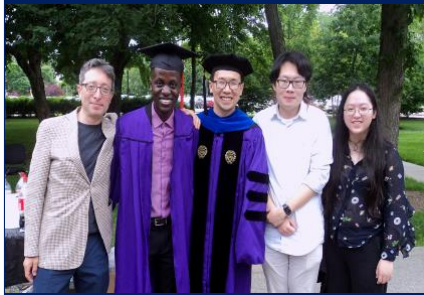## Letter from the Chair
Prof. Ben Weinkove

This academic year began with some trepidation as we returned to campus in-person. Would we really be able to return to in-person teaching and activities during an evolving pandemic? The answer was a resounding yes! Faculty and students have been delighted to return to the classrooms. In-person seminars and conferences are back. We've held our beginning of year party, our holiday party and our spring barbecue. Daily teas have returned.

Admittedly, department life is not completely back to the pre-pandemic normal. Grapes are out and packets of gummi bears are in. But each month, more of the energy and dynamism that defines our department is returning. The buzz is coming back to our common room. We're meeting and reconnecting with our fellow students, colleagues and staff members.

This year we welcomed two new faculty members. **Yuchen Liu** works in algebraic geometry and its connections to complex geometry and commutative algebra. **Gus Schrader** works on quantum groups, higher Teichmuller theory and cluster algebras.

We also welcomed our new Graduate Program Assistant **Eric West.** It has been less than a year but Eric is already like one of the family.

In Fall 2022 we look forward to welcoming four new faculty members! **Tsachik Gelander** works on Lie groups and topological groups, symmetric spaces and Hadamard manifolds, and general locally compact groups. He uses random subgroups to study properties of general discrete subgroups of Lie groups, and in particular manifolds of infinite volume. After faculty positions at the Hebrew University of Jerusalem and the Weizmann Institute of Science, he will join Northwestern at the rank of Professor.

Reza Gheissari, a Miller Fellow at UC Berkeley, works on probability theory and its applications. He studies interfaces in the Ising model, spin glasses, and applications of probability to high dimensional statistics and data science. He will join us in the Fall as an Assistant Professor.

Sonja Mapes works on combinatorial commutative algebra and connections to algebraic geometry and tropical geometry. She brings with her 8 years of experience as Director of Undergraduate Studies at the University of Notre Dame. She will join us as an Associate Professor of Instruction.

Finally, **Gábor Székelyhidi**, also coming from Notre Dame, will join us at the rank of Professor. He works on geometric analysis and complex differential geometry. Much of his work is motivated by the question of the existence of canonical metrics, such as extremal or Kahler-Einstein metrics, on projective manifolds.

Here are some highlights from this year's department news. **Aaron Brown** won the 2022 New Horizons Prize from the Breakthrough Foundation. **Aaron Brown** and **Xiumin Du** were invited to the 2022 International Congress of Mathematicians. **Ben Antieau** was named a 2022 Fellow of the American Mathematical Society (AMS). **Yuchen Liu** won a 2022 Alfred P. Sloan Research Fellowship. **Bryna Kra** was elected President of the AMS, won the Provost's Exemplary Service Award for her long record of service to the university and department, and was awarded Northwestern's 2022 Ver Steeg Award for her outstanding research and scholarship. Congratulations all!

Return to campus brought the return of distinguished lectures and conferences. **Ian Agol** of UC Berkeley gave the Bellow Lectures in March 2022 (originally planned 3 years ago!) and **Burt Totaro** of UCLA gave the Pinsky Lectures in April. In March 2022, **John Francis**, **Gus Schrader** and **Boris Tsygan** organized the conference *Homotopical Methods in Geometry and Physics* in honor of **Ezra Getzler**'s sixtieth birthday. This was part of the 2021-2022 emphasis year of the same name. Many participants were thrilled to attend their first in-person conference since before the pandemic!

We also enjoyed a spring visit by 2020 Nemmers Prize winner **Nalini Anantharaman** of the University of Strasbourg. She gave us a wonderful colloquium talk on the uncertainty principle and uncertainty inequalities. **Nir Avni** and **Steve Zelditch** organized here a conference in her honor, May 30 - June 3, 2022, titled *Laplacians on Random Hyperbolic Surfaces and on Random Graphs.*

Causeway Postbaccalaureate Certificate Program
Prof. John M. Alongi, Program Director

2021-2022 Causeway Program Participants

NU Faculty Members Awarded Grant from MAA Tensor Summa Program

NU faculty members **Christian Geske, Aaron Greicius, Maria Nastasescu**, and **Shuyi Weng** were awarded a grant from the MAA Tensor SUMMA program to continue the Northwestern Emerging Scholars Program.

NESP aims to bring a wider swath of students into the Math Major by revealing some of the beauty of mathematics to students in courses that focus on applications or mathematics as a prerequisite for study in other disciplines.

NU Mathematics Department Awarded NSF Research Training Grant (RTG)

NSF has awarded a Research Training Grant (RTG) in Dynamics to NU Mathematics. The Principal Investigator is Bryna Kra, with co-PI's Nir Avni, Aaron Brown, Ilya Khayutin and Jared Wunsch.

This major grant award will support graduate students, postdocs and many research training activities in the Math department. The proposal aims to increase the strength of research in the field of dynamics, both at Northwestern and across the US, and to address the severely constricted pipeline of talented students entering dynamics.

The larger goal is to increase the number of US citizens well-prepared to carry out research in the mathematical sciences, with a focus on increasing the numbers from historically underrepresented groups.

The Causeway Postbaccalaureate Certificate Program is a new initiative at Northwestern which addresses the persistent and tragic under-representation of minorities in mathematics and statistics. Causeway prepares students for doctoral programs in the mathematical sciences through a yearlong, fully funded experience involving coursework, a research project, and close mentoring. **Eric Zaslow**, **Bryna Kra**, **Santiago Cañez**, and myself in our department, and **Onnie Rogers** in the Department of Psychology are the program organizers.

During Summer 2021 our inaugural cohort of program participants took a special course designed and taught by **Eric Zaslow** as well as a two-week GRE Boot Camp taught by **Dan Cuzzocreo**. Simultaneously, they enjoyed individual research experiences supervised by **Tuca Auffinger**, **Nir Avni**, **Santiago Cañez, Paul Goerss**, **Gus Schrader**, and **Jared Wunsch** in our department, and **Beth Tipton** in the Department of Statistics and Data Science**.** During the regular academic year students enrolled in courses to strengthen curricular foundations for graduate study. Throughout the program the participants attended bi-weekly Causeway Seminars featuring panel discussions and lectures by guest speakers, including Northwestern alumna, **Maria Stadnik**. In the spirit of "paying it forward," our program participants mentored students at Evanston Township High School.

We are measuring Causeway's success by the number of participants who continue with graduate study in the mathematical sciences. With our first cohort we are off to a good start. **Ally Nagasawa-Hinck** will begin a doctoral program in mathematics at the University of California, Davis, while **Edgar Santos-Vega** will enter the Ph.D. program in mathematics at Central Michigan University. **Nico Cooper** will pursue a doctorate in physics at the University of Kentucky, and **Vincent Jones** will attend the Ph.D. program in mathematics at the University of Kansas. **Kayla Perez** has been admitted to the masters program in mathematics at Western Washington University, and **Angel Carillo** was admitted to the doctoral program in mathematics at Washington State University.

Benjamin Hernández deserves special mention as the sole participant in our Statistics track. Benjamin has several late-deadline graduate applications still pending. Causeway participants also received admission offers from institutions such as Purdue University, the University of Illinois at Chicago, the University of Arizona, and the University of Iowa. Congratulations to all of our Causeway participants for confronting an array of challenges this year with grace and poise. We wish them every success!

Causeway has benefited from the contributions of many of our faculty, staff, and graduate students. **Dan Cuzzocreo** provided academic support and mentorship. Our entire department staff strongly supported the program, but **Eric West** deserves special mention for his work as our Graduate Program Assistant. **Sean McAfee**, **Shuyi Weng**, and **Katrina Morgan**, together with graduate students **Jenny Jones**, **Alex Karapetyan**, **Katy Loyd**, and **Ro Wang** also mentored program participants.

As we bid farewell to our inaugural cohorts, we look forward to welcoming four new Causeway students this summer.

Letter from the Chair *(continued from Page 1)*

We look forward to many research activities in dynamics over the next several years, funded by a major new 5-year Research Training Grant award from the National Science Foundation.

Bryna Kra is the principal investigator on the award *Dynamics: Classical, Modern, and Quantum*, with co-PI's **Nir Avni**, **Aaron Brown**, **Ilya Khayutin** and **Jared Wunsch**.

This year saw the first cohort of the Causeway Postbaccalaureate Program. You can read in these pages Causeway Director **John Alongi**'s report on this bold initiative to diversify the mathematical profession.

Teaching is central to our department's mission. Congratulations to faculty member **Aaron Greicius** and graduate student **Ruoyu Wang** who were given 2022 Weinberg College awards for excellence in teaching.

Christian Geske, **Aaron Greicius, Maria Nastasescu** and **Shuyi Weng** will continue our *Northwestern Emerging Scholars Program* thanks to a new grant awarded by the MAA Tensor SUMMA program.

This year saw our first *Undergraduate Colloquium.* **Robin Neumayer**, an Assistant Professor at Carnegie Mellon and our recent RTG postdoc, gave a fantastic talk to undergraduates on shape optimization, soap films and acoustics. Over the next year or so we look forward to exciting new changes to our math major, led by Director of Undergraduate Studies **Santiago Cañez** - watch this space!

Two of our faculty members were promoted to the highest rank in their tracks. **Aaron Brown** was promoted to Professor and **Santiago Cañez** was promoted to Professor of Instruction. Congratulations! You'll read in these pages about the successes of our graduating seniors and finishing PhDs. Congratulations and good luck to you all!

This was my first year as chair, taking over from **Eric Zaslow** who did a great job managing the department through the difficult days of the pandemic. I can't imagine how I could have coped this year without the hard work and dedication of our terrific faculty and staff. Associate Chair **Ursula Porod**, Director of Undergraduate Studies **Santiago Cañez**, Calculus Director **Aaron Greicius** and MENU Director **Aaron Brown** keep our undergraduate teaching running like a well-oiled machine. Director of Graduate Studies **Elton Hsu** and Director of Graduate Admissions **Ezra Getzler** take care of and recruit for our world-class graduate program. Finally a special thanks to our committed and talented staff members **Miguel Lerma**, **Jenima Lyon**, **John Mocek** and **Eric West** led by Business Administrator **Deavon Mitchell**: you can't find a better team anywhere!

Interview with NU Math faculty member, Prof. Aaron Brown, on Winning 2022 New Horizons Prize

NU Mathematics faculty member, **Aaron Brown**, won the 2022 New Horizons in Mathematics Prize for contributions to the proof of Zimmer's conjecture. The Breakthrough Prize Foundation awards the New Horizons Prize in Mathematics to promising early-career researchers who have already produced important work.

You won the 2022 New Horizons Prize for your work on the Zimmer Conjecture. Could you describe what the Zimmer Conjecture is?
Zimmer's conjecture concerns actions of lattices in higher-rank Lie groups on low-dimensional manifolds. The prototype problem involves actions of SL(n,$\mathbf{Z}$), for n at least 3, acting on a manifold of dimension at most n-2. The conjecture, which we solved in this case, states that the action is finite, i.e. factors through the action of a finite group. In a sense, this shows there are no "interesting" actions. Less technically, the acting groups contain higher-rank abelian groups (such as $\mathbf{Z}^{n-1}$ inside SL(n,$\mathbf{Z}$)). Actions of higher-rank abelian groups can be seen as dynamical systems with extra symmetries. It is hard in general to produce dynamical systems with extra symmetries except in algebraic situations. Zimmer's conjecture, the larger Zimmer program, and lots of related conjectures follow from this expectation by asserting that actions of higher-rank groups should be of an "algebraic origin."

Regarding your collaboration with Fisher and Hurtado, what led to your breakthrough on the Zimmer conjecture?
I would say it was mostly good timing. I had previously established a key result with Federico Rodriguez Hertz and Zhiren Wang (both at Penn State) concerning existence of invariant measures for actions considered in Zimmer's conjecture. Sebastian Hurtado was aware of a new tool (strong Property T) that had recently been established for groups we consider. David Fisher visited University of Chicago (where Sebastian and I were postdocs at the time) and the three of us met to see if there was some project we could approach. By the end of the month, we had a complete outline for the case of actions by cocompact lattices. It took much longer to work out the cases of SL(n,$\mathbf{Z}$) and general lattices.

When did you first learn that you were awarded the New Horizons Prize? Were you surprised?
I believe I was told in July. I was quite surprised. I was especially pleased to know it was a joint award shared between myself and Sebastian Hurtado.

What do you think comes next now that the main problem of the Zimmer conjecture has been resolved?
We solved the main formulation of Zimmer's conjecture but there remain many open questions in the area. For groups that are far from being $\mathbf{R}$-split, we only obtain partial results and while there is some progress towards getting the optimal dimension bounds for these groups, there are still gaps between what is expected and what can be shown. Beyond Zimmer's conjecture, one would like to understand actions of higher-rank lattices on manifolds of large, or at least "moderate," dimension. For instance, classifying actions of SL(n,$\mathbf{Z}$) on n-manifolds is wide open. In recently started project with Homin Lee (an incoming Boas postdoc), we hope to understand actions of SL(n,$\mathbf{Z}$) on n-manifolds assuming the action is sufficiently "chaotic" (e.g. has positive entropy).

NEW HORIZONS PRIZE

The Graduate Program
Prof. Elton Hsu, *Director of Graduate Studies*

After two years' interruption by the pandemic, it is gratifying to see our graduate students resuming their usual gathering in the common room and the boards filled with mathematics. A warm welcome to those graduate students who joined the department during the pandemic but only came to us in person just now! This year eight of our graduate students will leave us after they have completed their theses and start a new life elsewhere: **Viktor Burghardt, Cathy Chen, Michael Geis, Pax Kivimae, Fanjun Meng, Abraham Rabinowitz, Ruoyu Wang**, and **Mengxuan Yang**. Thank you all for being part of our community for so many years and we wish you all the best.

Congratulations to **Pax Kivimae** and **Mengxuan Yang**, our Best Thesis Award winners this year. Pax works in probability theory -- or more specifically, at the intersection of spin glass theory and random matrix theory-- and wrote his thesis on Gaussian multiplicative chaos and complexity in random matrices under the guidance of **Tuca Auffinger**. He will join New York University as a Courant Instructor. Mengxuan worked in microlocal analysis and, under the tutelage of **Jared Wunsch,** fast became an expert on the diffractive effect of Aharonov-Bohm potentials. Mengxuan will be a Morrey Instructor at University of California at Berkeley starting this August.

Math Graduate Students on a Graduate Program Outing

Catherine Ray won this year's Gelfand Prize, for Service to the Graduate Community. Catherine has done so much for the graduate students this year and deserves this prize many times over. Catherine organized several graduate student study groups and seminars on various topics in topology and number theory as well as socialization activities (axe-throwing, kayaking excursions, and reviving the Buddy Program for junior students).

Two of our graduate students**, Nick Lohr** and **Ben Zhou** received the award for Excellence as a Graduate Teaching Assistant this year.

Thanks to the members of the Graduate Committee for Recruitment under the leadership of Professor **Ezra Getzler**, 15 new graduate students will join us this September: **Pablo Bustillo Vasquez** (ENS Paris), **Max Chao-Haft** (Harvey Mudd College), **Xiangtao Chen** (Peking University**), Robert Preston Cranford** (MIT, NSF Graduate Research Fellowship winner), **Ryan Chatterjee** (University of Texas, Austin), **Colin Fan** (Rutgers University), **Larry Gu** (USC), **Rajiv Kappa** (UCLA), **Arka Karmakar** (Chennai Math Institute), **Corey Lunsford** (UC Berkeley), **Amadeus Maldonado** (Universidade de Brasillia and IMPA), **Jiyao Tang** (Peking University), **Daniel Townsend** (University of Cambridge), **Adithya Upadhya** (Indian Institute of Science Bangalore), and **Guoran Ye** (Notre Dame). The Committee worked diligently to choose these outstanding students from among more than 350 applicants. Our new international students hail from Belgium, Brazil, China, Hong Kong, India, and United Kingdom.

The Undergraduate Program
Prof. Santiago Cañez, *Director of Undergraduate Studies*

After a year of remote learning, the return to in-person instruction this year was a great success! Faculty and students alike had to adjust to new expectations and constraints, and helped make this a rewarding year for all. This year's graduating class is expected to include 57 majors and 11 minors, a few of which warrant special mention.

Three of our students wrote senior theses this year. **Benjamin Major** wrote about *The Distribution and Equidistribution of Prime Numbers: An Ergodic Theory Approach*, **Alain Kangabire** wrote about the *Laplace Operator on a Metric Graph*, and **Gunnar Anderson** wrote about *The Representation Theory of The Symmetric and Alternating Groups*. Benjamin and Alain were co-recipients of this year's Robert R. Welland Prize for Outstanding Achievement in Mathematics by a Graduating Senior, and will each begin PhD programs in mathematics this fall: Benjamin will attend UCLA, and Alain will attend MIT. Special recognition should also be given to **Benjamin Major**, **Andrew Hinchberger**, and **Kirsten Kash** (junior) for their service as Undergraduate Teaching Assistants over the years.

The Northwestern Emerging Scholars Program had another successful year, due in large part to the work of **Sofia Li** and **Jun Sung** as student mentors. Special thanks also to faculty mentors **Christian Geske** and **Shuyi Weng**, and graduate student **Alex Karapetyan** for helping to make this program run smoothly. The Northwestern Undergraduate Math Society was also very active this year, hosting numerous great events throughout the year. Thanks to president **Daniel Luo** for his drive and organizational skills in making it all happen. One new event that was well-received was a panel discussion for students looking to learn more about graduate school and academic career options in mathematics. Thanks to Director of MENU **Aaron Brown** for helping to organize this with Daniel.

On the faculty side, **Aaron Greicius** won a Weinberg College of Arts and Sciences Alumni Teaching Award for his excellent work in recent years. He continues working on Open Educational Resources in linear algebra and calculus. **Ruoyu Wang** won a Weinberg College of Arts and Sciences Outstanding Graduate Student Teacher Award based on his superb work in our department. **Aaron Greicius**, **Maria Nastasescu**, **Christian Geske**, and **Shuyi Weng** were awarded a grant from the Mathematical Association of America's Tensor SUMMA program to continue funding the Northwestern Emerging Scholars Program and look forward to welcoming a new group of students next year.

The undergraduate committee was hard at work this year evaluating our current mathematics major requirements and developing a proposal for an updated set of requirements. Next year the committee will focus on submitting these requirements for formal College approval and on implementation. The goal is to have them in place for Fall 2023.

As Director of Undergraduate Studies, I have the pleasure of seeing first-hand the exceptional work done by our faculty and students. Our undergraduate program remains healthy and strong, and I continue to expect great things in the year to come. Thanks to all who helped make this year a success, including the donors who make many of our events possible.

Prof. Ami Radunskaya, of Pomona College, presenting the 2022 UG Awards Lecture

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2022 NU Mathematics Undergaduate Award Winners

Robert R. Welland Prize for Outstanding Achievement in Mathematics
Alain Kangabire, Benjamin Major

Senior Career Award in Mathematics
Steven Kirby, Yunru (Rose) Zheng

Junior Career Award in Mathematics
Gabriel Augustynowicz, Anxin (Bob) Guo

Junior Career Award, Honorable Mention
Gwen Cooke, Carmen Jackson

Award for Excellence in Mathematics by a First-Year Student
Daniel Thomas David Lee, Izzy Huang, Sharon Lin, William Xie, Lorien Zhao, Yiru Zhang, Zexuan Zhou, Thomas Filipuk, Jerry Cao, Diana Deng, Fariz Firdausi, Kieran Cullen, Chi Li, Philip Wang, Anastasia Wei, Elliott Yoon, Leo Chang

Award for Outstanding Contributions to Undergraduate Mathematical Life
Daniel Luo

Award for High Achievement on the William Lowell Putnam Examination
Akhil Kalghatgi

Award for Excellence as an Undergraduate Teaching Assistant
Kirsten Kash, Benjamin Major

Undergraduate Teaching Assistant Service Award
Andrew Hinchberger, Benjamin Major

NU Math 2022 Undergraduate Awards and Lecture Presentation

The 2022 NU Math UG Awards were presented May 18th with featured speaker, Prof. **Ami Radunskaya** of Pomona College. The UG Awards and Lecture Presentation was followed by the UG Awards Dinner in Evanston, attended by NU Math faculty members, UG students, grad students, and staff.

These annual awards celebrate students' academic achievements and contributions to the NU Math community.

NU Math Dept Hosts 2021 Postdoc Day

NU Math faculty member, Geoffrey Bentsen, presenting at the 2021 Postdoc Day Seminar

On Nov. 3rd, 2021 the Mathematics Dept hosted a Postdoc Day, organized by NU Mathematics faculty member **Yotam Hendel**. This event was a sequence of several short talks-- accessible to a general audience-- given by new post docs in the department. A great opportunity to learn about the mathematics of our new department members, the talks were followed by a reception in the Lunt Common Room.

Ben Antieau Named 2022 Fellow of the American Mathematical Society

NU Mathematics faculty member, **Ben Antieau**, was named a 2022 Fellow of the American Mathematical Society. The Fellows of the American Mathematical Society Program recognizes members who have made outstanding contributions to the creation, exposition, and utilization of mathematics. Prof. Antieau was named a 2022 AMS Fellow for his contributions to K-theory, algebraic geometry, and homotopy theory.

Xiumin Du and Aaron Brown Invited to Speak at the 2022 International Congress of Mathematicians

NU Math faculty members, **Xiumin Du** and **Aaron Brown**, received prestigious invitations to speak at the 2022 International Congress of Mathematicians.

Xiumin Du will speak in the Analysis Section and Aaron Brown will speak in the Dynamics Section. The International Congress of Mathematicians (ICM) is the largest and most significant conference on pure and applied mathematics as well as one of the world's oldest scientific congresses.

2022 PostDoc Awards

The 2022 Postdoc Teaching Awards were presented at a reception in Lunt Hall, attended by staff, NU faculty, and graduate students. **John Enns**, **Yotam Hendel** and **Shuyi Weng** won the 2022 Awards for Excellence by a Postdoctoral or Visiting Faculty Member.

Bryna Kra Elected AMS President, Wins 2022 Provost's Award, and Receives 2022 Ver Steeg Award

Bryna Kra, Sarah Rebecca Roland Professor of Mathematics at Northwestern University, has been elected President of the American Mathematical Society. After a year of being President Elect, her two-year term will start on 1 February 2023. Prof. Kra has been a Fellow of the American Mathematical Society since 2012.

Prof. Kra was awarded the 2022 Provost's Award for Exemplary Faculty Service. She is being recognized for her outstanding support and mentorship of young mathematicians as well as her service to both her department and the University. Contributions include expanding the department's postdoctoral programs, serving on a diverse list of University commitees, and establishing mentoring groups within the department as well as across the University.

Prof. Bryna Kra also received the 2022 Dorothy Ann and Clarence L. Ver Steeg Distinguished Research Fellowship Award. The Ver Steeg Award was established at Northwestern in 2005 to support the research of a tenured Northwestern faculty member whose research and scholarship are so outstanding as to enhance the reputation of Northwestern, nationally and internationally.

Aaron Greicius and Ruoyu Wang Awarded 2022 Weinberg Teaching Awards

NU Mathematics faculty member and Director of Calculus, **Aaron Greicius**, has been awarded the 2022 Arts and Sciences Alumni Teaching Award.

Ruoyu Wang was awarded the 2022 Weinberg Outstanding Graduate Student Teaching Award.

Each year, the Weinberg College of Arts and Sciences recognizes members of the College's tenure-line and teaching track faculty for excellence in teaching. Weinberg College in addition recognzies the contributions of outstanding graduate student teachers in the instruction of the its undergraduates.

Yuchen Liu Wins 2022 Sloan Fellowship

NU Mathematics faculty member, **Yuchen Liu**, has won a 2022 Sloan Fellowship. The Sloan Research Fellowship Program recognizes and rewards outstanding early-career faculty who have the potential to revolutionize their fields of study.

Professor Liu's research primarily focuses on algebraic geometry and its interactions with differential geometry and conmmutative algebra. His goal is to investigate canonical metrics and moduli spaces of higher dimensional varieties from the viewpoint of algebraic stability.

FACULTY HIGHLIGHTS

Featured speakers and attendees at the 2022 Homotopical Methods in Geometry and Physics Conference

2022 Homotopical Methods in Geometry and Physics

The 2021-2022 Emphasis Year was on Homotopical Methods in Geometry and Physics, organized by NU Math faculty members John Francis, Gus Schrader, and Boris Tsygan. In honor of NU Mathematics faculty member **Ezra Getzler**'s birthday, the 2022 conference Homotopical Methods in Geometry and Physics took place March 21–25 at Northwestern University. It was preceded by a mini-school on Open-Closed Field Theories that took place March 19–20.

2022 Pinsky Distinguised Lecture Series

The 2022 Distinguished Pinsky Lectures were hosted by NU's Math Department April 6-8th, with Prof. **Burt Totaro** of UCLA as the featured speaker. Prof. Totaro' lectures ("Varieties of General Type with Small Volume**", "**The Hilbert Scheme of Points on Affine Space**",** and "The Failure of Vanishing Theorems") were very well attended by faculty, graduate students, and visitors.

2022 Conference: Laplacians on Random Hyperbolic Surfaces and on Random Graphs

Hosted by Northwestern University, this conference was held in coordination with the 2020 Nemmers Prize ceremony for Prof. **Nalini Anantharaman**, May 30 to June 3, 2022. The co-organizers are NU faculty membrs **Nir Avni** and **Steve Zelditch.**

2022 Bellow Distinguished Lecture Series

Northwestern University's Mathematics Dept hosted the 2022 Alexandra Bellow Distinguished Lecture Series March 2-4, 2022 with featured speaker, Prof. **Ian Agol** of UC Berkeley. Prof. Agol delivered the "Hyberbolic Knots and Links", "Veering Triangulations and Pseudo-Anosov flows", and "Ribbon Concordance of Knots" lectures. A reception followed the March 2nd lecture.

2021 Midwest Dynamical Systems Conference

Northwestern University's Mathematics Department hosted the 2021 Midwest Dynamical Systems Conference Nov. 12-14. **Paul Apisa, Jeff Diller, Yan Mary He, Thomas Hille, Steve Hurder, Anh Le, Davi Obata, Wenyu Pan, and Ralf Spatzier** were the featured speakers.

On the organizing committee for the 2021 Midwest Dynamical Systems Conference were **Aaron Brown** (Northwestern), **Laura DeMarco** (Harvard), **Ilya Khayutin** (Northwestern), **Roland Roeder** (IUPUI), and **Daniel Thompson** (Ohio State). The Midwest Dynamical Systems Conference is one of the most influential, diverse, and longest running conference series in dynamical systems.

Featured speakers and attendees at the 2022 Laplacians on Random Hyperbolic Surfaces and on Random Graphs Conference

CONFERENCE HIGHLIGHTS

Right to left: Prof. Bryna Kra presenting Alain Kangabire the 2022 Welland Prize at the 2022 UG Awards Presentation

Math Grad students preparing for their kayaking outing

2022 Math Barbecue

Math staff, graduate students, and faculty toasting Prof. Ezra Getzler on his birthday

Math Office Winter Window display, designed by our work study student, Jessica Kanoelani Lee

Families, faculty, and students attending 2022 Math Graduation Reception

MATH COMMUNITY

Ms. Nicole Marie Ablondi
Mr. James Andrew Ahrens
Mrs. Martha Aronson
Mr. John E. Basinger
Mr. Angelo S. Bastas
Mr. Brian Richard Batten
Mr. David N. Beckman
Mrs. Florence Beckman
Alexandra Bellow, PhD
Christopher Paul Bendel, PhD
Mr. Joshua Berlin
Ms. Emily Bradley Berson
Mrs. Constance L. Billerman
Mr. John D. Billerman
Mr. Lawrence A. Bjork
Mrs. Carlotte Bjork
Ms. Margaret M. Blick
Mr. Barry Owen Booton
Mr. Joseph John Breen
Ms. Anastasia G. Brelias
Mr. Bradley D. Brown
Mrs. Virginia Brown
Mr. and Ms. Ramesh Bulusu
Ms. Barbara A. Bunn
Maria Magdalena Byskosh, PsyD
Arkadiush T. Byskosh, MD
Dr. Catherine A. Calder
Mrs. Joan Antoinette Caviness
Ms. Chih-Yi Jean Chang
Mr. Nathan Michael Chuang
Ms. Judith A. Clark
Mr. Lee Nathan Cohn
Ms. Nancy Cohn
Mr. Robbin Conner
Ms. Myrene Conner
Michael J. Cowen, PhD
Mrs. Deborah Rachel Deck
Mr. Jason William Deck
Ms. Susan DiCaprio
Mr. Ethan Lewis Dlugie
Erik Doeff, PhD
Ms. Gail Rosenbaum Doeff
Mr. William Averell Engellenner
Helmut P. Epp, PhD
Mrs. Susanna Samuels Epp
Marc S. Frager, MD
Mrs. Nancy Frager
Mrs. Deborah Franke

John E. Franke, PhD
Ms. Mary M. Gant
Honghao Gao, PhD
Dr. Annie M. Garraway
Mr. Paul Wesley Gibson
Dr. Bruce F. Golbus
Mr. John J. Gordon
Mr. David Lee Gorsline
Virginia Graham, PhD
Mr. Robert C. Grierson
Mrs. Linda L. Grierson
Ms. Hui Guo
Kymberly A. Gyure, MD
Mr. Kenneth Ham
William A. Hansen, PhD
Mrs. Emilee G. Hervey
Mr. Richard L. Hervey
James A. Hewitt, PhD
Mrs. Leane Hewitt
Ms. Amy D. Hicks
Mrs. Karen L. Hill
Mr. Thomas E. Hill, II
Edward K. Hinson, PhD
Mr. Wilmer Ho
Zili Huang, PhD
Mr. Joshua Louis Hunter
Mr. Yipeng Jiang
Mr. Brian Kim
Mr. Peter Samuel Kim
Mr. Michael P. Knapp
Dr. David E. Kullman
Mr. Sinclair G. Kwak
Mr. Joshua Stephen Lavan
Mr. Robert G. Lemen
Mrs. Kathryn M. Lemen
Mr. Ethan Prince Lewittes
Mr. Bryan E. Lippert
Mrs. Marilyn J. Lockhart
Mr. James W.G. Lynfield
Jeffrey H. Mantel, PhD
Mr. Ming Yang Mao
Mr. David K. Masunaga
Mr. K. Thomas McClelland
Ms. Inge McGuigan
Mr. Jesse McGuigan
Ms. Emily Rose McHugh
Mr. Jamil Sean Merali
Sharon K. Mills, PE

Mrs. Lola Valerie Monaghan
Mr. Christopher Michael Mrstik
Ms. Eden Mutchnik
Mr. Steven Mutchnik
Mr. Roy W. Nelson
Dr. Elaine Blanche Pavelka
Ms. Denise I. Patterson
Mr. Tony Pham
Ms. Rachel Pinsky
Amanda Jeanne Potts, PhD
Ms. Janet Pranskevich
Ms. Elizabeth Victoria Reilly-Berlin
Mr. Edward L. Rennemann
Ms. Teri-Ellen Rogers
Mr. Gavin Eliot Rosen
Ms. Diane Beth Rothberg
Ms. Ellen Jean Ryske
Mr. Jose Sanchez
Ms. Priscilla Viescas Sanchez
Ms. Shea Victoria Schaaf
Mr. James Steven Schuchart
Mr. Abraham Joseph Schulte
Frederick W. Siegel, PhD
Mark Richard Snavely, PhD
Ms. Kay M. Snavely
Mr. Matthew Guoquan Song
Mr. Leo M. Spornstarr
Mr. Dean R. Strenger
Mrs. Mary Jane Strenger
Mr. Mark A. Sturino
Pedro A. Suarez, SJ, PhD
Mr. Ronald A. Swanson
Mrs. Joy Ann W Sweet
Mr. Charles W. Sweet
Mr. Carl A. Taibl
Mr. Mark Anthony Takagi, II
Delia Lee Takagi, MD, MPH
Mr. Alberto Takase
Mr. Henrikas Tankus
Mr. Mark R. Thompson
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