2022
MOVES
Mathematics of various entertaining subjects
MOVES Conference events will be held August 7 – 9, 2022 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 2022 MOVES Conference, hosted by the National Museum of Mathematics! MoMath is pleased to acknowledge MOVES sponsor TWO SIGMA.

Sunday Afternoon

Million Millimeter March
Peter Winkler
Meet in Additions, the shop at MoMath
2:00-3:00

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 29 research talks intended for all audiences over the course of the conference.
For the research track (room C201), follow the blue listings in the program.

Mathematical Activities
MoMath is happy to provide a change of pace with 23 guided mathematical presentations intended for all audiences (C201) and guided mathematical activities (C202).
For the activity track (room C202), follow the yellow listings in the program.

Note that masks must be worn at all times and that all visitors ages five and up must show acceptable proof of full vaccination against COVID-19 at MoMath and the CUNY Graduate Center (vaxproof.momath.org). (Note: MoMath does not accept digital images or photocopies of vaccination cards unless they have been uploaded to the NYC COVID Safe app.)
### Monday Morning

**Conference Kick–Off**
Proshansky Auditorium, The Graduate Center, CUNY

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
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<tbody>
<tr>
<td>8:30–9:15</td>
<td>Registration</td>
</tr>
<tr>
<td>9:15–9:25</td>
<td>Welcome Cindy Lawrence, Executive Director and CEO, National Museum of Mathematics</td>
</tr>
<tr>
<td>9:35–10:35</td>
<td>Opening keynote (presenting via livestream) How to Invent Puzzles — Scott Kim</td>
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**The Graduate Center, CUNY, C204**

<table>
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<tr>
<th>Time</th>
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<tbody>
<tr>
<td>10:45–11:10</td>
<td>Combinatorial Magic with the SET Deck</td>
</tr>
<tr>
<td>11:10–11:40</td>
<td>Geometry and the SET Daily Puzzle</td>
</tr>
<tr>
<td>11:45–12:10</td>
<td>QUADS: A SET-like game with a twist</td>
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**The Graduate Center, CUNY, C201**

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<tr>
<td>10:45–11:10</td>
<td>Riddle Me This: Human vs. Computer</td>
</tr>
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<td>11:10–11:15</td>
<td>Pieces of a Puzzle Pieces Puzzle</td>
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**The Graduate Center, CUNY, C202**

**Family Activity Fair**

<table>
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<tbody>
<tr>
<td>10:45–12:10</td>
<td>Hyperbolic Rainbow</td>
</tr>
<tr>
<td>11:10–12:10</td>
<td>Mathematical Card Effects</td>
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**The Graduate Center, CUNY, C203**

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<tr>
<td>3:20–3:45</td>
<td>From Geography to Santorini: Computational Complexity of Games on Graphs</td>
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<tr>
<td>3:50–4:15</td>
<td>A Combinatoric Approach to Solving Chess Puzzles</td>
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<td>4:20–4:45</td>
<td>Sum Amusements with Fibonacci and Other Linear Recurrence Sequence</td>
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<td>Parity Graphs for KenKen Puzzles</td>
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<td>4:20–4:45</td>
<td>Surprising Sudoku Connections</td>
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**The Graduate Center, CUNY, C205**

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<tr>
<td>3:20–3:45</td>
<td>Living on a Random Torus</td>
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<tr>
<td>3:50–4:15</td>
<td>Making Paper Spheres</td>
</tr>
<tr>
<td>4:20–4:45</td>
<td>Knot Theory on the n^n</td>
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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.**

**Monday Afternoon**

Proshansky Auditorium, The Graduate Center, CUNY

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<tr>
<td>1:45–2:45</td>
<td>Keynote speaker The Fascination of Puzzle Hunt Puzzles — Tanya Khovanova</td>
</tr>
<tr>
<td>2:45–3:15</td>
<td>Coffee break, CUNY (9206 – 9207)</td>
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**The Graduate Center, CUNY, C201**

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<td>3:20–3:45</td>
<td>So You Want to be a Competitive Puzzler</td>
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<td>3:50–4:15</td>
<td>A Game and A Proof and A Challenge</td>
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<td>4:20–4:45</td>
<td>A Periodic Table of Polyform Puzzles</td>
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**The Graduate Center, CUNY, C202**

**Family Activity Fair**

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<tr>
<td>3:20–4:45</td>
<td>Piles of Fun: Takeaway Games you can Play on the Go</td>
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<td>3:50–4:15</td>
<td>Activity Based on the Shape Family Multi–Media Kit in Ivan Moscovich’s Book</td>
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<td>4:20–4:45</td>
<td>Placing Number Tokens on Catan: A “Tour” of Smaller Islands</td>
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12:10–1:45 Lunch, pre-ordered to eat with others onsite at CUNY (9206 – 9207) or on your own.
### Monday Evening

**5:00 Conference Dinner** - The Graduate Center, CUNY (9206 – 9207) - Pre-registration required

**Monday Night MOVES**

6:30 – 8:30 PM

**Miyamoto and the Machine**

Screening of a documentary about KenKen, followed by a panel discussion with Robert Fuhrer and Aaron Kaswell

**Performance by special guest Will Calhoun**

Multiple Grammy-award winning drummer for the band Living Colour, progressive and electronic percussionist, producer, songwriter, teacher, and artist

**Post-performance discussion hosted by Steven Strogatz**

Join the conversation with Will Calhoun and Steven Strogatz, MoMath’s 2021–2022 Distinguished Visiting Professor for the Dissemination of Mathematics

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### Tuesday Morning

**8:30–9:30**

**Keynote speaker (presenting via livestream)**

Experiencing math through mechanical puzzles and puzzling mechanisms — Oskar van Deventer

**9:40–10:40**

**Keynote speaker**

Playing with Puzzles: a presentation to honor the memory of Maki Kaji — Yoshi Anpuku

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| 10:55– | The Graduate Center, CUNY, C203 | The License Plate Challenge  
  11:20  |          | Lidia Gonzalez  
          | York College, CUNY                                                  |
| 11:25– | The Graduate Center, CUNY, C204 | Solving Soluna  
  11:50  |          | Lily Li  
          | University of Toronto                                               |
| 11:55– | The Graduate Center, CUNY, C201 | An Impartial Two-player  
  12:20  |          | Wing Hong Tony Wong  
          | Kutztown University of Pennsylvania                                 |
| 10:55– | The Graduate Center, CUNY, C205 | Counting Variations of Knights and Knaves Puzzles  
  11:20  |          | Taisha Charles  
          | Albright College                                                    |
| 11:25– | The Graduate Center, CUNY, C203 | CIRM puzzles from 1935 and 1937  
  11:50  |          | Tiago Hirth  
          | University of Lisbon                                                |
| 11:55– | The Graduate Center, CUNY, C204 | Puzzling Mathematics in Ancient Greek and Latin  
  12:20  |          | Suzanne Sumner and Liane Houghtalin  
          | University of Mary Washington                                       |
| 12:20– | The Graduate Center, CUNY, C202 | Lunch, pre-ordered to eat with others onsite at CUNY (9206 – 9207) or on your own  
  1:50   |          | Optional field trip to Tannen’s Magic Shop (45 W 34th St. #608) led by Robert Vallin: meet at 12:30 pm in front of C204. |
| 10:55– | The Graduate Center, CUNY, C201 | Lewis Carroll’s Amazing Card Trick  
  11:20  |          | Jonathan Matte                                                      |
| 11:55– | The Graduate Center, CUNY, C202 | Li’l Jacob, the Kid Brother Version of the Jacob’s Ladder  
  12:20  |          | Paula Krieg  
          | Artist                                                             |
| 10:55– | The Graduate Center, CUNY, C205 | Introduction to the card game QUADS  
  11:20  |          | Lauren Rose  
          | Bard College                                                       |
| 11:55– | The Graduate Center, CUNY, C202 | Flexagon Fun  
  12:20  |          | Ann Schwartz  
          | Fantastic Flexagons                                                |
| 12:20– | The Graduate Center, CUNY, C204 | KOLAMS: Play with Art and Geometry  
  1:50   |          | Venkat Gopalan  
          | Pennsylvania State University                                       |

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**Keep the magic of math going all year long!**

**Join MoMath today!**

momath.org/join
## Tuesday Afternoon

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

**1:50–2:50**  
**Keynote speaker**  
*Unbelievable Math Puzzles* — Peter Winkler

### The Graduate Center, CUNY, C203

**3:05–3:30**  
**Variants of the 15-puzzle and the effects of holonomy**  
Henry Segerman  
Oklahoma State University

**3:35–4:00**  
**Gears that turn and Archimedean solids**  
Gary Gordon  
Lafayette College

**4:05–4:30**  
**Exploring Bipartition Dominoes**  
Brian Hopkins  
St. Peter’s University

### The Graduate Center, CUNY, C201

**3:35–4:00**  
**Rubik’s Snake Loopology**  
Mircea Draghicescu  
ITSPHUN

### The Graduate Center, CUNY, C202

**Family Activity Fair**  
3:05–4:30  
*Log In! Exploring Logarithms through Experimentation and Play*  
Philip Dituri  
Financial Life Cycle Education Corp.

**3:35–4:00**  
**Rubik’s Snake Loopology**  
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ITSPHUN

### The Graduate Center, CUNY, C205

**3:05–3:30**  
**The Derivative of Dolly: Iconic Graphical Analyses of Iconic Songs**  
Brooke Tortorelli  
Monmouth University

**3:35–4:00**  
**Creative Design with Polystix: Homogenous Cylinder Rod Packings as Art**  
Anduriel Widmark

**4:05–4:30**  
**An Accidental Flexagon**  
Ann Schwartz  
Fantastic Flexagons

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

**4:30–4:45**  
**Concluding Remarks**, Cindy Lawrence, MoMath

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

- 2° TWO SIGMA
- Areaware
- ITSPHUN
- Wood Expressions

**MOVES Conference Committee**

- Josh Laison, Willamette University
- Robert W. Vallin, Lamar University
- Cindy Lawrence, Executive Director & CEO, MoMath
- Skona Brittain, SB Family School
- Tim Chartier, Davidson College
- Darren Glass, Gettysburg College
- Ed Lamagna, The University of Rhode Island
- Ron Lancaster, University of Toronto
- Liz McMahon, Lafayette College
- Tony Nance, The Ohio State University
- Ron Taylor, Berry College
- Ricardo Teixeira, University of Houston — Victoria
Recommended eateries with 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

Recommended eateries

Anita La Mamma del Gelato – 1141 Broadway at the corner of 26th Street and Broadway
Bravo Pizza – 360 7th Ave at the Corner of 30th St 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
Save the date!

August 11–13, 2024

moves.momath.org