices and Lie theory" with Alan Edelman

Pakawut (Pro) Jiradilok, "Inequalities and Asymptotic Formulas in Algebraic Combinatorics" with Alex Postnikov

Chun Hong Lo, "Gromov-Witten Invariants of Blow Ups of P2 using Logarithmic Geometry" with Davesh Maulik

Ashwin Narayan, "Distortion Metrics for Biological Data" with Bonnie Berger

Minjae Park, "Random surface interpretations of two-dimensional Liouville quantum gravity and Yang-Mills theory" with Scott Sheffield

Chengyang Shao, "Long Time Dynamics of Spherical Objects Governed by Surface Tension" with Gigliola Staffilani

Dominic Skinner, "Thermodynamic and topological characterization of living systems" with Jörn Dunkel

Jonathan Tidor, "Higher-order Fourier analysis with applications to additive combinatorics and theoretical computer science" with Yufei Zhao

Aleksandra Utiralova, "Harish-Chandra bimodules in complex rank" with Pavel Etingof

Sahana Vasuevan, "Large genus bounds for the distribution of triangulated surfaces in moduli space" with Larry Guth

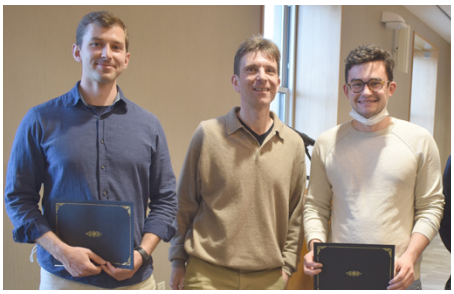
Ruoxuan Yang, "Stable and unstable shock formation of the Burgers-Hilbert equation" with Gigliola Staffilani

Where our PhDs Went 2017–2021

Boston College
Boston University
Broad Institute
CalTech
Columbia
ETH Zürich
Harvard
Harvard Medical
Inst. of Math of Polish Acad. of Sci.
KTH Royal Inst. of Technology
Max Planck Inst.
Minerva Schools at KGI
MIT
MSRI
Northwestern
Notre Dame
NYU
Oxford University
Perimeter Inst. for Theor. Physics
Princeton
Stanford
Stony Brook
UC Berkeley
UCLA
UC San Diego
U. Cambridge
U. Chicago
U. Michigan
U. Minnesota
U. North Carolina
U. of Paris XIII
U. Pennsylvania
Yale

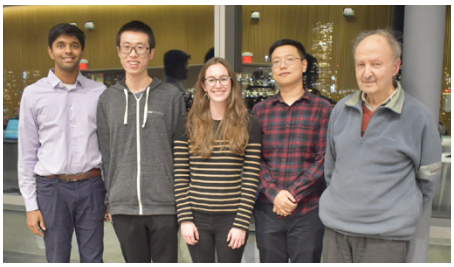
Akuna Capital
Amazon
Barclays
Citadel
D.E Shaw
Facebook
Five Rings Capital
G Research
Google
Hudson River Trad.
InterSystems
IPMU
J.P. Morgan Chase
LinkedIn
Pear VC
Rubrik
Two Sigma Invest.
Voleon Group

Student Awards 2022



Grad students **Julius Baldauf**, at left, and **Calder Morton-Ferguson** hold their Charles and Holly Housman Award for Excellence in Teaching.

Grad students **Ashwin Sah** and **Mehtaab Sawhney** received the Charles W. and Jennifer C. Johnson Prize for outstanding paper accepted for publication.



The George Lusztig PRIMES Mentorships were awarded to grad students, from left, **Arun Kannan**, **Yibo Gao**, and **Marisa Gaetz**; and the Bershadsky Mentor Award went to **Younhun Kim**, standing next to George.

The Jon A. Bucsela Prize in Mathematics was awarded to math major **Shengtong Zhang** '22.

Service to the Math Community

Graduate students **Mary Stelow**, left, and **Marisa Gaetz**, for their work as co-directors of PRIMES Circle and for many additional mentoring and managing roles.

Postdocs **Charlotte Kirchhoff-Lukat** and **Peter Baddoo** for their work in bringing together the postdoc community through tea and coffee hours.

Research scientists **Edgar Costa**, left, and **David Roe**, for their behind-the-scenes efforts creating and maintaining researchseminars.org.

Teaching and Learning Awards

Abe Montes '23 and **Keita Allen** '23 were awarded as Undergrad Teaching Assistants for 18.02 and as exemplary tutors; **Paige Bright** '24, was honored for developing the IAP Real Analysis "bridge" class.

Undergraduate Teaching Assistants awarded were **Quinn Brodsky** '22 (above), for 18.03, and **Eva Yi Xie** '24 (left) for 18.600.

Additional Awards

Churchill Scholar: **David Darrow** '22. Community Building Award: **Ariana Park** '23. Graduate Appreciation Fellowship: **Adela Zhang**.

Hartley Rogers Jr. Prize: **Milan Haiman** '23 and **Yannick Yao**, and **Kenta Suzuki** '25 and **Hao Peng**. Morgan Prize: **Travis Dillon**; honorable mention **Alex Cohen**. Patrick E. McGovern Jr. '59 Entrepreneurship Award: **Ben Spector** '22.

Ronald E. McNair Scholarship: **Omomayowa A. Songonuga** '22. Schmidt Science Postdoctoral Fellowship: **Juncal Arbelaiz** PhD '22. William L. Stewart Jr. Award for outstanding contributions to extracurricular activities and events: **Ananya Gurumurthy** '23. Alice T. Schafer Mathematics Prize: **Letong "Carina" Hong** '22; **Alexandra Hoey** '22 honorable mention. Carina also received the Rhodes Scholarship.

From Associate Head Bill Minicozzi

We are happy to share that our undergraduate mathematics program continues to thrive: Our students are coveted by graduate schools and employers, our major is among the largest at MIT, and we teach thousands of students every term. We have a record 461 mathematics majors this fall (308 in Course 18 and 153 in Course 18C). For comparison, we had 414 majors last fall and 367 in 2018. Enrollment has grown substantially, with 7,525 enrolled students in the last academic year (versus 6,472 in 2018-19) and 12 classes with over 100 students just this fall. This reflects the increase in math majors and the surge in related areas, especially computer science, at MIT.

To modernize the core content, **Larry Guth** has been leading the re-design of 18.01 (single variable calculus) and several faculty have been rethinking 18.02 (multi-variable calculus). One goal has been to expand the material on vectors and matrices used by many downstream classes, to better align with physics and computer science. This also moves material up that was duplicated in 18.03 Differential Equations and 18.06 Linear Algebra. 18.02 was revised by **Bjorn Poonen** last fall and refined in the spring by **Gigliola Staffilani**.

As part of the Common Ground in Computing Education in the College of Computing, **Ankur Moitra** and **Pablo Parrilo** sparked the interest of hundreds of students with 18.C06, which combines linear algebra and optimization. **Laurent Demanet** and AeroAstro's **David Darmofal's** Introduction to Computational Science and Engineering provides a new variant of 16.0002. **Alan Edelman** also is developing an Introduction to Computational Thinking (for Real-World Problems), jointly with EECS.

To ease student transitions into upper-level classes, we partnered with the Undergraduate Mathematics Association last year to develop a 3-unit student-led IAP class on mathematical thinking, abstraction, and proof. **Semyon Dyatlov**, **Bjorn Poonen**, and **Paul Seidel** also developed a 12-unit class. **Paige Bright** '24 developed a new 3-unit IAP class to bridge the gap between 18.100A and the more theoretical 18.100B, to cover advanced topics from 18.100B useful in our upper-level courses.

We believe these modernizations will broaden access for all of our majors.

Multi-dimensional Mathematics Student Groups

We celebrate a multiplicity of gathering modes for our majors and graduate students. The groups build friendships, explore our culture, and advocate for student needs.

MIT Undergraduate Mathematics Association (UMA)

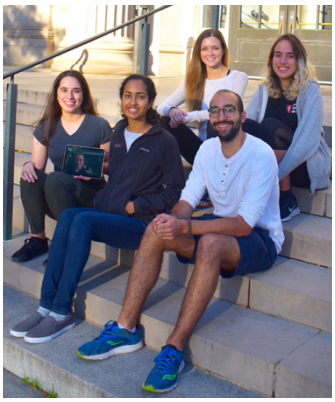
We serve all MIT students interested in math by fostering community engagement and improving the student experience. Since our founding in 2003, we've organized lectures, game nights, socials such as Putnam study sessions, Frosh Math Mixers, a Pi Day Festival; online puzzle challenges, panels on research, and virtual fireside chats with luminaries such as hedge fund manager Jim Simons SB '58 and Khan Academy's Sal Khan '98 MEng '98. With CoMM we've produced the Course 18 Underground Guide and a mentorship program to help students in introductory real analysis and algebra classes, often their first exposure to upper-level, proof-based math. Come join us! We're advised by Larry Guth and Theresa Cummings.
uma.mit.edu

The Council for Math Majors (CoMM)

From left: Co-chair Vishruti Ganesh '23, Advising Co-Lead Abigail Kolyer '23, Xzavier Herbert '23, co-chair Catherine Ji '23, Jon Rosario '24, Katherine Miner '24, Gabriela Carcasson '23, and Katherine Taylor '25.

Founded in 2020, we meet weekly to amplify undergraduate issues and concerns and to improve the accessibility, community, and equity for undergraduates in Course 18, focusing on Discussion Forums, Course 18 Roadmaps, Math Underground Guide, Advising, and Student Feedback. We hold Math Major Mixers, Advisor Advice sessions, Meet the CoMM upperclassmen, and Coloring & Games nights. Advised by Tom Mrowka and Theresa Cummings.
comm.mit.edu

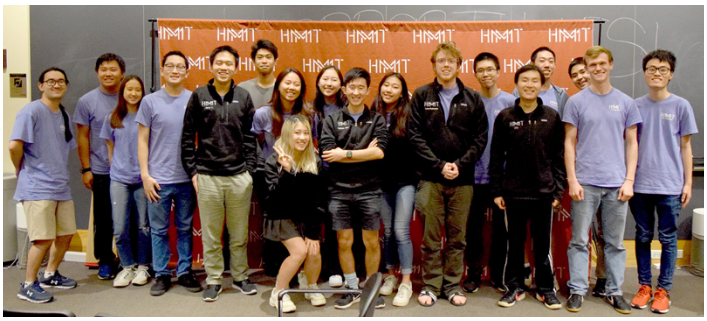
Grad-Undergrad Math Mentor Initiative (GUMMI)



Back, from left, Cameron Krulewski '25, Natalia Pacheco-Tallaj '25; front, from left, Sarah Greer '24, Mary Stelow '25 (on tablet), Nitya Mani '26, and Luis Kumanduri '23.

We're a community of grad students giving advice and support to undergrads considering a graduate degree in math. Founded in Fall 2020, we pair up with undergrads having similar backgrounds and research interests to guide them through the graduate admissions process and fellowship applications, as well as holding various panel discussions. We remember how stressful this process can be!
math.mit.edu/gummi

HMMT



Founded in 1998, we aim to encourage interest in math, engage a diverse community of middle and high school students beyond traditional math curriculums, and show what a future in math may look like. We host one of the largest and most prestigious high school math tournaments in the world, drawing about 1,000 students including olympiad top scorers. Entirely run by students at Harvard, MIT, and nearby schools, our activities in the past have included an officer retreat, staff bonding at Boda Borg, and socials, as well as the November and February 3-day HMMT Tournaments.
www.hmmt.org

Math Retreat Committee

Every year since 2013 (except 2020–2021 due to Covid), graduate student volunteers have organized the annual math department retreat to Purity Springs Resort in NH. Professors, staff, and students hike, kayak, hunt mushrooms, play board games, basketball, cornhole, and table tennis, sing karaoke, gather around a bonfire, eat BBQ and buffet-style meals, and generally have a good time. It's a lot of work to organize, but it's also fun and a great way to make new friends. This past fall's retreat co-organizers were Serina Hu and Nitya Mani.
retreat@math.mit.edu

The Undergraduate Society of Women in Math (USWIM)

We serve all MIT students, including female-identifying and nonbinary individuals who are interested in math by fostering community engagement, providing academic and career resources, offering a mentorship program, and improving the student experience. We hold events such as Math in Industries, the USWIM Mentorship program, movie nights, board games, and study breaks. Nike Sun is our advisor. **math.mit.edu/wim/uswim**

Some members of Spec(MIT) and USWIM gather for one of their occasional joint meetings. From left, Korina Digalaki G, Sanjana (June) Kayath'26, Laura Cui '23, Max Daniels G, Serina Hu G, postdoc Charlotte Kirchhoff-Lukat, and Gwyneth Moreland..

Spec(MIT)

We provide a welcoming and friendly space for LGBTQ+ students, faculty, and staff in the math department to get to know each other, talk about math, and find common interests outside of math, and provide opportunities for mentorship. Founded in 2022, we meet once or twice monthly and hold events such as queer brunch, movie nights, making mobius-strip pasta, and painting. Our advisor is Gigliola Staffilani. **spec-exec@mit.edu**

Menezes Challenge PRIMES Circle

Zoe Awa presenting at the 12th annual PRIMES Conference, May 2022.

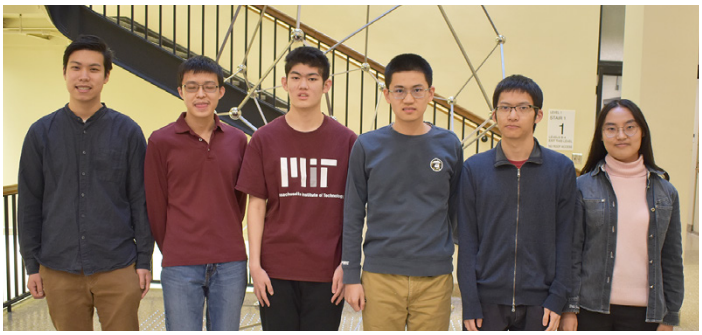
The department runs several high school outreach programs. The Menezes Challenge PRIMES Circle is a free after-school math enrichment program for talented local-area students.

Last year, PRIMES Circle participant and Boston Latin student Zoe Awa worked with partner Ankita Varigonda, a student at Sharon High School, on combinatorial games such as Cut-Cake and Hackenbush games using birthdays, Dyadic numbers, and the Simplicity Principle. Their mentor was MIT math major Yuyuan Luo.

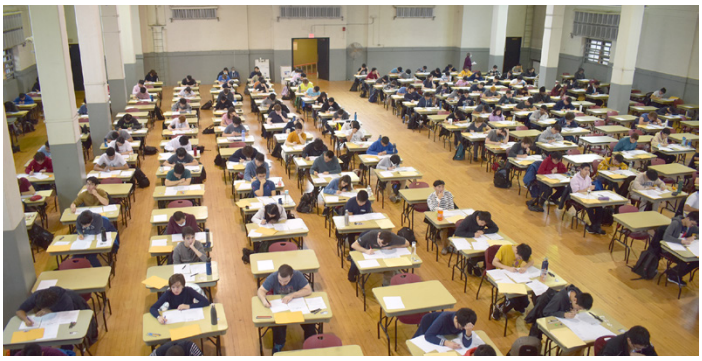
Putnam Math 2021 Competition: Fantastic Results!

Our performance has been outstanding over the past decade, but this past year was off the charts!

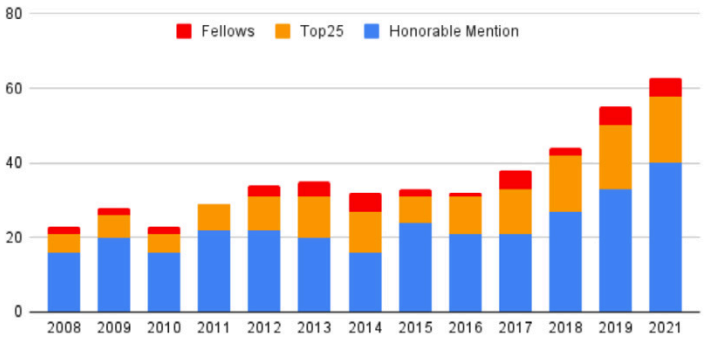
We had the winning team, all 5 Putnam Fellows, 9 of the "Next 11 Highest Ranking Individuals," 8 of the next 12, as well as most of the honorable mentions. We also had 1 of the 3 Elizabeth Lowell Putnam Prizes (for best woman participant).



From left: Putnam Fellows Michael Ren '22, Daniel Zhu '24, Edward Wan '24, Shengtong Zhang '22, Andrew Gu '22, and Elizabeth Lowell Putnam Prize winner Dain Kim '23.



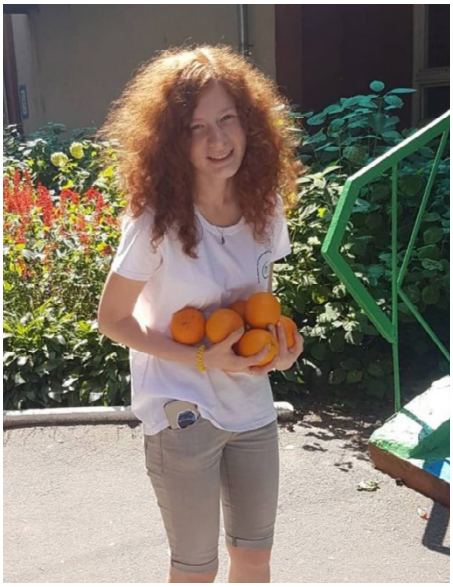
Over 185 undergrads take the 2022 exam in December at Walker Memorial, above. Below, our teams have shown a steady improvement over the years.



Yulia's Dream – Helping Ukrainian Math Students

Last year we launched "Yulia's Dream," a free math enrichment and research program for Ukrainian high school students and refugees in grades 9 to 11, in honor of Yulia Zdanovska, a 21-year-old Ukrainian mathematician killed by a missile in her home city of Kharkiv. This program is part of PRIMES (Program for Research in Mathematics, Engineering and Science) that has been offering enrichment and research for high school students from the United States.

Upon learning of Yulia's tragic death, PRIMES Director Slava Gerovitch PhD '99 said "she immediately reminded me of our typical PRIMES students — passionate about math, successful in competitions, choosing a math major in college, and willing to teach others," leading him to create Yulia's Dream with



Yulia Zdanovska

PRIMES chief research advisor Pavel Etingof. According to Etingof, "MIT has a significant number of Ukrainian- and Russian-speaking students, so we thought we could use their knowledge to help talented Ukrainian students whose education was violently interrupted by the war to pursue their dreams — something that Yulia Zdanovska was deprived of."

The program received about 300 applications. Over the summer, 48 Ukrainian students met weekly in small online groups to study advanced topics or work on research projects, guided by volunteer math graduate students and math majors.

This pilot program was seed-funded by an anonymous donor and the department is raising funds to continue it annually.

Three Ways You Can Help The Math Department

1. Fundraising for MIT Mathematics

Your gifts can help us attract and support top faculty and students. Make an impact by funding innovation in needed areas. Gifts in all amounts maintain our leadership in research and education.

- Math Unrestricted Fund: #3879500
- PRIMES Fund: #3895820
- Grad Student Fellowship Fund: #3857701

To support our programs, contact Director of Development Erin McGrath Tribble at emcgrath@mit.edu or 617-452-2807.

2. Career Guidance for Our Students

Each year we run a panel discussion "From Here to Where?" in which several of our alumni talk about their path after graduating with a degree in mathematics. We aim to show our students a sampling of the many career options available to them post-MIT. We'd love to have more speakers for this panel and we're sure you'd love to come back to campus or join us remotely on zoom to share your stories. If you are interested, contact Gigliola Staffilani at gigliola@mit.edu.

3. Mathematics Community and Outreach Officer

We are looking to fill a staff-level position with an individual who will support our department's activities that promote a sense of belonging to our community and increase diversity in our programs, and who will assist with mathematics outreach. Candidates should have at least an undergraduate degree in mathematics or a related field. If you know someone who might be interested in this position, please direct them to view the full description on math.mit.edu/about/employment.

Integral

Mathematics Department at MIT

Massachusetts Institute of Technology
The Simons Building
Building 2, Room 106
77 Massachusetts Avenue
Cambridge, MA 02139-4307

Web: math.mit.edu
Phone: 617-253-4381
Email: Integral@math.mit.edu

Integral editors: Michael Sipser and Sandi Miller

Photo credits: Christopher Harting page 1; page 2 top six photos; page 5 top right; page 6 top right; page 7 top left

Printing: Puritan Capital

Stay in touch
To send us your feedback, change your address, or request *Integral* by digital only, email us at Integral@math.mit.edu.