The purpose of the Association for Women in Mathematics is to create a community in which women and girls can thrive in their mathematical endeavors, and to promote equitable opportunity and treatment of women and others of marginalized genders and gender identities across the mathematical sciences.

PRESIDENT'S REPORT

I remember back when I was a young child, I would run around the house singing, "I am woman, hear me roar." At the Association for Women Mathematics (AWM), we take pride in uplifting, acknowledging, and hearing the voices of all women and others of marginalized genders and gender identities across the mathematical sciences.

Recently, along with the AWM Policy and Advocacy (A&P) Committee, we met with the Interagency Working Group on Safe and Inclusive STEM Environments (IWG-SISE). The IWG-SISE seeks to inform and develop policies that reduce sex-based and sexual harassment in federally funded STEM research. Unfortunately, in some research spaces, safe environments are not always the norm. There have been instances of students, staff, and principal investigators in unsafe spaces.

In mathematics, advisors have a significant influence, good or bad, on the career trajectory of graduate students. Perhaps an expanded mentor structure to train graduate students can help mitigate or at least lessen the risk of having one advisor block one's path. While many federal agencies have a newfound reluctance to fund gender-focused broadening participation efforts, the need to have evidence-based practices that mitigate sex-based and sexual harassment remains high. These practices may include effective training programs for multiple levels, strategies for departments to cultivate welcoming environments, and how to provide effective support and reporting systems that foster harassment-free environments.

In funded research, most often the award is made to the institution. Hence, the institution bears the responsibility to ensure that the research is carried out properly and that all human subjects involved in the research are protected. Let us never forget the unfortunate U.S. Public Health Service's (USPHS) Untreated Syphilis Study at Tuskegee that many years later resulted in the National Research Act of 1974 that provided protections for human subjects in research studies. Now, years later, we also contemplate how we protect those humans who are doing the research.
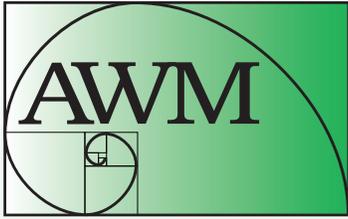
The AWM leadership, along with the AWM P&A Committee, works hard to uplift the voice of our community to motivate solutions to these national challenges. When I think back to my childhood while finding my own voice, I now find comfort that we are definitely "In numbers too big to ignore." Rest assured, the AWM will continue to amplify your voice to advocate for environments where we can all thrive in mathematics.

Talitha Washington
June 27, 2024
Atlanta, GA

Talitha Washington

BOOK REVIEW

More Than a Glitch: Confronting Race, Gender, and Ability Bias in Tech
By Meredith Broussard
The MIT Press, 2023
ISBN 978-0262047654

Reviewer: Alexia A Joachim, George Mason University (Mechanical Engineering Undergraduate), ajoachim@GMU.EDU

This book completely rewired the way I think about technology and algorithms. I am convinced anyone wanting to go into the technology field needs to read this book. Meredith Broussard is an Associate Professor at the Arthur L. Carter Journalism Institute at New York University and Research Director at the NYU Alliance for Public Interest Technology. Her own personal experiences along with the placement of stories and facts in this book made it speak deep into my mind.

Technochauvinism is the belief that technology will always do it better. This theme is the basis of what Meredith Broussard stands on in her book. There are twelve chapters in this book. The first two introduce algorithmic bias, the next six lay out the many ways algorithms have been failing people, and the final two give her proposed solution and final thoughts. Throughout her chapters she goes through how algorithmic bias disadvantages people of color, gender minorities, and disabled people.

She starts off the book strong with a powerful analogy. When Broussard was younger, she and her brother would stare down their cookie jar, with one cookie left at the bottom. Simply splitting the cookie wasn't enough, they wouldn't be able to evenly split the cookie in half. One side would always end up having more chocolate chips or be smaller than the other. So, they came up with the idea that whoever got the worse half of the cookie would be able to choose the show they watched together for the night. If you had asked an algorithm, particularly the chatbots that have crashed the current technological world, that same question, they wouldn't have come up with that solution. They would simply say split the cookie 50/50. A mother would always know that splitting a cookie in half would never be the right answer for children in this situation. One of the many examples of how technology is not always better.

Throughout the book there is the argument against technochauvinism, hand in hand with the confrontation of race, gender, and ability bias. As a George Mason University student, in my second year as a Mechanical Engineer, I had known through my diversity in engineering class, and through some of my own experience as a Black woman in engineering, of the race and gender bias. After digesting the many cases and experiences of algorithmic bias throughout this book, the problems were much deeper than I thought. I was only looking at the rotten tree without even knowing there were roots underneath. Which left me thinking what this might mean for me in my career as a student and after I graduated. As algorithms integrate into society, recognizing how algorithms impact different groups of people is vital.

As I looked back, I recognized how important the setup of the book was to make it digestible. The first two chapters were very important to make sure the book could be read by anyone, even if they have no experience in machine learning. In this review, I emulate Broussard's attention to the reader's understanding by giving a brief account of machine learning. Machine learning takes historical data and instructs the computer to make a model. The model is a mathematical construct that allows the computer to predict patterns in data based on what already exists. The fact that algorithms are based on math gives a lot of people the idea that algorithms can't be biased; throughout this book Meredith Broussard proves this thinking to be extremely faulty.

Technology reflects society, and whether the bias is unconscious or not, it is still reflected in many of our modern technological advancements. This backs up the truth behind the title of this book. Ableism, gender bias, and sexism are not just glitches or blips that show their ugly heads in technology. Biases are built into the system from the foundations. In order to change this, we must look at how innovation in technology is created, specifically algorithms. When an algorithm is created, they first create a training dataset with test cases. One of the main problems that can arise with this is "edge cases." Edge cases are trying to train an algorithm to know what is not "normal," so the creator will use their own understanding of what's normal and what isn't to create these edge cases. Everyone's version of normal is different, and I could immediately see how this could cause problems. The lack of diversity in engineering is one of the catalysts of this problem because if there was more diversity then more people's life experiences would be considered. Then because there are more diverse life experiences, there is a lower chance that someone's "normal" is only a few people's normal.

In chapters six through nine, Meredith Broussard discusses many powerful stories on how algorithmic biases have impacted lives. She first tells of the classic cases like the racist soap dispenser, paper towel dispenser, and Kodak cameras. If you are unfamiliar with these cases the soap and paper towel dispenser ended up being "racist" because the engineering team didn't have a team with a wide variety of skin tones. The soap dispenser would only really dispense soap for people with lighter skin tones, it would have a harder time dispensing soap if the skin tone was darker. The same was true with the paper towel dispenser. The problem with the Kodak camera was that dark-skinned people looked muddy on film because Kodak didn't tune the photo lab equipment for people with dark skin. Those examples are the classic examples, some of which I heard about in my diversity for engineering class, but there are much worse cases that negatively impacted many lives for the worse.

Broussard spends two chapters speaking on algorithmic bias in the justice system. These chapters were some of the most confounding for me, and I really saw the very real and serious implications algorithms and technology can have on people's lives on a large scale. In January of 2020, Robert Williams was arrested at his home in front of his wife and two young daughters and brought to a police precinct. The police had wrongly identified him as a suspect in a robbery that had happened one year prior. They had arrested him because Facial Recognition Technology (FRT) had wrongly identified him. FRT is known to work better on light skin tones, better on women than men, and the worst on Black and Brown people. If FRT has so many opportunities for mistakes with real life implications, why is it being used? Law enforcement famously does not have a good track record when it comes to using high-tech tools for policing. Believing as technochauvinists, law

AWM DEADLINES

RCCW Proposals: July 1, 2024

NSF-AWM Mentoring Travel Grants
for Women: August 15, 2024

AWM Workshop at the 2025 Joint
Mathematics Meetings: August 15, 2024

AWM-AMS Noether Lecture:
September 15, 2024

AWM Alice T. Schafer Prize:
September 15, 2024

AWM Dissertation Prize:
September 15, 2024

AWM-SIAM Kovalevsky Lecture:
September 15, 2024

AWM Workshop at the 2025 SIAM
Annual Meeting: November 15, 2024

BOOK REVIEW *continued from page 3*

enforcement often jumps at any new tech that will better their system of policing.

Predatory policing issues from using predictive police software was a topic Broussard struck me with next. Problems in the justice system are things I have delved into personally, so hearing about more problems really struck my heart. Recently, police forces have been using predictive software to try and predict where crimes could happen and intervene before they happen, as well as the kinds of people who could be doing these crimes. This dream has been sold to many public officials, but this dream has unfortunately turned to a nightmare for many. Predictive policing technology ends up being biased against Black people, Brown people, under-resourced people, and LGBTQIA+ people.

Compstat is one of the more popularly used and well-known predictive data-driven software. Compstat was adopted in major American cities in the 1990s and early 2000s. Compstat and the training for how to use Compstat taught police executives to prioritize quantification over accountability. This led to techno-chauvinism being the culture in police departments, because they believed that the technology was objective and neutral. As we learned earlier, technology can very much be racist, ableist, and sexist. So that thinking was far from the truth. Those were the two big problems Broussard brought about policing, the first one being FRT that persecutes innocent people after a crime has been committed, and the second predictive policing software that persecutes people before a crime has been committed.

Many people believe that revisiting and revising software would be the solution, but according to a fairness scholar, Jon Kleinberg, it is mathematically impossible for algorithms to treat Black and white people fairly. Throughout the book she didn't always give her thoughts on a complete solution in every chapter, which led me to do a lot of thinking on my own. That is a choice I really am happy that Broussard made.

In the final chapters she gives us a well-rounded solution, one I wasn't exactly expecting. In my personal experience the main solution I have been hearing to help bias in technology is simply more diverse data sets and engineering teams. Meredith Broussard agrees with this, but takes it to a place I would not have imagined. This is the solution Broussard paints. In the United States the FTC (Federal Trade Commission) points out three laws that software and algorithms should be following. Until very recently software developers have not been held accountable for following these laws. That is when algorithmic auditing needs to come into play. This kind of auditing was like the missing piece for me when I would think of a solution for this problem on my own, both before I read this book and after. Algorithmic auditing is the process of examining an algorithm for bias or unfairness, then evaluating and revising it to make it better. This is a complicated process, and "fixing" an algorithm is not an easy or simple task, but if it is done by an organization, it does have promise. Algorithmic auditing should be part of the compliance process in the US. This has been more prominent in other countries than the US thus far.

Speaking of implementation, there are about twenty-one different mathematical definitions of fairness. Broussard describes how it's mathematically unlikely that an algorithm can meet more than one category of fair. So, a definition of fairness would be chosen that the algorithm must meet. Similar algorithms would also then be held to that same level of fairness.

O'Neil Risk Consulting & Algorithmic Auditing (ORCAA) is one of the leading algorithmic auditing organizations in recent years. They audit an algorithm by asking it two questions. The first question being what does it mean for this algorithm to work? The second question being how could this algorithm fail, and for whom? Their approach is inclusive; they incorporate what the concerns for the stakeholders are, not just who made it or deployed it. They also take into account the affected community in an audit in order to evaluate whether harm has occurred.

More Than a Glitch by Meredith Broussard is an essential read for anyone interested in technology and innovation. Broussard's thorough analysis of different biases in algorithms in many aspects of society was thought-provoking in every chapter. This book not only educates but also inspires readers to think critically about how technology and algorithms reflect societal biases, and how that impacts the way we innovate and critique algorithms in society.

AWM Workshop at the 2025 SIAM ANNUAL MEETING

Application deadline for graduate student poster session: November 15, 2024

For many years, the Association for Women in Mathematics has held a series of workshops in conjunction with major mathematics meetings. The AWM Workshops serve as follow-up workshops to Research Collaboration Conferences for Women (RCCW), featuring speakers from one of the AWM Research Networks. An AWM Workshop is scheduled to be held in conjunction with the 2025 SIAM/CAIMS Annual Meeting in Montreal, Quebec, Canada, July 28 – August 1, 2025.

FORMAT: The workshop will consist of two research minisymposia focused on Women in the Science of Data and Mathematics organized by Jamie Haddock and Anna Little, a poster session, and a professional development session. The research minisymposia will feature selected junior and senior mathematicians from the Research Network Women in the Science of Data and Mathematics (WiSDM). This workshop follows the RCCW that took place in August 2023 at the Institute for Pure and Applied Mathematics.

POSTER SESSION: The poster session is open to all areas of research; graduate students working in areas related to data science are especially encouraged to apply. Poster presenters will be selected through an application process to present at the workshop reception and poster session. With funding from NSF, AWM will provide partial travel support to selected graduate students for their participation in the AWM Workshop. Furthermore, the Diversity Committee of the Mathematical Sciences Institutes sponsors all poster presenters to attend a week-long workshop of the presenter's choice (restrictions apply) at one of the participating Mathematical Sciences Institutes. The workshop will include a luncheon and a mentoring session where workshop participants will have the opportunity to meet with other women and non-binary mathematicians at all stages of their careers.

ELIGIBILITY: To be eligible for selection and funding, a graduate student must have made substantial progress towards their thesis.

All applications should be submitted on mathprograms.org and include:
- a title of the proposed poster
- an abstract (75 words or less) of the proposed poster
- a curriculum vitae
- a letter of recommendation.

Applications must be completed electronically by **November 15, 2024**. See https://awm-math.org/meetings/awm-siam/ for details.

MENTORS: We seek volunteers to act as mentors for graduate students as part of the workshop. If you are interested in volunteering, please contact the AWM office at awm@awm-math.org by **May 15, 2025**.

Mathematicians of all genders are invited to attend the talks and poster presentations. Departments are urged to help graduate students and junior faculty who are not selected for the workshop obtain institutional support to attend the presentations.

EDUCATION COLUMN

Education Column Editor: Jackie Dewar, Loyola Marymount University, jdewar@lmu.edu

On Being Department Chair: An Update to an Unwritten Article

Jacqueline Dewar, Emerita Professor of Mathematics, Loyola Marymount University

In August of 1983, after a sabbatical year, I returned to work at Loyola Marymount University (LMU). I had a 3-month-old daughter and a 5-year-old son. In addition to coming back to my faculty position, I also became department chair. You probably are wondering: *What was she thinking?* Actually, I very much wanted to be chair for reasons I'll mention later. In 2004, a different set of circumstances led to my becoming department chair for the second time. Some things about the job had certainly changed in the intervening 20 years. At the time, I had a neat way of describing some of those changes. I wasn't yet writing for this column, or I might have written a column about it then. Well, another 20 years have passed, and I have decided to write about my previous thoughts on how the chair's job had changed between 1983 and 2004 and add on another 20-year update.

In 2004, I found myself telling people there had been three big changes since 1983. First, both the mathematics faculty and the overall student body at LMU had roughly doubled in size. I jokingly said that meant there were twice as many opportunities to have an unhappy person walk into my office.

Second, technology had changed tremendously. In 1983, the department possessed two computers, each on a wheeled cart with a big TV-like display on the top shelf. These were wheeled into classrooms to be used for demonstrations. Twenty years later, every faculty member had a computer on their desk, computers were standard fixtures in the classroom, and the department had two computer labs for students (one with Apples, and one with PCs) each containing about 20 computers. Right away, before school started in fall 2004, I encountered a password issue with Maplesoft. However, the person who knew the password, the former chair, was away on sabbatical. *Password, password, who has the password?* I made a phone call to Maplesoft's headquarters in Canada, wishing the former chair's first name had been Michele and not Michael, so that I could pretend to be him without my voice giving me away. Fortunately, the Maplesoft issue was resolved easily, but there were still 60 or so computers under my responsibility as compared to two.

And third, as I like to say, there was the *A-word*: A for *Assessment!* In 1983, there was no such thing as "Program Assessment." In 2004, assessment was basically a dirty word as faculty and chairs alike struggled to understand what it meant and how they should deal with it. Doing assessment is a valuable exercise, but doing it well takes a lot of time, and it was a steep learning curve.

As a retiree, in order to give another 20-year update, I consulted with colleagues who were recently department chairs or in administrative positions who worked closely with chairs. As above, I am limiting my remarks to just three issues. Despite being retired for a decade, I came up with two of them on my own.

Top of the list are post-pandemic problems. These range from a huge increase in students needing social/emotional support to the number of entering STEM students lacking basic math skills due to the enormous challenge of shifting pre-college math instruction to virtual classrooms in the early days of the pandemic (Binkley, 2023).

Another change concerns diversity and inclusion. In 2001, LMU appointed its first vice-president for "Intercultural Affairs." The role of this position, now called Vice President for Diversity, Equity & Inclusion (DEI), has grown substantially, as has attention to DEI across higher education. Not only that, but DEI has become a highly politicized topic. Suffice it to say, DEI concerns related to faculty (hiring especially) and students are now on the department chair's agenda in new and contentious ways compared to 2004.

Not surprisingly, advances in technology since 2004 provide mathematics chairs and faculty with new challenges. These include internet access to the solution for virtually any mathematics textbook problem, whether through "shady" homework sites, the use of online mathematical software, or ChatGPT. New, or newly adopted, technology used for administrative work (e.g., scheduling, budgeting, etc.) also adds to a chair's workload; that is, the chair (or faculty member) becomes the one doing the data input. The technology that enabled instruction to continue remotely during the pandemic now fuels conflicts over the mode of instruction (i.e., requiring a return to in-person instruction versus continuing remotely) as well as whether departments should continue to offer a virtual attendance option for department meetings despite a perceived loss of community.

One thing has not changed: "People problems" remain a large part of what keeps a chair busy.

I want to end with some observations about positive aspects of being department chair. The following are the sorts of things that motivated me to take on the position the first time. While being chair involves a lot of administrative duties and sometimes headaches, it provides a platform to advocate for students and faculty. As chair, you have the opportunity to work (hopefully collaboratively) from a place of more influence to address long-standing concerns, strengthen the curriculum, advocate for more resources, and potentially make a difference for the better in departmental climate. You will also have access to other perspectives on college and university procedures and priorities; this can be enlightening. Being chair is definitely a learning experience! To learn more about being chair, you might want to read Gmelch (2015). And, if you become a chair, try to attend a professional development workshop on chairing a mathematics department.[1]

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[1] See, for example, http://www.ams.org/profession/leaders/workshops/chairsworkshop.

NOTE: If you feel my 2024 update has missed an important change or new development in chairing a department (or another reason to become chair), please email me (jdewar@lmu.edu) and I will write a follow-up to this column including whatever new ideas or thoughts I receive.

References

Binkley, Collin. (2023, August 30). College students are still struggling with basic math. Professors blame the pandemic. *AP News.* Available at https://apnews.com/article/college-math-test-help-6cca6a5e873d5aeb5e75b4f94125d48c

Gmelch, W. (2015). The call for leadership: Why chairs serve, what they do, and how long they should serve. A*KA Monographs: Leading and Managing the Kinesiology Department*, 1(1), 1–12.

NSF-AWM Travel Grants for Women

Mathematics Travel Grants. The objective of the NSF-AWM Travel Grants is to enable women mathematicians to attend conferences in their fields, which provides them a valuable opportunity to advance their research activities and their visibility in the research community. Having more women attend such meetings also increases the size of the pool from which speakers at subsequent meetings may be drawn and thus addresses the persistent problem of the absence of women speakers at some research conferences. The Mathematics Travel Grants provide full or partial support for travel and subsistence for a meeting or conference in the applicant's field of specialization.

Selection Procedure. All awards will be determined on a competitive basis by a selection panel consisting of distinguished mathematicians appointed by the AWM. A maximum of $2300 for domestic travel and of $3500 for foreign travel will be funded. For foreign travel, US air carriers must be used (exceptions only per federal grants regulations; prior AWM approval required).

Eligibility and Applications. Please see the website (https://awm-math.org/awards/awm-grants/travel-grants/) for details on eligibility and do not hesitate to contact awm@awm-math.org or 401-455-4042 for guidance. Applications from members of underrepresented minorities are especially welcome.

Deadlines. There are three award periods per year. Applications are due **February 15**, **May 15**, and **October 1**.

Math Moves!

Ruth Charney, Brandeis University

The Joint Mathematics Meetings (JMM) were held this year in San Francisco at the beginning of January. The program was packed with exciting activities organized by over 20 different societies and organizations. Choosing which events to attend was a challenge! One event that stood out as unique was a dance performance entitled *Nevertheless She Persisted: The Daughters of Hypatia, a Mathematical Herstory*. As a mathematician with a longstanding passion for dance, I put this item on my schedule, highlighted as a *do-not-miss* event.

The dance was performed by the MoveSpeakSpin dance company, co-directed by Karl Schaffer and Erik Stern. Founded in 1987, the company tours internationally and does performances for children and adults that intertwine dance, mathematics, history, and storytelling. The dance at the JMM was performed by seven members of MoveSpeakSpin, plus guest artist and mathematician sarah-marie belcastro. The performance included 22 sections, celebrating great women mathematicians throughout the ages, beginning with Hypatia in the first century AD, and continuing up through recent times. It also featured a section on "computer girls" from the mid 1900s, and another on the stories of the performers themselves and their involvement with mathematics.

Artistic director Karl Schaffer, who also holds a PhD in mathematics, was the lead choreographer for most sections but he describes the process of producing the pieces as "highly collaborative" with contributions from the dancers themselves. The stories were told on stage by the dancers as they performed, and by the narrator, Saki, a key member of the company since 2001. The dances were accompanied by photos projected on screen and by music from a variety of composers, including "mathemusician" Vi Hart and Zambra, a women's global vocal music ensemble.

The choreography incorporates mathematical ideas in a variety of ways, sometimes involving props such as large hoops, colored cubes, or strings, and in other cases highlighting geometric patterns in the movement itself. Some pieces focus on the mathematical contributions of a particular mathematician. Others, such as the section on Vivienne Malone-Mayes, one of the first Black women to receive a PhD in mathematics in the South, reflect the challenges faced by women in the field and their struggles to break barriers.

The company also performed at a math-variety show held one evening at a nearby theater where they showcased three additional sections of *The Daughters of Hypatia*. One of my absolute favorite pieces was called "Trio for Six." It involved three dancers, hidden behind an opaque screen with slits just large enough to slip a hand through. The dance consisted of six hands "dancing" in changing patterns and positions on the screen. It was mind-bogglingly fun and interesting!

I frequently notice mathematical patterns in dance performances, and dance as a visual expression of mathematics seems quite natural. Incorporating stories of female mathematicians into the movement, on the other hand, is certainly unique. Kudos to the MoveSpeakSpin company and to the JMM for including this event!

NOTE: For more details about the history of the dance company and the development of the dance itself, see the article by Karl Schaffer in *Women in Mathematics, Celebrating the Centennial of the Mathematical Association of America*, Springer AWM Series, Vol. 10 (2017).
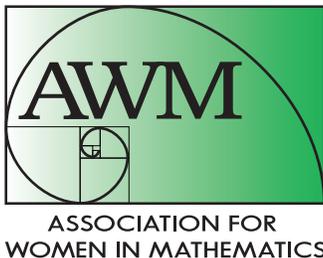
AWM Workshop at the 2025 Joint Mathematics Meetings

Application deadline for graduate student poster session: August 15, 2024

For many years, the Association for Women in Mathematics has held a series of workshops in conjunction with major mathematics meetings. The AWM Workshops serve as follow-up workshops to Research Collaboration Conferences for Women (RCCW), featuring both junior and senior speakers from one of the AWM Research Networks. An AWM Workshop will be held in conjunction with the Joint Mathematics Meetings in Seattle, WA, January 8–11, 2025.

FORMAT: The JMM workshop will include **Special Sessions** showcasing recent work by two of the AWM Research Networks. A **Women in Operator Algebras** session will be organized by Maria Grazia and Sarah Reznikov, and a **Women in Groups, Geometry, and Dynamics** session will be organized by Carolyn Abbott and Rachel Skipper. A juried **Poster Session** for graduate students, a **Professional Development Panel**, and a **Mentoring Luncheon** are all being organized by the AWM JMM organizing committee.

POSTER SESSION: The Poster Session is open to all areas of research; graduate students working in areas related to operator algebras or in areas related to groups, geometry, and dynamics are especially encouraged to apply. Poster presenters will be selected through an application process.

AWM will provide partial travel support to selected graduate students for their participation in the AWM Workshop, thanks to the National Science Foundation. Furthermore, the Diversity Committee of the Mathematical Sciences Institutes sponsors all poster presenters to attend a week-long workshop at one of the participating Mathematical Sciences Institutes.

ELIGIBILITY: To be eligible for participation and funding, a graduate student must have made substantial progress towards their thesis.

All applications should be submitted on mathprograms.org and include:
- a title of the proposed poster
- an abstract in the form required for AMS Special Session submissions for the Joint Mathematics Meetings
- a curriculum vitae
- one letter of recommendation from the applicant's thesis advisor.

Applications must be completed electronically by **August 15, 2024**. See https://awm-math.org/meetings/awm jmm/ for details.

MENTORS: We seek volunteers to act as mentors for graduate students as part of the workshop. If you are interested in volunteering, please contact the AWM office at awm@awm-math.org by **September 15, 2024**.

JUDGES: We also seek volunteers to act as judges for the Poster Session. If you are interested in volunteering, please contact the AWM office at awm@awm-math.org by **September 15, 2024**.

Mathematicians of all genders are invited to attend the talks and poster presentations. Departments are urged to help graduate students and junior faculty who are not selected for the workshop to obtain institutional support to attend the presentations.

SIAM Annual Meeting

siam. | Society for Industrial and Applied Mathematics

Spokane Convention Center, Spokane Washington
July 8–12, 2024, all times Pacific Daylight Time
Full Program available at: https://meetings.siam.org/program.cfm?CONFCODE=AN24

TUESDAY, JULY 9, 2024
AWM Workshop: Poster Session

8:00 – 10:00 pm, Hall C, Spokane Convention Center

Chairs: Heather Brooks, Harvey Mudd College
Nancy Rodriguez, University of Colorado Boulder
Alexandria Volkening, Purdue University

AWM's Minisymposterium for graduate students and recent PhD recipients

Graduate Student Poster Presenters:
- *Sandra Babyale*, Boise State University, Choice of Model Error Covariances for Data Assimilation with the Transport Equation
- *Allison Cruikshank*, Duke University, Sex Differences in Glutathione Metabolism and Their Consequences
- *Amara R. Eze*, Morgan State University, An Inertial Iterative Scheme for Solving Variational Inclusion Problems with Applications
- *Evangelia Ftaka*, North Carolina State University, Piecewise Smooth Solutions to Scalar Balance Laws with Singular Source Terms
- *Kimberly Hadaway*, Williams College, Directional Derivative of Kemeny's Constant
- *Asees Kaur*, University of California, Merced, Improving Digital Subtraction Angiography (dsa) Image Segmentation with Cnns
- *Swarnalakshmi Lakshmanan*, University of Hawaii, Automatic Complexity and Quantum Logic over Finite Fields
- *Praveeni O. Mathangadeera*, Oregon State University, Sensitivity Analysis of a Permafrost Model Responding to Surface Temperature Variations in Variable Topography
- *T H Molena Nguyen*, North Carolina State University, Parallel Recursive Skeletonization Solver for Dense Linear Systems on Gpu-Accelerated Computers
- *Jocelyn Ornelas-Munoz*, University of California, Merced, From Observations to Theoretical Consistency: Decoder Recovery in Coded Aperture Imaging
- *Connor Parrow*, University of Notre Dame, A Second-Order Partitioned Method for Fluid-Poroelastic Structure Interaction
- *Rhea Shroff*, University of Florida, Accelerating the Computation of Tensor Z Eigenvalues
- *Arshia Singhal*, Rice University, Closed-Loop Solute Transport in Blood Vessels
- *Moyi Tian*, Brown University, Efficiently Learning Models of Dynamic Networks
- *Gauree Wathodkar*, University of Mississippi, Generalization of Sárközy's Theorem in Function Fields
- *Madushi U. Wickramasinghe*, Morgan State University, Efficient Generalized Exponential Integrator Scheme For Solving Non-Integer Order Differential Equations

WEDNESDAY, JULY 10, 2024
AWM Workshop: Minisymposium on Complex and Nonlinear Systems, Part I

8:15–10:15 am, Room 300D, Spokane Convention Center

Organizers AWM's SIAM Committee:
Heather Brooks, Harvey Mudd College
Nancy Rodriguez, University of Colorado Boulder
Alexandria Volkening, Purdue University

8:15 – 8:40 am
Moumita Das, Rochester Institute of Technology
Rigidity and resilience in network-like biomaterials

8:45– 9:10 am
Malena I. Espanol, Rosalind Sadleir, and Mason Manning, Arizona State University; Shelby Horth, Wake Forest University.; Nicholas Wharff, Drake University; Jacob Roarty, Arizona State University
A Deep Learning Approach for the Electrical Impedance Tomography Problem

9:15 – 9:40 am
Tahra Eissa and *Zachary P. Kilpatrick*, University of Colorado Boulder
Multi-Timescale Plasticity in Working Memory

9:45 – 10:10 am
Keisha Cook, Clemson University
Mathematical Insights into the Quantification of Endosomal Escape

AWM-SIAM Sonia Kovalevsky Lecture

10:45 – 11:30 am, Hall C, Spokane Convention Center

Sunčica Čanić, University of California, Berkeley

Mathematics for Bioartificial Organ Design

The future of bioartificial organ design is poised with tremendous promise. Achieving success in this field necessitates collaborative efforts among experts spanning diverse domains such as biology, medicine, engineering, materials science, and mathematics. This presentation aims to illuminate the pivotal role played by recent advancements in mathematical analysis and numerical method development in studying the interplay between fluids and poroelastic media (fluid-poroelastic structure interaction), and how these innovations have significantly contributed to the design of a bioartificial pancreas for the treatment of Type 1 and Type 2 diabetes.

AWM Workshop: Minisymposium on Complex and Nonlinear Systems, Part II

4:00 – 6:00 pm, Room 300D, Spokane Convention Center

Organizers AWM's SIAM Committee:
Heather Brooks, Harvey Mudd College
Nancy Rodriguez, University of Colorado Boulder
Alexandria Volkening, Purdue University

4:00 – 4:25 pm
Selenne Bañuelos, California State University, Channel Islands; Zhiyuan Yu, University of Michigan; Tiffany Luong and Andrew Sue, San Diego State University; Mary Ann Horn, Case Western Reserve University; Hwayeon Ryu, Elon University; Qimin Huang, Case Western Reserve University.; Rebecca Segal, Virginia Commonwealth University; Dwayne Roach, San Diego State University

A Mathematical Model to Investigate the Potency and Longevity of Phage Cocktails for Combating Antibiotic-Resistant Infections

4:30 – 4:55 pm
Nina Fefferman, University of Tennessee, Knoxville; Alice C. Schwarze, Dartmouth College; Mari Kawakatsu, University of Pennsylvania; Sarah Iams, Harvard University; Tahra Eissa, University of Colorado Boulder

Individual Motivations, Collective Behaviors: Increasing the realism of social psychological theory in models of emergent collective action

5:00 – 5:25 pm
Sarah Tymochko, University of California, Los Angeles; Abigail Hickok, Columbia University; Gillian Grindstaff, Jiajie Luo, and Mason A. Porter, University of California, Los Angeles

Using Persistent Homology to Analyze Access to Resources with Heterogenous Quality

5:30 – 5:55 pm
Kaitlin Hill, St. Mary's University; Xuan Kelsy Fei and John Gemmer, Wake Forest University

Most Probable Transition Path to An Ice-Free State in the Arctic

THURSDAY, JULY 11, 2024
AWM Panel: Career Advancement at All Stages

Chairs: Heather Brooks, Harvey Mudd College
Nancy Rodriguez, University of Colorado Boulder
Alexandria Volkening, Purdue University

8:30 – 10:30 am, Room 300D, Spokane Convention Center
AWM Workshop: Panel on Career Advancement at All Stages

Panelists:
Sarah Tymochko, University of California, Los Angeles
Malena I. Espanol, Arizona State University
Ulrica Wilson, Morehouse College
Robyn Shuttleworth, Altos Labs

12:30 – 2:00 pm, Room 300B, Spokane Convention Center
Mentoring Lunch: *An invited lunch for AWM Mentors, Judges, and Graduate Student Workshop Participants and Invited Guests*

#AWMBooth
Please consider volunteering to staff the AWM booth for a 2 hour block. This is a great opportunity to meet other women in math, as well as learn (and share!) more about the many opportunities within AWM. If you are interested, please email ed.admin@awm-math.org to sign up.

The AWM 2024 SIAM Organizing Committee
A special thanks to the AWM committee members who have helped organize this year's program!

Jamie Haddock, Harvey Mudd College
Lakiesha Legette Jones (AWM Meetings Coordinator),
Clark Atlanta University
Anna Little, University of Utah
Malgorzata Peszynska, Oregon State University
Noemi Petra (Chair), University of California, Merced
Alexandria Volkening, Purdue University
Heather Zinn Brooks, Harvey Mudd College

AMM-MAA Etta Zuber Falconer Lecture

Deanna Needell, *University of California, Los Angeles*

AWM Events at MAA MathFest 2024

August 7–10, 2024, Indianapolis, IN

All times are Eastern Daylight Time

Registration and Full Schedule: https://www.maa.org/meetings/mathfest

Towards Fairer-ness in Machine Learning

Thursday, August 8, 9:00 – 9:50 am, JW Grand Ballroom 5/6

In this talk, we will address several areas of recent work centered around the themes of transparency and fairness in machine learning as well as highlight the challenges in this area. We will discuss recent results involving linear algebraic tools for learning, such as methods in non-negative matrix factorization that include tailored approaches for fairness. We will showcase our derived theoretical guarantees as well as practical applications of those approaches. These methods allow for natural transparency and human interpretability while still offering strong performance. Then, we will discuss new challenges and directions in fairness including an example in large-scale optimization that allows for population subgroups to have better predictors than when treated within the population as a whole. Throughout the talk, we will include example applications from collaborations with community partners, using machine learning to help organizations with fairness and justice goals.

The Association for Women in Mathematics and the Mathematical Association of America annually present the Etta Zuber Falconer Lecture to honor women who have made distinguished contributions to the mathematical sciences or mathematics education. While the lectures began with MathFest 1996, the title "Etta Zuber Falconer Lecture" was established in 2004 in memory of Falconer's profound vision and accomplishments in enhancing the movement of minorities and women into scientific careers. Etta Zuber Falconer herself (featured) was the 1995 winner of the AWM Hay Award. Read Dr. Falconer's citation for this award and learn how to nominate women to be the next Etta Zuber Falconer Lecturer at the AWM website.

Iterative and Sketching Approaches for Linear Systems and Beyond

IPS Part A: Thursday, August 8, 3:30 – 6:00 pm, JW Grand Ballroom 8
IPS Part B: Friday, August 9, 8:00 – 10:00 am, JW Grand Ballroom 8

Iterative and sketching approaches play crucial roles in solving linear, convex, and even non-convex systems, offering different strategies for handling various types of problems. Iterative methods involve repeatedly refining an initial guess for the solution until it converges, and often act on small amounts of data at a time, making them amenable to large-scale and/or sparse problems. Sketching approaches, often inspired by techniques from signal processing, provide a more efficient way to approximate solutions in situations where the system is overdetermined or ill-conditioned. They reduce the computational burden by sampling or sketching the
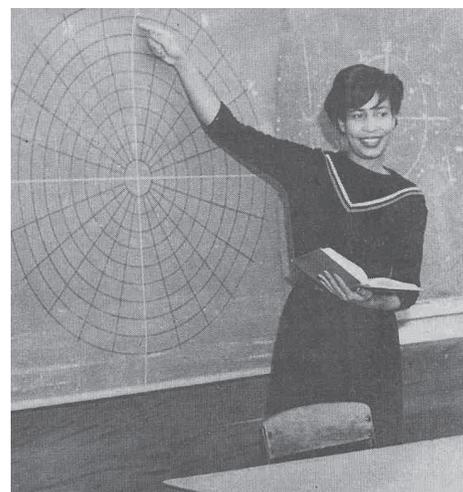
input data, thus making it feasible to solve systems that would be computationally infeasible using traditional methods. Both approaches offer valuable tools in the realm of linear system solvers and beyond, allowing for flexibility in choosing the most suitable method depending on the problem's characteristics and computational resources available. Work on these methods, their applications, their theoretical underpinnings, and their connections to machine learning are welcome.

Organizer: Deanna Needell, University of California, Los Angeles

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How to Hire a Math Educator: Considerations for Mathematics Departments
Panel: Friday, August 9, 2:00 – 3:20 pm, JW Grand Ballroom 2

The goal of the panel is to discuss the challenges that mathematics educators face when working in mathematics departments that do not have mathematics education research as part of their portfolio and to use examples of both supportive and less supportive situations to give attendees tools to build constructive spaces for all faculty to flourish. This session is sponsored by the Education Committee of the Association of Women in Mathematics.

Panelists: Yvonne Lai, University of Nebraska-Lincoln
                     Jessica Ellis Hagman, Colorado State University
                     Shari Stockero, Michigan Tech University
                     Elsa Medina, Cal Poly, San Luis Obispo

Moderator: Danté Tawfeeq, John Jay College of Criminal Justice, CUNY

AWM Education Committee Members:
Rachel Chaphalkar, University of Wisconsin-Whitewater; Mayra Ortiz Galarza, University of Texas Rio Grande Valley; Rachael Kenney, Purdue University; Elsa Medina, Cal Poly San Luis Obispo; Vilma Mesa, University of Michigan; Natalie Naehrig, University of Washington; Danté Tawfeeq, John Jay City University of New York

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AWM Student Chapter Awards—with Sweet Treats!
Friday, August 9, 8:00 – 10:00 pm, White River Ballroom E

Each year the AWM recognizes outstanding achievements in chapter activities among the AWM Student Chapters. Awards will be given in four categories: (1) community outreach; (2) funding and sustainability, (3) professional development, and (4) scientific excellence. These awards will be given out at the MAA Student Dessert Reception on Friday night. Come celebrate with us!

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Mathematical Games and Puzzles: Fun for All!
Saturday, August 10, 10:30 – 11:50 am, JW Grand Ballroom 2

Join us for some fun with mathematical games and puzzles! For many in the mathematics community, games or puzzles sparked our initial interest in mathematics. Such activities continue to serve as a source of enjoyment and entertainment. This highly-interactive workshop aims to bring faculty, students, and other members of the mathematics community of all ages together to experience new mathematical games and puzzles and to share their own favorites. Some will involve physical components, while others may be played with pencil and paper alone. (Feel free to bring one in any form!) After learning of new mathematical games and puzzles, participants can return home to share them with others. Perhaps you will incorporate a game or puzzle into a course or research experience, develop an associated activity for a science festival, share the fun with math club members, or simply play with friends and family. This session is sponsored by the Association for Women in Mathematics.

AWM MathFest Committee Members:

Janet Fierson, La Salle University; Sarah Kerrigan, George Fox University; Julia Plavnik, Indiana University; Buna Sambandham, Utah Tech University; Jeanette Shakalli, Panamanian Foundation for the Promotion of Mathematics (FUNDAPROMAT); Mariana Smit Vega Garcia, Western Washington University

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Mental Health in the Mathematics Community

Panel: Saturday, August 10, 3:00 – 4:20 pm, JW Grand Ballroom 2

Mental health remains a topic of widespread concern in the mathematics community. This panel continues the conversation on the subject that was initiated through a panel at last year's MAA MathFest. This year, the session will include strategies for improving the mental health of individuals and groups. It will also allow for the sharing of progress that has been made locally and more globally in addressing some of the common issues that negatively impact the mental health of faculty, students, and others in the mathematics community. Attendees will benefit from the professional and personal experiences of the panelists, who collectively contribute diverse perspectives as faculty members, researchers in the emotional aspects of learning mathematics, and mental health professionals. We once again hope to encourage an open and empathetic dialogue to raise awareness, inspire positive change, and improve the well-being of our unique and vibrant community.

Panelists: Geillan Ally, Compassionate Math
Taína Amaro, Harmony Health Therapy
Allison Henrich, Seattle University
Matthew Pons, North Central College

Moderator: Jeanette Shakalli, FUNDAPROMAT

AWM MathFest Committee Members:

Janet Fierson, La Salle University; Sarah Kerrigan, George Fox University; Julia Plavnik, Indiana University; Buna Sambandham, Utah Tech University; Jeanette Shakalli, Panamanian Foundation for the Promotion of Mathematics (FUNDAPROMAT); Mariana Smit Vega Garcia, Western Washington University

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Visit the AWM Booth in the Exhibit Hall

Swing by the AWM booth, buy a T-shirt, learn about the many programs AWM has to offer and meet other AWM'ers! Are you interested in volunteering your time at the booth? Email ed.admin@awm-math.org to help out.

The AWM 2024 MAA MathFest Organizing Committee

A special thanks to the AWM committee members who have helped organize this year's program!

Janet Fierson, LaSalle University
Sarah Kerrigan, George Fox University
Lakiesha Legette Jones (AWM Meetings Coordinator), Clark Atlanta University
Julia Plavnik, Indiana University
Bhuvaneswari (Buna) Sambandham, Utah Tech University
Jeanette Shakalli (Chair), Government
Mariana Smit Vega Garcia, George Fox University

CALL FOR PAPERS

New Article Collection on Applied Monte Carlo Methods

We invite contributions to a new article collection on "Applied Monte Carlo Methods" for *La Matematica*, the official journal of the Association for Women in Mathematics (published by Springer). The goal of this topical collection is to present a multitude of uses of Monte Carlo methods driven by diverse applications in cutting edge fields of research, including biological modeling, neural networks, RNA dynamics, granular materials, and water filtration. We invite manuscripts focused on algorithm development as well as updates of existing methods in the context of specific real-world applications.

For details and submission instructions, please see: https://link.springer.com/journal/44007/updates/26871398

Submission is now open. The deadline for submissions is **August 31, 2025**, and rolling thereafter. *La Matematica* uses double-blind peer review.

Please do not hesitate to contact us with questions, and we look forward to receiving your articles!

Guest Editors:

Francesca Bernardi, fbernardi@wpi.edu, Assistant Professor of Mathematical Sciences, Worcester Polytechnic Institute

Andrea Arnold, anarnold@wpi.edu, Associate Professor of Mathematical Sciences, Worcester Polytechnic Institute

Analytic Number Theory and Arithmetic Statistics Conference

The Analytic Number Theory and Arithmetic Statistics conference will be held at Centre de recherches mathématiques in Montréal, Canada, on August 26–30, 2024. It celebrates Chantal David's contributions to the field of analytic number theory and arithmetic statistics, as well as her investment towards the community as both a leader and a mentor. The conference will be focused on analytic number theory, and more specifically, elliptic curves statistics, and distribution of L-functions. There will be a special day titled "Successes of WIN" dedicated to women presenters reporting collaborative work. Junior participants who need funding are encouraged to apply no later than March 15. For more details and registration, visit https://www.crmath.ca/en/activities/#/type/activity/id/3936.

CALL FOR NOMINATIONS

Alice T. Schafer Mathematics Prizes

The Executive Committee of the Association for Women in Mathematics calls for nominations for the Alice T. Schafer Mathematics Prize to be awarded to undergraduate women for excellence in mathematics. All members of the mathematical community are invited to submit nominations for the Prize. The nominees may be at any level in their undergraduate careers, but must be undergraduates as of September 15, 2024. They must either be a US citizen or have a school address in the US. Two Schafer Prizes and one runner-up will be awarded at the Joint Mathematics Meetings in Seattle Washington.

Anyone can be a nominator, whether or not they are AWM members. Self-nominations are permitted, in which case there must be at least one additional letter of support. Nominations of members of underrepresented minorities and of students attending institutions with limited resources are especially encouraged. One letter of nomination (at most three pages) highlighting the exceptional qualities of the candidate to be recognized. The letter of nomination may include (but is not limited to) an evaluation of the nominee on the following criteria: quality of performance in advanced mathematics courses, special programs, or mathematical competitions; mathematical growth of the nominee; nominee's ability to overcome barriers in their mathematical journey; nominee's ability to seek out and make the most of resources both at and outside of their institution; ability for independent work in mathematics or ability to work equitably in a team in mathematics.

With the letter of nomination, please include a copy of transcripts that indicate expected graduation date. Any additional supporting materials (e.g., reports from summer work using math, copies of talks given, recommendation letters from professors, colleagues, etc.) should be included with the nomination. All nomination material is to be submitted as ONE PDF file via MathPrograms.org. The submission link will be available 45 days prior to the deadline. Nominations must be received by **September 15, 2024**. If you have questions, phone 401-455-4042, email awm@awm-math.org, or visit https://awm-math.org/awards/schafer-prize-for-undergraduates/.

The Sylvia Bozeman and Rhonda Hughes EDGE Foundation Announces Amy Buchmann and Hwayeon Ryu as the inaugural recipients of the Mary Beth Ruskai Research Fund for Women

The EDGE Foundation is delighted to announce Amy Buchmann and Hwayeon Ryu as the inaugural recipients of the Mary Beth Ruskai Research Fund for Women. With a generous bequest from the estate of Mary Beth Ruskai, The EDGE Foundation established The Mary Beth Ruskai Research Fund for Women. Every year, two grants of $5,000 are awarded for a 12-month grant period for women in the mathematical sciences to advance their research careers through travel, collaboration, or other activities. The scope of these grants reflects Beth's commitment to women and to interdisciplinary work.

Amy Buchmann is an associate professor in the Mathematics Department at the University of San Diego. She did her undergraduate studies in mathematics at Chapman University and received her PhD from the Department of Applied and Computational Mathematics and Statistics at the University of Notre Dame. She was a postdoctoral fellow in the Department of Mathematics and Center for Computational Science at Tulane University.

Amy does research in mathematical biology, where she studies complex biological systems using mathematical and computational models. The main focus of her research is in the field of computational fluid dynamics, and she is particularly interested in creating mechanical models of microorganisms to study their coordinated behavior and interactions with their environment.

Hwayeon Ryu is an Associate Professor of Mathematics at Elon University, one of leading liberal arts institutions and nationally recognized as the premier student-centered environment for experiential learning. She earned her B.S. in Mathematics from Korea University in South Korea in 2008, and her M.A. and Ph.D. in Mathematics from Duke University in 2011 and 2014, respectively. She is a 2016 MAA Project NExT Fellow and a recent recipient of 2024 Distinguished Teaching Award by a Beginning College Mathematics Faculty Member recognized by Southeastern Section of the Mathematical Association of America. Hwayeon is the faculty lead for organizing a regional STEM conference for undergraduate students in collaboration with Wake Forest University, and recently started serving as a faculty advisor for a student planning committee of AWM Elon Student Chapter.

Hwayeon's research interests are focused on mathematical modeling and analysis of dynamical systems arising from other disciplines, like systems biology, neuroscience, and immunology. Her current work on mathematical modeling of immune response to SARS-CoV-2 is supported by the NSF research grant in which she serves as a sole PI. In addition, she was awarded a prestigious AWM-NSF Mentoring Travel Grant twice (2021 and 2024), which supports her international visit for collaboration work.

Hwayeon has a great passion for the development of a bridge curriculum and program between mathematics and biology, and strong commitment to increasing the access to higher education in STEM fields for women and historically underrepresented minorities. She has served as a research advisor for nearly 30 undergraduate students in conducting a variety of interdisciplinary projects in mathematical biology. Approximately 50% of the mentored students are women or from underrepresented groups. Student accomplishments include numerous talks at national conferences including JMM or NCUR, and an Outstanding Presentation Award at MAA MathFest. She is a regular judge/mentor for undergraduate programs organized by SCANAS, AWM, JMM, SIAM, and MAA MathFest. She also served as an associate editor of MAA FOCUS (for 2020-2022), an official newsmagazine of MAA.

The Sylvia Bozeman and Rhonda Hughes EDGE Foundation Announces Mariana Smit Vega Garcia as the 2024 Karen EDGE Fellow

The EDGE Foundation is delighted to announce Mariana Smit Vega Garcia as the 2024 Karen EDGE Fellow. The Karen EDGE Fellowship Program was established with a generous gift from Karen Uhlenbeck on the occasion of her 2019 Abel Prize. The Fellowship is designed to support and enhance the research programs and collaborations of mid-career mathematicians who are members of an underrepresented minority group.

Mariana Smit Vega Garcia earned her undergraduate and master's degrees from the Universidade de São Paulo, in Brazil. She then received her Ph.D. in Mathematics from Purdue University in 2014. She was a post-doc in Germany and at the University of Washington. In 2018, she joined Western Washington University as an Assistant Professor, being promoted to Associate Professor in 2021. Her research has been funded by the NSF, which also allowed her to fund a conference (Jumpstart 2023) focused on first generation students interested in Mathematics. In 2023, she received the Peter J. Elich Excellence in Teaching Award, which is the highest teaching award available to faculty members at Western Washington University.

Dr. Smit Vega Garcia's main research interests lie at the interface between Geometry and Partial Differential Equations, particularly free boundary problems. Recently, she has also been interested in combinatorial problems.

The Karen EDGE Fellowship will allow Dr. Smit Vega Garcia to enhance her research program by allowing her to travel to meet collaborators and travel to conferences to present her work, while maintaining her commitment to her students and to building a supportive mathematical community.

For more information on the Karen EDGE Fellowship, visit https://www.edgeforwomen.org/karen-edge-fellowship-program/. To support the Fellowship's continued work, donate here: https://bit.ly/EDGEdonate

CALL FOR NOMINATIONS

The 2026 Noether Lecture

AWM established the Emmy Noether Lectures in 1980 to honor women who have made fundamental and sustained contributions to the mathematical sciences. In April 2013 the lecture was renamed the AWM-AMS Noether Lecture and since 2015 has been jointly sponsored by AWM and AMS. This one-hour expository lecture is presented at the Joint Mathematics Meetings each January. Emmy Noether was one of the great mathematicians of her time, someone who worked and struggled for what she loved and believed in. Her life and work remain a tremendous inspiration.

The mathematicians who have given the Noether lectures in the past are: Jessie MacWilliams, Olga Taussky Todd, Julia Robinson, Cathleen Morawetz, Mary Ellen Rudin, Jane Cronin Scanlon, Yvonne Choquet-Bruhat, Joan Birman, Karen Uhlenbeck, Mary Wheeler, Bhama Srinivasan, Alexandra Bellow, Nancy Kopell, Linda Keen, Lesley Sibner, Ol'ga Ladyzhenskaya, Judith Sally, Olga Oleinik, Linda Rothschild, Dusa McDuff, Krystyna Kuperberg, Margaret Wright, Sun-Yung Alice Chang, Lenore Blum, Jean Taylor, Svetlana Katok, Lai-Sang Young, Ingrid Daubechies, Karen Vogtmann, Audrey Terras, Fan Chung Graham, Carolyn Gordon, Susan Montgomery, Barbara Keyfitz, Raman Parimala, Georgia Benkart, Wen-Ching Winnie Li, Karen E. Smith, Lisa Jeffrey, Jill Pipher, Bryna Kra, Birgit Speh, Marianna Csörnyi, Laura DeMarco, and Anne Schilling. The 2025 lecturer will be Neena Gupta.

Anyone can be a nominator, whether or not they are AWM members. Self-nominations are permitted, in which case there must be an additional letter of support. Nominations of members of underrepresented minorities are especially encouraged. The letter of nomination should include a one-page outline of the nominee's contribution to mathematics, giving four of her/their most important papers and other relevant information. A curriculum vitae of the candidates not to exceed three pages is also required. Nominations are to be submitted as ONE PDF file via Math-Programs.org. The submission link will be available 45 days prior to the deadline. Nominations must be submitted by **September 15, 2025** and will be held active for a total of three years (two years beyond the initial nominations). If you have questions, phone 401-455-4042, email awm@awm-math.org or see the website https://awm-math.org/awards/noether-lectures/.
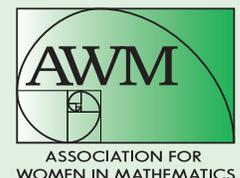
AWM Conflict of Interest Policy

A conflict of interest may exist when the interest (financial or other) or concerns of any member of AWM, or the member's immediate family, or any group or organization to which the member has an allegiance or duty, may be seen as competing or conflicting with the interests or concerns of AWM.

When any such potential conflict of interest is relevant to a matter requiring participation by the member in any action by AWM or any of its committees to which the member belongs, the interested party shall call it to the attention of AWM or the committee and such person shall not vote on the matter. Moreover, the person having a conflict shall retire from the room in which the organization or its committee is meeting (or from a conference call) and shall not participate in the final deliberation or decision regarding the matter under consideration.

The foregoing requirements shall not be construed as preventing the member from briefly stating her position in the matter, nor from answering pertinent questions of other members, as her knowledge may be of great assistance.

The minutes of the meeting of the organization or committee shall reflect when the conflict of interest was disclosed and when the interested person did not vote. When there is a doubt as to whether a conflict of interest exists, and/or whether a member should refrain from voting, the matter shall be resolved by a vote of the organization (or its committee), excluding the person concerning whose situation the doubt has arisen.

A copy of this conflict of interest statement passed by the AWM Executive Committee, Vancouver, 8/16/1993, shall be published once a year in the *AWM Newsletter*, and any member serving as an officer or on a committee shall be advised of the policy upon undertaking her duties.

2024–2025 Institutional Membership Form

JOIN ONLINE at awm-math.org!
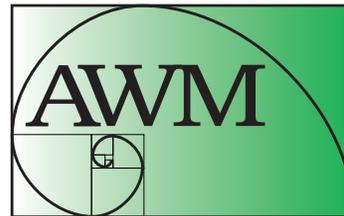
There are many benefits of institutional membership for your students, faculty, and institution! Opportunities with AWM reach across the career spectrum and include Student Chapters for undergraduates, workshops at JMM and SIAM for graduate students, and research networks, conferences, and publishing opportunities for faculty and staff. As a department or institution, you can adopt or adapt our Welcoming Environment and Diversity and Inclusion statements and benefit from advertising to our population, thereby demonstrating your commitment to recruit and retain women.

ASSOCIATION FOR WOMEN IN MATHEMATICS

The AWM membership year is from October 1 to September 30. Please fill in the information requested below and return it along with your dues to: AWM Membership, PO Box 40876, Providence, RI, 02940.

Questions? Please contact AWM at awm@awm-math.org or (401) 455-4042, or visit our website at: https://awm-math.org.

AWM institutional membership benefits include:

- All AWM Institutional members are recognized on the AWM website;
- All AWM Institutional members are entitled to 15 student nominee memberships and 1 faculty nominee membership;
- All AWM Institutional members (except stand-alone Student Chapters) receive a 15% discount on advertising;
- All AWM Institutional members receive a subscription to the *AWM Newsletter* and their student nominees have access to the electronic versions. Stand-alone Student Chapters receive electronic-only access unless a newsletter subscription is purchased.

☐ Two year colleges and community colleges ($200)

☐ Four year institutions with enrollment less than 10,000 without a PhD in mathematics ($300)

☐ Four year institutions with enrollment less than 10,000 with a PhD in mathematics ($350)

☐ Institutions with enrollment greater than 10,000 without a PhD in mathematics ($450)

☐ Institutions with enrollment greater than 10,000 with a PhD in mathematics ($500)

☐ Supporting Institutions (starting at $750)

☐ Sponsoring Institutional Memberships (starting at $3000)

☐ Student chapter membership/add-on ($100)

INSTITUTIONAL POINT OF CONTACT:

Name: _____

Position: _____

Institution/Company: _____

E-mail: _____   Phone: _____

City: _____ State/Province: _____ Zip/Postal Code: _____ Country: _____

Institutional Dues Schedule

Please check the appropriate membership category below. Make checks or money order payable to: Association for Women in Mathematics. NOTE: All checks must be drawn on U.S. banks and be in U.S. funds. AWM membership year is October 1 to September 30.

The Association for Women in Mathematics accepts the following forms of payment:

Check, money order, travel's check, or cashier's check in U.S. dollars and drawn on a U.S. Bank

Credit Card: To pay with Visa or Mastercard, log into your AWM account at https://ebus.awm-math.org, click "Purchase History", and pay for the outstanding invoices you select. Please call (401) 455-4042 to pay over the phone or to request a secure email link to send your credit card information safely.

PayPal: use PayPal online at https://paypal.me/awmath let us know in the order detail which membership category you have chosen

2024–2025 Individual Membership Form

JOIN ONLINE at awm-math.org!

Please fill in this information and return it along with your dues to:

AWM Membership, PO Box 40876, Providence, RI 02940

ASSOCIATION FOR WOMEN IN MATHEMATICS

_____
Last Name   First Name   M.I.
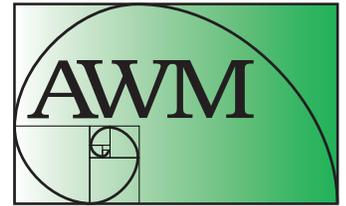
Address _____

City _____ State/Province _____

Zip/Postal Code _____ Country _____

PO Box 40876
Providence, RI 02940
401.455.4042
http://awm-math.org
awm@awm-math.org

AWM's membership year is from October 1 to September 30. Please fill in this information and return it along with your dues to: AWM Membership, PO Box 40876, Providence, RI 02940

The AWM Newsletter is published six times a year. If you have questions, contact AWM at **awm@awm-math.org**, 401.455.4042, or visit our website at: **https://awm-math.org.**

E-mail: _____ Home Phone:_____ WorkPhone: _____

PROFESSIONAL INFORMATION:

Position:_____

If student, check one:

☐ Graduate   ☐ Undergraduate

If not employed, leave position and institution blank.

Institution/Company:_____

Country: _____

City: _____ State/Province:_____ Zip/Postal Code: _____

DEGREES EARNED:

	Degree(s)	Institution(s)	Year(s)
Doctorate:	_____	_____	_____
Masters:	_____	_____	_____
Bachelors:	_____	_____	_____

INDIVIDUAL DUES SCHEDULE

Please check the appropriate membership category below. Make check or money order payable to: Association for Women in Mathematics.

NOTE: All checks must be drawn on U.S. banks and be in U.S. funds.

☐ Regular individual membership *(new members only)*... $35

☐ Regular individual membership *(members earning <$90,000)*.. $70

☐ Regular individual membership *(members earning ≥$90,000)*.. $100

☐ Family membership, *please indicate family member who is a regular AWM member:* _____ $40

☐ Contributing membership *(members earning <$90,000)(includes designation of a free student membership)* $160

☐ Contributing membership *(3 year membership, members earning <$90,000)* $480

☐ Contributing membership *(members earning ≥$90,000)(includes designation of a free student membership)* $190

☐ Contributing membership *(3 year membership, members earning ≥$90,000)* $570

☐ Part-time employed $35

☐ AWM-SIAM Reciprocity membership $35

☐ AWM-KWMS Affiliate membership $30

☐ Retired membership $40

☐ Student membership $25

☐ Unemployed membership $20

☐ Gift membership, *please indicate name and email of giftee:* _____ $70

☐ Outreach membership $10

☐ Contribution to the AWM Endowment fund .... $_____

☐ Contribution to the AWM Annual Giving Campaign .... $_____

☐ I *do not* want my name to appear in annual lists of contributors to AWM's funds.

Please note that all student, unemployed, outreach, family, gift membership, and KWMS affiliate members and members with non-US addresses receive only the electronic version of the newsletter.

If you wish to receive a print version, please check here ☐

TOTAL ENCLOSED $_____
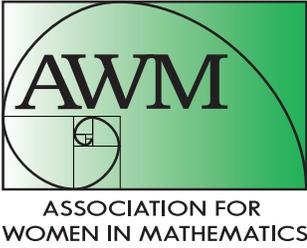
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Providence, RI 02940

ASSOCIATION FOR
WOMEN IN MATHEMATICS

Printed in the U.S.A.

ASSOCIATION FOR WOMEN IN MATHEMATICS

Volume 54, Number 4, July–August 2024

ADDRESS CORRECTION FORM

☐ Please change my address to:
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