2023
MOVES
MATHEMATICS OF VARIOUS ENTERTAINING SUBJECTS
MOVES 2023
Conference Locations

MOVES Conference events will be held August 6 - 8, 2023 at the following locations:
The National Museum of Mathematics, 11 East 26th Street
The Graduate Center, CUNY
5th Avenue between 34th and 35th Streets

MOVES Conference Schedule of Programs and Activities

Welcome researchers, educators, and families to the 2023 MOVES Conference, hosted by the National Museum of Mathematics!

Sunday Afternoon
Meet at Additions, the shop at MoMath, for each of the following pre-conference activities.

Math on Madison
Chaim Goodman-Strauss leads a mathematical walk around Madison Square Park.
11:00 am - 12:00 pm

My Neighbor’s Garden
Take a stroll in the park to explore this unique crochet sculpture.
1:30 pm

Architextures Walk
Explore the neighborhood through an architectural lens with Tim Nissen.
2:00 pm - 4:00 pm

Sunday Evening

Open House and Dessert Reception at MoMath
6:30 Museum open for conference attendees only; early registration begins.
Enjoy more than three dozen unique, hands-on MoMath exhibits without the crowds!
6:45 Dessert reception, Wafels & Dinges.
8:45 Reception ends.

Research Talks
MoMath is pleased to host 25 research talks over the course of the conference.
For the research track (Proshansky Auditorium, rooms C201/202), follow the blue listings in the program.

Mathematical Activities
MoMath is happy to provide a change of pace with 16 guided mathematical activities intended for all audiences.
For the activity track (rooms C203/204, C197/198), follow the yellow listings in the program.
### Monday Morning

**Conference Kick-Off**
Proshansky Auditorium, The Graduate Center, CUNY
8:30–9:20 Registration
9:20–9:30 Welcome and Opening Remarks
Cindy Lawrence, Executive Director and CEO, National Museum of Mathematics
9:35–10:35 *Mathemalchemy: beauty and creativity through math* — Sabetta Matsumoto, Georgia Institute of Technology

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**Proshansky Auditorium**
- 10:45–11:10 *Knitted Origami* — Elizabeth Wilmer, Oberlin College
- 11:15–11:40 *Teaching Math with Crochets* — Tanya Khovanova, MIT
- 11:45–12:10 *Three Moments in the History of Numerical Calculations* — Jorge Nuno Silva, University of Lisbon

**CUNY, C203/204**
- 10:45–11:00 *Euler's Cat* — Bronna Butler, QED Arts LLC
- 11:15–11:40 *Coloring the losing positions of the game Euclid* — Brittany Ohlinger, Albright College
- 11:45–12:10 *Designing Log Cabin Quilts/ Afghans* — Marie Sheckels, University of Mary Washington

**CUNY, C201/202**
- 10:45–11:10 *Gluts, Knights, and Knaves* — Ben Blumson, National University of Singapore
- 11:15–11:40 *Fairness on Graphs* — Rik Sengupta, University of Massachusetts Amherst
- 11:45–12:10 *Polyominoes, Puzzles, Proofs, and Programming* — Haynes Brown, Furman University

**CUNY, C197/198**
- 10:45–11:10 *A Tool to Think With — the Finch Robot* — Laura Hart, Robofun
- 11:45–12:10 *Brainy Braiding* — Skona Brittain, SB Family School

12:10–1:45 Eat lunch with others on-site at CUNY (9th floor; pre-registration required) or grab a bite on your own.

### Monday Afternoon

**Proshansky Auditorium, The Graduate Center, CUNY**

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<td>1:45–2:45</td>
<td><em>The mathematics and computer science behind games and puzzles</em> — Érika Roldán, MPI MiS and ScaDS.AI Leipzig University</td>
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**CUNY, C203/204**
- 3:00–3:25 *Sculpting Mapping Cylinders: Seamless Crochet of Topological Surfaces* — Shiyung Dong
- 3:30–3:55 *Randomizing Your Digits: Generatively Knit Mittens* — Emily Dennett, Columbus Academy
- 4:00–4:35 *Best practices for creating data embroidery* — Shemsi Alhaddad, USC Lancaster

**CUNY, C201/202**
- 3:00–3:25 *Exploring Bipartition Dominoes* — Brian Hopkins, Saint Peter's University
- 3:30–3:55 *Probabilistic chip-collecting games with modulo winning conditions* — Wing Hong Tony Wong, Kutztown University of Pennsylvania
- 4:00–4:35 *Self-similar structure of P-positions of the game Euclid* — Brittany Ohlinger, Albright College

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- 3:00–3:25 *Euler's Cat* — Bronna Butler, QED Arts LLC
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**SPACE CHIPS DIE CUT®**
Toy inventor Dick Esterle will be on hand throughout the conference with a simple make-and-take system of slot-together, flat pieces of up-cycled, die-cut cardboard triangles, squares, and pentagons with equal length edge-slots around their perimeter that connect with each other. Come build simple polyhedra or try your hand at creating higher-order spherical forms.

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All MOVES attendees are welcome to enjoy FREE admission to MoMath throughout the conference; please just show your badge in *Additions*, the shop at MoMath, when you arrive.

**Family Activity Fair**
- 3:00–4:30 *Weaving Meaningful Patterns* — Jordan Emmart, Discovery Homeschool
- 3:00–4:30 *Bayesian Murder Mystery: Visualizing Likelihood with New Evidence* — Adam Shavit, Hunter College CUNY
- 3:00–4:30 *Magic Key-Ring-Chain* — Vanessa Landgraf, Technical University of Munich, Germany
### Monday Evening

**5:00 Conference Dinner** - The Graduate Center, CUNY (9th floor; pre-registration required)

**Proshansky Auditorium, The Graduate Center, CUNY**

**Monday Night MOVES**  
6:30 – 8:30 PM

**Tim and Tanya Chartier**

Tim and Tanya Chartier introduce mathematical ideas via mime, making the often invisible world of mathematics more visible. Trained in master classes with Marcel Marceau, the Chartiers have performed throughout the United States as well as internationally.

**Mathemalchemy, where math is transforming**

Join a lively and engaging discussion of Mathemalchemy, a room-sized math exhibit that was the brainchild of mathematician Ingrid Daubechies and fiber artist Dominique Ehrmann. Groundbreaking in the breadth of its content, the project was driven by the energy and enthusiasm of twenty-four mathematical artists and artistic mathematicians, including moderator Kim Roth, Juniata College, and panelists Bronna Butler, QED Arts, LLC; Ingrid Daubechies, Duke University; Sabetta Masumoto, Georgia Institute of Technology; Henry Segerman, Oklahoma State University; and Jessica K. Sklar, Pacific Lutheran University.

**Special Performance by**

**Dunn Pearson**  

**Marcus Miller**  
Jazz saxophonist, songwriter, producer, and engineer in the New York music scene. Performed at the Obama White House, Madison Square Garden, The Late Show with Stephen Colbert, The Blue Note, Dizzy’s, and even Carnegie Hall.

### Tuesday Morning

**Proshansky Auditorium, The Graduate Center, CUNY**

**9:00–10:00 How the World Fits Together: Tiles and Tessellations** — Chaim Goodman-Strauss, University of Arkansas

**CUNY, C203/204**

**Family Activity Fair**

**9:00–10:00**

**10:15–10:40 Mathematical Dice Design**  
Henry Segerman, Oklahoma State University

**10:45–11:10 A New Two-Person Mathematical Entertainment with Coins**  
Colm Mulcahy, Spelman College

**11:15–11:45 Investigating the Australian Shuffle**  
Robert Vallin, Lamar University

**CUNY, C197/198**

**Family Activity Fair**

**10:15–10:40 Oloidmania**  
Eric Olson, State University of New York - Oswego

**10:45–11:10 Fish and Fowl: Weaving Ribbon**  
Suzanne Sumner, University of Mary Washington

**10:15–10:40 Bucky’s Circus**  
Melissa Silk, JMC Academy Lisa Giles, STEAmpop

**10:45–11:10 Games, Gamers, and Mathematics**  
Érika Roldán, MPI MIS and ScaDS.AI Leipzig University  
Manuel Estevez, MPI MIS and ScaDS.AI Leipzig University

**11:45–1:10 Lunch on your own.**

Optional field trip to Tannen’s Magic Shop (45 W 34th St. #608) led by Robert Vallin: meet at 11:50 am in front of C204.

**Take home a little bit of MoMath!**

We’ll be setting up an outpost of Additions, the shop at MoMath, for all your summer gift needs.
Tuesday Afternoon

1:10–2:10 Proshansky Auditorium, The Graduate Center, CUNY
Temari Balls at Mathemalchemy and Beyond — Ingrid Daubechies

Proshansky Auditorium
2:25–2:50 From Pixels to Play: Creating Image Approximations with Tangle Fidget Toys
Daniel Cowan, Caterpillar
Tim Chartier, Davidson College

2:55–3:20 Oh What a Complex Rug We Weave...
Barry Cipra, Freelance

3:25–3:50 Modeling Equations in Origami Using the Miura-ori Pattern
Uyen Nguyen, WINWIN

3:55–4:20 Imaginary Numbers in Binary! Using Dollies?!?
Hester Graves, IDA/CCS

CUNY, C203/204
Family Activity Fair
2:25–3:55 PENTRAM — the next-level of Tangram
Emil Simeonov, UAS Technikum Wien

2:25–3:55 Using Origami to Introduce the Properties of a Square
Helen Rodney

2:25–3:55 Crochet a hyperbolic plane
Cindy Zhang, MIT

CUNY, C201/202
2:25–2:50 Rep-tiles and the Geometric Mean
Leon Brin, Southern CT State University

2:55–3:20 How Less is More: Origami in Mathematics
Medha Ravi, Saratoga High School

3:25–3:50 Three Points Make a Right Triangle
Saad Mneimneh, Hunter College of the City University of New York

FREE post-conference events
7:00 pm, Tuesday, August 8
How Maths Saved My Life
Ayliean MacDonald
momath.org/saved

4:00 pm or 7:00 pm, Wednesday, August 9
Unsolved Mystery: Understanding and playing with an open problem in mathematics
Elise Raphael
mathencounters.org

MOVES Closing
Proshansky Auditorium, The Graduate Center, CUNY
4:30–4:40 Concluding Remarks, Cindy Lawrence, MoMath

The National Museum of Mathematics wishes to thank the following MOVES supporters:

- 2° TWO SIGMA
- American Mathematical Society
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Keep the magic of math going all year long!

Join MO-MATH today!

Members receive:
• Free access to all MoMath program videos.
• A 10% discount in Additions, the shop at MoMath!

momath.org/join

 Recommended eateries with discounts
Show your MOVES badge to receive the following discounts:
Kosher in Midtown – 43 E 34th St between Madison & Park Aves, 10% off
Sabai – 432 Park Avenue South between 29th & 30th Streets, 15% off

Other recommended eateries
Anita Gelato – 1141 Broadway at the corner of 26th Street and Broadway
Bravo Pizza – 360 7th Ave at the Corner of 30th Street and 7th Ave
Ilili – 236 5th Ave between 27th & 28th Streets
MEXICUE – 225 5th Ave between 26th and 27th Streets
Novitá – 102 E 22nd Street between Park & Lexington Aves
Sarabeth's – 381 Park Ave South between 29th and 30th Streets
See you next time!

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