

CONFERENCE PROGRAM

ATLANTA, GEORGIA Wednesday, April 6th – Sunday, April 10th, 2022

PROGRAM CONTENTS

General Information, Schedule of Conference Events & Presentations, List of Attendees, Gift Exchange Information, Acknowledgments Thomas M. Rodgers (1943-2012) and friends conceived the first Gathering 4 Gardner 30 years ago. It was held in Atlanta in January 1993, with Martin Gardner present. In honor of Tom, we welcome you to the 14th Gathering 4 Gardner!



We have a full schedule so please be prepared for your presentation sessions. If you have any questions or concerns, please speak with a G4G Board Member or our Creative Director, Katie LaSeur.

Ritz-Carlton Hotel Address: 181 Peachtree Street NE, Atlanta, GA 30303 USA Ritz-Carlton Hotel Phone Number: 1-404-659-0400

G4G Board of Directors:

| _ | Colm Mulcahy |
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| _ | Vickie Kearn |
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 - scott@vorthmann.org

For more information regarding the following topics, please speak with the individuals listed:

REGISTRATION: Katie LaSeur & Jodi Meusel – katie@g4gfoundation.org **SALES & EXHIBITS ROOMS:** Robert Fathauer – tessellations@cox.net **PRESENTATIONS:** Bob Hearn (In-person) – **bob.hearn@gmail.com** Scott Vorthmann (virtual) – scott@vorthmann.org **ENTERTAINMENT:** Mark Mitton – mark@markmitton.com **GIFT EXCHANGE:** Katie LaSeur – katie@g4gfoundation.org VOLUNTEERING: Jodi Meusel – jodi@thecreativefold.com **YOUTH INITIATIVE:** Erika Roldan & Mónica Delgado – e.roldan.roa@gmail.com **OFFSITE ACTIVITIES:** George Hart – george@georgehart.com COVID-19 PROTOCOLS: Rick Sommer – rickcorysommer@gmail.com **GENERAL INQUIRIES:** support@g4gfoundation.org

Gathering 4 Gardner, Inc. is a 501(c)(3) educational non-profit organization.

GENERAL RITZ-CARLTON INFORMATION

WiFi – Free wireless internet access is available for the duration of G4G14 in all conference areas. The login is **Ritz_Conference Network** and the password is **G4G14**. Free wireless access is also available in hotel rooms for G4G14 attendees staying at the Ritz-Carlton. Your login and password will be provided when you check in.

Lumen Lounge is located in the Ritz-Carlton lobby. Light fare and cocktails from 3 PM to 11 PM Sunday through Thursday and 2 PM to 12 AM on Friday and Saturday.

Jittery Jones Coffee Shop is located in the Ritz-Carlton lobby. Open 7 days a week from 6:30 AM to 12 PM.

The Atlanta Grill is located on the second floor of the Ritz-Carlton, directly up the stairs from the lobby. The AG is open as follows: Breakfast: 7 AM - 10:30 AM (Monday through Friday) 7 AM – 12 PM (Saturday) and 7 AM – 1 PM (Sunday) *Lunch:* 11AM - 2 PM, Monday – Friday Brunch: 12 PM - 3 PM (Saturday) and 1 PM - 3PM (Sunday) Dinner: 5:30 PM - 10 PM, every day

Ritz-Carlton Hotel Map – See page 9.

FEATURED PUBLIC PRESENTATIONS

G4G is pleased to announce Featured Presenters Mark Burstein and Ingrid Daubechies, who will give public presentations in addition to their G4G14 talks.

Mark Burstein

Lewis Carroll Society of North America (LCSNA)

Public Presentation: "What IS It About Alice?"

Abstract: How did a British children's book written 150 years ago become the global icon it is today? In a wide-ranging, lushly illustrated, and humorous talk, Lewis Carroll expert Mark Burstein will discuss why Alice in Wonderland is the most quoted, the most widely illustrated, and among the most translated novels in the world. He'll also explore Alice's place in popular culture, with excursions into the life and times of Carroll and the real-life Alice.

Location: Georgia Tech, 144 Auditorium Clough • Date: Thursday, April 7th • Time: 6:15 PM

Ingrid Daubechies

James B. Duke Distinguished Professor of Mathematics and Electrical and Computer Engineering at **Duke University**

Public Presentation: "Reunited: An Art Historical and Digital Adventure"

Abstract: Combining the mathematics of digital image processing with the history, craftsmanship, and science of art conservation, my research team at Duke University, Bass Connections Image Processing Algorithms for Art Conservation, spent a year working with the NC Museum of Art to study, restore, and exhibit a 14th-century altarpiece that hadn't been displayed in its entirety for over a century.

- See daily schedules for G4G14 Conference Featured Presentation times -

Location: Georgia Tech, Instructional Center (055), 103 Classroom • Date: Saturday, April 9th • Time: 7:00 PM

WEDNESDAY, APRIL 6TH

Sign In & Registration

3:30 PM - 10:00 PM

Georgian Room, Ground Floor

Registration is on the ground floor of the Ritz-Carlton in the Georgian room near the lobby bar. Please bring your Gift Exchange items with you to registration if you didn't ship them in advance.

Bar Bets, Cons, & Tricks Georgian Room, Ground Floor Wednesday Evening Join host Jordan Gold for an informal show-and-tell session of bar bets, cons, and impromptu tricks.

| Sales Tables Setup | 4:00 PM – 10:00 PM | Sales Rooms, 2nd Floor | | |
|------------------------|--------------------|---------------------------------------|--|--|
| Exhibitor Tables Setup | 4:00 PM – 10:00 PM | Exhibitor Room, 2nd Floor | | |
| | | · · · · · · · · · · · · · · · · · · · | | |

Attendees with reserved Sales Tables and Exhibitor Tables are welcome to set up their spaces. Table selection is on a first-come, first-served basis.

| Alice Youth Orientation (ages 8-17) | 7:00 PM – 8:00 |
|-------------------------------------------|----------------|
| Archimedes Youth Orientation (ages 18-22) | 8:00 PM - 9:00 |

0 PM **Conference Ballroom, Lower-Level** 0 PM **Conference Ballroom, Lower-Level**

THURSDAY, APRIL 7TH

Sign In & Registration

8:00 AM - 6:00 PM

Ballroom Foyer, Lower-Level

Starting Thursday morning, new arrivals should sign-in on the lower level before the presentations or during breaks. Exchange Gifts not shipped in advance should be dropped off when you sign-in. Exchange gifts will not be accepted after 7 PM on Thursday, April 7th. All in-person presenters should verify their audiovisual equipment needs with the hotel AV staff or with Bob Hearn before their presentation. Virtual presenters should check in with Scott Vorthmann via email. Please do this in the morning if possible.

Sales Tables Exhibitor Tables

8:00 AM - 6:30 PM 8:00 AM - 6:30 PM

Sales Rooms, 2nd Floor Exhibitor Room, 2nd Floor

The Sales and Exhibitor Rooms will be open throughout the day during conference breaks in the presentation schedule. It is up to each participating individual to decide when they will monitor their table and be available for sales or exhibit questions during these times.

Presentation Sessions 8:30 AM - 5:15 PM See facing page for a detailed schedule of talks.

Mark Burstein 6:15 PM "What IS It About Alice?" Public Presentation

Dinner & Cash Bar* **Dessert Only Option* Evening Entertainment:**

Enter at 7:00 PM Enter at 8:00 PM **Conference Ballroom, Lower-Level**

Conference Ballroom, Lower-Level

Georgia Tech, 144 Auditorium Clough

Show will begin after dinner & dessert Magic String Theory*

Featuring magicians & musicians Rafael Benatar & Andrew Goldenhersh. A celebration of prestidigitation, guitar and lute. 500 years of fingers manipulating strings and other things.

Late-Night Close-Up Magic Jam Show will begin 20 min. after Magic String Theory G4G's close-up magicians will present at various locations on the Grand Ballroom floor.

Support for this post-banquet entertainment is made possible by Wei-Hwa Huang.

*Special Event ticket required.

| | Speaker | Title | | |
|---------|----------------------|-------------------------------------------------------------------------------------------------------------------------|--------|----------|
| 8:30 AM | Skona Brittain | 14 Numbers for G4G14 | 6 min | 8:30 AM |
| - | Kenneth Brecher | The Sirius Enigmas Mathematical Tops | 6 min | - |
| • | George I. Bell | Fun with tops | 6 min | • |
| | Sabine Segre | Rep-Tile Tangram | 6 min | |
| | Ryuhei Uehara * | Solving Rep-tile by Computers | 6 min | |
| - | Robert W Vallin | An Unexpected Appearance (or Look Ma, No Rectangles) | 6 min | - |
| - | Jorge Nuno Silva * | Magic and problems from half a millennium ago | 6 min | - |
| - | Rick Sommer | Knuth's Up-arrow into the Transfinite, and Beyond! | 6 min | - |
| • | Nathaniel Segal | Performing On The Virtual Stage | 6 min | • |
| - | Adam Atkinson * | Daedalus | 6 min | - |
| | Raymond Hall | @physicsfun: Social Media as a Museum of Science and Math (and A Recent Path Down a Rabbit Hole with Pentomino Tilings) | 6 min | |
|):00 AM | | Break | 30 min | 10:00 AM |
|):30 AM | Ingrid Daubechies | Mathemalchemy | 45 min | 10:30 AM |
| - | Darren Glass | Chutes and Ladders with Multiple Dice | 6 min | - |
| - | Peter Cannon | Interviewing Martin Gardner | 6 min | - |
| - | Hector Rosario * | Playing in Gardner's Wonderland | 6 min | - |
| • | Alexandre Owen Muñiz | Which Pentomino Is the Least Convex? | 6 min | - |
| 2.00 PM | Erika Roldan | Guarding Art Galleries with Rooks and Queens | 6 min | 12:00 PM |

| | Speaker | Title | | |
|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|--------|---------|
| 1:30 PM | Various | Tributes to Berlekamp, Conway, Guy, Graham, and Randi | 60 min | 1:30 PM |
| | Ryan Hayward * | Hex: Two Books and One Puzzle | 6 min | - |
| | Jonathan Bobrow | Open-Source Physical Cellular Automata | 6 min | - |
| | Robert Bosch | Domino Steganography and Lenticular Dice Mosaics: Two Examples of Opt Art | 6 min | - |
| | George Hart | Warped-Grid Jig-Saw Puzzles | 6 min | - |
| | Peter Knoppers | 2e9s - An Egocentric View of Time | 6 min | - |
| | Kate Jones * | StarHex-14, The beauty of polyform sets | 6 min | - |
| 2.20 PM | Gabriel Kanarek | A Variation on the Erdős-Straus Conjecture | 6 min | 2.20 PM |
| 3:30 PM | | Break | 30 min | 3:30 PM |
| 4:00 PM | Red Deupree | Tetraflexagons / Coloring the Penrose Pattern | 6 min | 4:00 PM |
| | Ann Schwartz | I am the Rhombus, Goo Goo G'Joob. Introducing the Rhombus Flexagon! | 6 min | - |
| | Michael Keith * | 300+ Digits Of Pi From An (Almost) Ordinary Deck Of Cards | 6 min | - |
| | Daniel Kline | Playing with Puzzles: A Sample of What's New at the Julia Robinson Mathematics Festival | 6 min | - |
| | Koji Fujimoto * | The Actual 26 Integers for a Diophantine Representation Those Make Prime Number 2. | 6 min | - |
| | Alexa Meade | Adventures in Wonderland | 6 min | - |
| | Chaim Goodman- Strauss | Tooti Tooti! | 6 min | - |
| 5:15 PM | Red Deupree Tetraflexagons / Coloring the Penrose Pattern Ann Schwartz I am the Rhombus, Goo Goo G'Joob. Introducing the Rhombus Michael Keith * 300+ Digits Of Pi From An (Almost) Ordinary Deck Of Cards Daniel Kline Playing with Puzzles: A Sample of What's New at the Julia Robinson Mathematics Festival Koji Fujimoto * The Actual 26 Integers for a Diophantine Representation Those Make Prime Number 2. Alexa Meade Adventures in Wonderland Chaim Goodman- Tooti Tooti! | | | 5:15 PM |

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Gathering 4 Gardner 14 **Presentation Schedule**

Thursday, April 7th, 2022

FEATURED PRESENTATION

(*) = VIRTUAL PRESENTATION

Morning Session: 8:30 AM - 12:00 PM

Afternoon Session: 1:30 PM - 5:15 PM

Presentation Abstracts Available Online: www.gathering4gardner.org/g4g14-abstracts.pdf

FRIDAY, APRIL 8TH

Sign In & Registration

8:00 AM – 6:00 PM

Ballroom Foyer, Lower-Level

New arrivals should sign-in on the lower level before the presentations or during breaks. Exchange gifts will not be accepted after 7 PM on Thursday, April 7th. All in-person presenters should verify their audiovisual equipment needs with the hotel AV staff or with Bob Hearn before their presentation. Virtual presenters should check in with Scott Vorthmann via email. Please do this in the morning if possible.

Sales Tables Exhibitor Tables 8:00 AM - 6:30 PM 8:00 AM - 6:30 PM

Sales Rooms, 2nd Floor **Exhibitor Room, 2nd Floor**

The Sales and Exhibitor Rooms will be open throughout the day during conference breaks in the presentation schedule. It is up to each participating individual to decide when they will monitor their table and be available for sales or exhibit questions during these times.

"Down the Rabbit-Hole" Alice Youth Program 12:15 PM-1:15 PM Georgian Room, Ground Floor Special session for Alice Scholarship recipients with Carroll-based puzzles, games, and magic. Led by Mark

Burstein and featuring Chris Morgan, Stuart Moskowitz, and Stan Isaacs. Light lunch to be provided. (Youth attendees 8-17 and chaperones only)

| Presentation Sessions | 8:30 AM – 5:30 PM | Conference Ballroom, Lower-Level |
|--------------------------------|--------------------|----------------------------------|
| See facing page for a detailed | schedule of talks. | |

Dinner & Cash Bar* **Dessert Only Option* Evening Entertainment:** Enter at 7:00 PM Enter at 8:00 PM **Conference Ballroom, Lower-Level**

G4G14 Gala Show* Show will begin after dinner & dessert

Our traditional razzle-dazzle variety show, featuring G4G's own stars and surprise guests.

Support for this post-banquet entertainment is made possible by Wei-Hwa Huang.

Gift Exchange Bag Pickup 10:00 PM - 11:00 PM (Limited supply for attendees leaving early)

Georgian Room, Ground Floor

*Special Event ticket required.

Morning Session: 8:30 AM - 12:00 PM

| | Speaker | Title | | |
|----------|---------------------------------|-----------------------------------------------------------------------------------------------------------|--------|----------|
| 8:30 AM | Jason Rosenhouse | The Use and Abuse of Probability in Evolutionary Biology | 6 min | 8:30 AM |
| | Robert P Crease | From MG to QB | 6 min | • |
| | Carolyn Yackel | Using Mathematics to Inform Fiber Arts Work | 6 min | • |
| | Andrew Rhoda | The Slocum Mechanical Puzzle Collection at the Lilly Library | 6 min | • |
| | Steven Landsburg | Why Do People Stand Still on Escalators But Not on Stairs? | 6 min | |
| | Alba Marina Málaga Sabogal * | Paper Tori | 6 min | - |
| | Barry Cipra | A Toroidal Looping Puzzle | 6 min | • |
| | Barry Hayes * | Is the Szilassi Polyhedron Unique? | 6 min | • |
| | John Edward Miller | More Fun with Langford's Problem | 6 min | • |
| 10:00 AM | | Break | 30 min | 10:00 AM |
| 10:30 AM | Mark Burstein | A Literary Englishman and the Scientific American: Lewis Carroll's Appearances in 'Mathematical Games' | 45 min | 10:30 AM |
| | Stanley S Isaacs | Lewis Carroll, Mathematician Rediscovered: Euclid and Non-Euclidean Geometry | 6 min | - |
| | Stuart Moskowitz | Lewis Carroll, Mathematician Rediscovered: Trigonometry, Recreational Math, Logic, and More | 6 min | |
| | Chris Staecker | Gerber's Great Graphical Gizmos | 6 min | - |
| | Hideki Tsuiki * | Imaginary Cube Puzzles in classes | 6 min | - |
| | T. Arthur Terlep | Waving Goodbye to Berlekamp | 6 min | - |
| 12:00 PM | | | | 12:00 PM |

| | Speaker | Title | | |
|---------|----------------------------|---------------------------------------------------------------------------------------------------------|--------|---------|
| L:30 PM | Robert P Crease | Fourteen: Workhorse Wondr | 6 min | 1:30 PM |
| | Delicia Kamins * | Beware You All, Something Fourteen This Way Comes | 6 min | • |
| | Dana S Richards | "Are you a mathematician?" | 25 min | • |
| | R. William Gosper | The Dragon Function is way cooler than the "Dragon Curve". | 8 min | - |
| | Adam Rubin | Further Abracadoodads | 6 min | - |
| | Bjoern Muetzel * | Mirror Solids | 6 min | - |
| | Eleftherios Pavlides | Tetradecahedron as Palimpsest of the Monododecahedral 1-Parameter Family of the Pavlides Elastegrity | 6 min | |
| | Lauren Siegel | Making Math | 6 min | _ |
| | Peter Winkler * | Two Paradoxes of Slight Bias | 6 min | - |
| | Barney Sperlin | The Accountant | 6 min | _ |
| | Spandan Bandyopadhyay * | Outsider Mathematics | 6 min | _ |
| | Bill Ames | Snowflake Formation | 6 min | - |
| 8:30 PM | 2 | | | 3:30 PM |
| | | Break | 30 min | |
| 4:00 PM | Joe Buhler | Wildly Nontransitive Dice | 6 min | 4:00 PM |
| | Susan Goldstine | Mosaic Knitting Friezes: seventeen symmetries, minus three | 6 min | • |
| | Philipp Legner * | Mathigon – Textbook of the Future | 6 min | • |
| | Ricardo Teixeira | Magical Journey through Advanced Mathematics | 6 min | - |
| | Miquel Duran * | Quantum Science and Card Magic: from basic concepts to cryptography | 6 min | |
| | James Gardner | Growing up with Martin Gardner: Some Old and New Reflections | 30 min | - |
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| | Barney Sperlin | The Accountant | 6 min | • |
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| | Miquel Duran * | Quantum Science and Card Magic: from basic concepts to cryptography | 6 min | • |
| | James Gardner | Growing up with Martin Gardner: Some Old and New Reflections | 30 min | • |
| | | | | E.20 DM |

Gathering 4 Gardner 14 **Presentation Schedule**

Friday, April 8th, 2022

FEATURED PRESENTATION

(*) = VIRTUAL PRESENTATION

Afternoon Session: 1:30 PM - 5:30 PM

Presentation Abstracts Available Online: www.gathering4gardner.org/g4g14-abstracts.pdf

SATURDAY, APRIL 9TH

| Sign In & Registration | 8:00 AM – 12:00 PM | Ballroom Foyer, Lower-Level | |
|-------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| New arrivals should sign-in on Exchange gifts will not be acce their audiovisual equipment nee presenters should check in with S | the lower level before the pres pted after 7 PM on Thursday, A eds with the hotel AV staff or with Scott Vorthmann via email. Plea | sentations or during breaks. April 7th. All in-person presenters should verify h Bob Hearn before their presentation. Virtual ase do this in the morning if possible. | 8:30 AM Speaker Tomas Rokicki * Lucas Garron * |
| Gift Exchange Bag Pickup | 7:00 AM – 8:00 AM | Georgian Room, Ground Floor | David Plaxco Robert Fathauer |
| Sales Tables Exhibitor Tables The Sales and Exhibitor Rooms schedule. It is up to each partic | 8:00 AM – 12:00 PM 8:00 AM – 12:00 PM will be open in the morning d ipating individual to decide w | Sales Rooms, 2nd Floor Exhibitor Room, 2nd Floor uring conference breaks in the presentation hen they will monitor their table and be | Chris Hibbert Jeanine Meyer Akio Hizume * 9:45 AM |
| available for sales or exhibit qu Presentation Sessions See facing page for a detailed s | estions during these times. 8:30 AM – 11:15 AM schedule of talks. | Conference Ballroom, Lower-Level | 10:15 AM Alexander Kernbaun Aaron Siegel * Dave Buck Nicole Dieker * Scott Vorthmann George Hart |
| Gift Exchange Bag Pickup | 11:00 AM – 1:00 PM | Georgian Room, Ground Floor | 11:15 AM |
| Georgia Tech Offsite* See Offsite Program for detaile | d schedule and event informat | Georgia Tech (Koen Plaza) tion. | Presentation Abstract |
| We're pitching tents, serving lu opportunities for participants t enjoy a catered dinner. | nch, building sculptures orgar to socialize and explore this vik | nized by George Hart, and creating prant community. As the sun sets, attendees will | |
| Travel to Georgia Tech on You (Volunteers will be available to | Ir Own help direct participants who v | vish to take a Marta train.) | |

| Lunch Buffet* | | 12:00 PM | – 2:00 PM | Georgia Tech (Koen Plaza) |
|---------------------------------------------------------|------------------------------|-----------|--------------------------------|----------------------------------|
| G4G Sculpture, Strolling Magiciar | ns, & Activities* | 2:00 PM – | 5:00 PM | Georgia Tech (Koen Plaza) |
| Catered Dinner* | 5:00 PM – 6:45 P | M | Georgia Tech | (Koen Plaza) |
| Ingrid Daubechies "Reunited: An Art Historical and D | 7:00 PM Pigital Adventure | 11 | Georgia Tech, 103 Classroor | Instructional Center (055), n |

*Special Event ticket required.

| | Speaker | Title | | |
|----------|--------------------|--------------------------------------------------------------------------------------------------------------|--------|----------|
| 8:30 AM | Tomas Rokicki * | Twizzle: Twisty Puzzle Simulator in JavaScript | 6 min | 8:30 AM |
| | Lucas Garron * | Browsers, Bluetooth, and VR: From Physical to Virtual Twisty Puzzles | 6 min | - |
| | Carl Hoff | The Double Circle Real 6×6×6 | 6 min | - |
| | David Plaxco | Knot Theory on the n*n*n Rubik's Cube | 6 min | - |
| | Robert Fathauer | Walkable Knots and Links | 6 min | - |
| | Karl Schaffer * | Dancing Topologically: Paths, Passes, and Puzzles | 6 min | - |
| | Chris Hibbert | Math in Ingress | 6 min | - |
| | Jeanine Meyer | Origami with Explanations | 6 min | - |
| | Akio Hizume * | k Fibonacci Turbine | | - |
| 9:45 AM | | Break | 30 min | 9:45 AM |
| 10:15 AM | Alexander Kernbaum | Seven Ways to Make an Ellipse — and One That Might be Useful | 6 min | 10:15 AN |
| | Aaron Siegel * | Adventures in 3D Puzzle Printing | 6 min | - |
| | Dave Buck | Playing Cards as Art | 6 min | - |
| | Nicole Dieker * | Music Performance | 4 min | - |
| | Scott Vorthmann | Customizing Zometool | 6 min | - |
| | George Hart | A Quick Summary of Hands-on Mathematical Activities Participants May Enjoy During the Excursion Afternoon | 10 min | - |
| 11:15 AM | | | | 11:15 AM |

| | • | | | |
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Saturday, April 9th, 2022

(*) = VIRTUAL PRESENTATION

Morning Session: 8:30 AM - 11:15 AM

RITZ-CARLTON MAP

Gathering 4 Gardner 14 Presentation Schedule

Sunday, April 10th, 2022

(*) = VIRTUAL PRESENTATION

Morning Session: 8:30 AM - 12:00 PM

| | Speaker | Title | | |
|----------|-------------------------------|---------------------------------------------------------------------------|--------|----------|
| 8:30 AM | Todd Wilk Estroff | The Ultimate Puzzle: a Psychiatrist Trying to Unravel Human Behavior | 7 min | 8:30 AM |
| | Dana Randall | Dumb Robots, Smart Algorithms | 6 min | • |
| | Lew Lefton | Mathematical Comedy | 6 min | • |
| | Sabetta Matsumoto | Mobius Cellular Automata Scarves | 6 min | - |
| | Delicia Kamins * | Fractal Top Down | 6 min | • |
| | Tiago Hirth | The First Recreational Mathematics Meeting | 6 min | • |
| | Roger Russell Manderscheid | The Amazing Number 153 and How it Captured Me | 6 min | - |
| | Cindy Lawrence | Million Millimeter March for MoMath | 6 min | - |
| | Jim Weinrich | Does Conway's "Game of Life" Predict That the Speed of Light is Constant? | 6 min | - |
| 10:00 AM | | | | 10:00 AM |
| | | Break | 30 min | |
| 10:30 AM | Bob Hearn | Rectangular Unfoldings of Polycubes | 6 min | 10:30 AM |
| | David Richeson | Circle Square Illusions | 6 min | - |
| | Yossi Elran | John Conway's Doomsday Rules for the Hebrew Calendar | 6 min | - |
| | Stephen Macknik | Champions from The Best Illusion of the Year Contest | 6 min | - |
| | Henry Segerman | Geared Mechanisms | 6 min | - |
| | Nancy Blachman | COVID Misinformation Spreads because Many Don't Understand Math | 6 min | - |
| | Erik Demaine * | New Adventures in Puzzle Fonts | 6 min | - |
| | P. Justin Kalef | The Whys (and Hows) of a Philosophical Teacher | 6 min | - |
| | Douglas McKenna | Half-Domino Curves in an Interactive Math Book | 6 min | - |
| | Cassondra Darling | Deciphering Wonderlands - Creating a Martin Gardner Digital Library | 6 min | - |
| 12:00 PM | | | , | 12:00 PM |

Presentation Abstracts Available Online: www.gathering4gardner.org/g4g14-abstracts.pdf

Sign In & Registration

New arrivals should sign-in on the lower level before the presentations or during breaks. Exchange gifts will not be accepted after 7 PM on Thursday, April 7th.

before their presentation. Virtual presenters should check in with Scott Vorthmann via email.

| | 7:00 AM – | |
|-------------------------------------------------|------------------|--|
| Sales Tables 8:00 AM | _ | |
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Presentation Sessions

8:30 AM - 1:00 PM **Conference Ballroom, Lower-Level** See facing page for a detailed schedule of talks.

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SUNDAY, APRIL 10TH

8:00 AM - 1:00 PM

Ballroom Foyer, Lower-Level

All in-person presenters should verify their audiovisual equipment needs with the hotel AV staff or with Bob Hearn

8:00 AM **Georgian Room, Ground Floor**

- 1:00 PM Sales Rooms, 2nd Floor
- 1:00 PM **Exhibitor Room, 2nd Floor**

LIST OF ATTENDEES

The following names and contact information are provided with permission of G4G participants. This list is not for distribution or unwarranted use. We thank you for your courtesy in this regard. Names with asterisk (*) are virtual attendees.

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GIFT EXCHANGE INFORMATION

The Gift Exchange began at G4G1 with Scott Kim assembling a collection of papers by participants and presenting them to Martin Gardner. The exchange is a tribute to the shared curiosity that Martin fueled and we place special emphasis on creativity and originality. The gift should be something you think Martin would have liked.

Exchange Gifts not shipped in advance should be dropped off when you sign-in. Exchange gifts will not be accepted after 7 PM on Thursday, April 7th.

Rules of the Exchange:

For complete outline of the gift exchange details, visit: www.gathering4gardner.org/gift-exchange-details

To receive other people's gifts, you must give one yourself or as a team (to all participants). Two people presenting one gift may receive two gift bags if you provide both names when you deliver your gifts. The organizers are the final arbiters of the exchange.

G4G14 Physical Exchange Gifts:

Physical exchanges (e.g., puzzles, models, artwork, etc.) can be picked up at the Gathering on the Ground Floor, Georgian Room, starting on Friday at 10 PM (for attendees leaving early) and continuing on Saturday and Sunday. Submissions must be received by 7 PM on Thursday, April 7th to ensure inclusion. It is your responsibility to get your exchange to the conference organizers on time.

G4G14 Exchange Book:

The Exchange Book is for those who wish to submit papers as their exchange gift and also for those who wish to include descriptions, instructions, and/or solutions, to go with their physical gifts. The exchange book will be published on the G4G website. Physical printing of the book is TBD. Updates will be announced through G4G's email newsletter and on the website.

Your submission to the G4G14 Exchange Book grants Gathering 4 Gardner copyright permission to reprint the submission only in bound complete volumes, and not as individual articles. The book will also be published on the G4G website with permission from the contributing authors (any papers not granted permission will still appear in the print version of the book but will be excluded from the online version).

All submissions MUST be confirmed by the organizers by 7 PM on Thursday, April 7th to participate in the exchange. However, the deadline for submitting final papers for the G4G14 Exchange Book is yet to be determined. We will notify everyone who participated in the Gift Exchange of the deadline via email.

Submission of Files:

Files can be uploaded through the G4G14 registration website: www.conftool.com/g4g14 (Login and click on "Your Submissions").

Legacy Circle (Tier 1):

Elwyn and Jennifer Berlekamp Foundation **Simons Foundation** Sarah Garvin Rodgers Nancy Blachman (JRMF.org and G4G) Jade Vinson Anonymous (2)

Polymath Circle (Tier 2):

Wei-Hwa Huang Bill Ritchie (ThinkFun) David Rossetti

Mathematicians Circle (Tier 3):

Daniel Bain **Robert Jones** Tom Longtin Colm Mulcahy Bruce Oberg Martha Reis Alex Siegel Lauren Siegel Henry Strickland

Puzzlers Circle (Tier 4):

Darryl Adams **Robert Crease** Michael Cronin William Cutler The Deupree Family Foundation James Gardner (The Martin Gardner Literary Interests General Partnership) Masato Kamei Gerry Ohrstrom Gwen Roberts Doris Schattschneider Hilarie Orman & Richard Schroeppel Aaron Siegel Al Smith **Rick Sommer** James Stephens Stephen Turner Anonymous (3)

Magicians Circle (Tier 5):

Thomas Banchoff Mark Burstein Irl Bivens **Timothy Chow** David Cohen **Evans Harrell Barry Hayes** Chris Hibbert Mickey McManus Neal Seidlitz Greg Whitehead Anonymous (1)

Asha Apte Ravi Apte Adam Atkinson Franco Baseggio Nick Baxter George I Bell Art Benjamin **Bryan Bischof** Marshall Bishop Robert Bosch Matt Brocchini Kenneth Brecher Bronna Butler Joseph Cassavaugh William Cutler Tom Davis Arthur O Dwyer Todd Estroff Jeremiah Farrell Douglas Gaffin Faye Goldman Derek Hauser **Barry Hayes** Charles L. Hearn Frederick Henle Steve Hoberman Hirokazo Iwasawa Keith Jackson Kate Jones Josh Jordan David Kahn Justin Kalef Jennifer Kane Louis Kauffman Haruyuki Kawabe Vickie Kearn Marty Keene Margaret Kepner Tanya Khovanova Jack Kutilek Ron Lancaster Eric Larson Lew Lefton Maria Levitin Andy Liu Zhi Kin Loke John E Millier Phuong Nguyen **Timothy Notari** Paul O'Malley David Kelly & Allan Meneely Robert Orndorff Alice Peters **Bill Phillips Miquel Duran Portas** Marti Reis Dragos Ristache

ACKNOWLEDGMENTS

Gathering 4 Gardner would like to thank the following for their support of the foundation, and its conferences and programs.*

Writers Circle (Tier 6):

Tomas Rokicki Jason Rosenhouse Marjorie Senechal Anna Sheen **Yvonne Shelnutt** Will Shortz Lauren Siegel lan Simpson Pablo Soberon Norton Starr Michael Tanoff Ernest Triaa William Tunstall-Pedoe **Keith Twombley** Elizabeth Uptegrove **Robert Vallin** Takayuki Yoshigahara

Skeptics Circle (Tier 7):

Sorin Alexe Steve Algernon Jennifer Austin Franco Baseggio Colin Beveridae Jennifer Beineke Simon Bexfield Pierre Berloquin Sandor Bozoki Jim Bumgardner Joe Celko Josh Clouser Robert Crease James Dalgety Erik Demaine Yossi Elran Frank Farris **Roger Friedman Robert Fuhrer** Abel Garcia William Gasarch Andrea Gilbert Susan Goldstine

Rik van Grol **Evans Harrell Edmund Harriss** George Hart Tiago Hirth Lyman Hurd Stanley Isaacs Masayoshi Iwai Craig Kaplan Peter Knoppers Ronnie Kon Evelyn Lamb Christopher Lynn Christopher McElroy Douglas McKenna John Miller Paul & Catherine Mohr Christopher Morgan Roice Nelson Craig Newswanger Robert Orndorff Douglas O'Roark Owen O'Shea Marc Pawliger David Plaxco Peter Renz David Richeson Margaret S Roberts Tomas Rokicki Henry Segerman Carlo Sequin Lauren Siegel Dan Simon David Singmaster Charles Sonenshein Daina Taimina Donald Troup Scott Vorthmann Gerard Westendorp Colin Wright Carolyn Yackel Anonymous (7)

G4G is financially supported by our community; people like you who want to share Martin Gardner's legacy of curiosity with the world. Please consider making a donation via www.gathering4gardner.org/donate or mail your donation check to:

Gathering 4 Gardner, Inc. 2885 Sanford Ave SW #39552 Grandville, MI 49418

*Donations listed include all G4G Circle-Level Donations since January 2016.

G4G Collegiality Statement

G4G is a gathering of people of all ages from many disciplines with different interests. However, we all have one thing in common and that is our love of Martin Gardner and his legacy which we are here to celebrate. We are here to share our ideas and learn about yours. We are here to see old friends and make new ones and to have a great time!

Some of us have been to all of the Gatherings and some of us are here for the first time. So, here are a few guidelines to ensure that we all have a great time.

Please welcome new attendees, especially the young attendees who might not find it easy to engage a more senior attendee in conversation. We welcome and encourage diversity and different opinions and ideas, but G4G is not a political platform.

We encourage mutual respect and ask that you refrain from promoting bias and stereotypes about race, nationality, religion, gender and sexual orientation, or other personal characteristics.

If you feel uncomfortable at any time during the meeting because of unbecoming behavior, please notify Vickie Kearn (G4G board member) who will address the issues confidentially.

Thank you and enjoy the meeting.

Special Thanks To:

Program Scheduling – Bob Hearn

Evening Entertainment – Mark Mitton (Chair) & Mark Setteducati

Georgia Tech Offsite – Kristin Morales (Coordinator), George Hart (Sculpture & Activities Coordinator), Evans Harrell (Dept of Math) & Matt Baker (Offsite Magic)

Youth Initiative Coordinators – Erika Roldan & Mónica Delgado

Volunteer Coordination – Jodi Meusel & Edoardo Kulp

Sales & Exhibits Room Coordinator – Robert Fathauer

Nomination Review Coordinator - Tiago Hirth

...and many thanks to all of the volunteers and attendees for making this such a worthwhile event. We look forward to seeing you at the next Gathering (G4G15 in 2024).

The G4G Foundation would also like to acknowledge Co-Founder Mark Setteducati for his continuing vital support of the G4G movement and Nancy Blachman for what she does behind the scenes.

www.Gathering4Gardner.org

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