Erik D. Demaine

Academic Curriculum Vitæ

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Canadian and U.S. Citizen

Educational Background

Ph.D.	University of Waterloo, 1996–2001. Advisors: Anna Lubiw and J. Ian Munro
M.Math.	University of Waterloo, 1995–1996. Advisor: David Taylor
B.Sc.	Dalhousie University, 1993–1995. Advisor: Sampalli Srinivas

Positions Held

July 2011–present	Professor, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology
July 2007–June 2011	Associate Professor with tenure, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology
July 2005–June 2007	Associate Professor, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology
July 2005–June 2008	Esther and Harold E. Edgerton Professor, Massachusetts Institute of Technology
Sept. 2001–June 2005	Assistant Professor, Department of Electrical Engineering and Computer Science, Massachusetts Institute of Technology
Sept. 2001–present	Member, Computer Science and Artificial Intelligence Laboratory, Massachusetts Institute of Technology

Teaching

Spring 2022	MIT 6.042, Mathematics for Computer Science. 234 MIT students. Rated 6.0/7.0.
Fall 2021	MIT 6.009, Fundamentals of Programming. 291 MIT students. Rated 6.6/7.0.
Spring 2021	MIT 6.851, Advanced Data Structures. 74 MIT students. Rated 6.3/7.0.
Fall 2020	MIT 6.849, Geometric Folding Algorithms: Linkages, Origami, Polyhedra. 50 MIT students. Rated 6.7/7.0.
Spring 2020	MIT 6.006, (New) Introduction to Algorithms. Not rated due to pandemic.
Fall 2019	MIT 6.009, Fundamentals of Programming. 331 MIT students. Rated 5.9/7.0.
Spring 2019	MIT 6.892, Algorithmic Lower Bounds: Fun with Hardness Proofs. 82 MIT students. Rated 6.7/7.0.
Fall 2018	MIT 6.006, (New) Introduction to Algorithms. 329 MIT students. Rated 6.5/7.0.
Spring 2018	MIT 6.009, Fundamentals of Programming. 348 MIT students. Rated 6.5/7.0.
Fall 2017	MIT 6.851, Advanced Data Structures. 53 MIT students. Rated 6.7/7.0.
Spring 2017	MIT 6.849, Geometric Folding Algorithms: Linkages, Origami, Polyhedra. 33 MIT students. Rated 6.6/7.0.
Fall 2016	MIT 6.006, (New) Introduction to Algorithms. 306 MIT students. Rated 6.4/7.0.
May 2016	University of Tokyo, Geometric Folding Algorithms.
Spring 2015	MIT 6.046, Design and Analysis of Algorithms. 233 MIT students. Rated 6.1/7.0.
Fall 2014	MIT 6.890, Algorithmic Lower Bounds: Fun with Hardness Proofs. 37 MIT students.
Spring 2014	MIT 6.851, Advanced Data Structures. 60 MIT students. Rated 6.5/7.0.
Nov. 2013	The University of the Arts, Philadelphia, Computer-Aided Design of Glass Cane, with Martin Demaine.
Fall 2013	MIT 6.006, (New) Introduction to Algorithms. 221 MIT students. Rated 6.5/7.0.
July 2013	Haystack Mountain School of Crafts, Deer Isle, Maine, Computer-Aided Design of Glass Cane, with Martin Demaine and Peter Houk.
Spring 2013	MIT 6.046, Design and Analysis of Algorithms. 158 MIT students. Rated 6.3/7.0.

Spring 2013	MIT 6.S080, Mechanical Invention through Computation. 27 MIT/Harvard students. Rated 5.1/7.0.
Fall 2012	MIT 6.849, Geometric Folding Algorithms: Linkages, Origami, Polyhedra. 30 MIT students. Rated 6.6/7.0.
Spring 2012	MIT 6.851, Advanced Data Structures. 69 MIT students. Rated 6.6/7.0.
Fall 2011	MIT 6.006, (New) Introduction to Algorithms. Rated 6.2/7.0.
Fall 2011	MIT 6.889, Algorithms for Planar Graphs and Beyond. 16 MIT students. Rated 7.0/7.0.
Spring 2011	MIT 6.006, (New) Introduction to Algorithms. 163 MIT students. Rated 5.7/7.0.
Fall 2010	MIT 6.849, Geometric Folding Algorithms: Linkages, Origami, Polyhedra. 39 MIT students. Rated 6.5/7.0. According to the *Underground Guide to Course 6*, "Demaine had a casual yet engaging style of presentation ... had good blackboard technique and explained the concepts of the class clearly ... [and] was very enthusiastic and knowledgeable about the material." One student wrote "this class was one of the reasons I came to MIT!"
Spring 2010	MIT 6.851, Advanced Data Structures. 26 MIT students. Rated 6.4/7.0.
Spring 2010	Supervisor for MIT ESG SP.268, Topics in the Mathematics of Toys and Games, by Melissa Gymrek and Jing Li. 6 MIT students.
IAP 2007	MIT A433, Cool Algorithms: Video Recording for Future Generations, with Martin Demaine and Jean-Jacques Quisquater. 21 students.
Fall 2009	MIT 6.046, Design and Analysis of Algorithms. 109 MIT students. Rated 6.3/7.0.
Aug. 2008	MADALGO Summer School on Cache-Oblivious Algorithms. MADALGO, University of Aarhus, Denmark. Several lectures on cache-oblivious data structures and geometric algorithms.
Spring 2008	MIT 6.006, (New) Introduction to Algorithms. 75 MIT students. According to the *Underground Guide to Course 6*, "Demaine ... was very enthusiastic and passionate ... [and] related well to students." Rated 6.2/7.0.
Fall 2007	MIT 6.885, Geometric Folding Algorithms: Linkages, Origami, Polyhedra. 20 MIT students, 44 listeners. According to the *Underground Guide to Course 6*, "Demaine ... is an enthusiastic and fun lecturer. ... Several students took the class because of the professor." Rated 6.6/7.0.
Spring 2007	MIT 6.851, Advanced Data Structures. 25 MIT students, 11 listeners. According to the *Underground Guide to Course 6*, "Some [students] took it specifically because Erik Demaine was lecturing." Rated 6.7/7.0.
IAP 2007	MIT 6.096, Knot Language: Recreating Inca Quipu/Khipu, with Martin Demaine and Jean-Jacques Quisquater. 23 credit MIT students, 20 listeners.
Fall 2006	MIT 6.046J/18.410J, Introduction to Algorithms, with Madhu Sudan. 90 MIT students, 2 listeners. According to the *Underground Guide to Course 6*, "Demaine ... was funny and gave clear lectures ... [has] a thorough understanding of the subject and was enthusiastic ... very personable and available outside of class for help." Rated 5.7/7.0.
Fall 2005	MIT 6.046J/18.410J/SMA5503, Introduction to Algorithms, with Charles Leiserson. 85 MIT students, 2 listeners, 6 SMA students. According to the *Underground Guide to Course 6*, "Demaine ... was praised for being clear, enthusiastic, and funny. Students thought his lectures were fun, that he had a great presentation style, and they also appreciated his nerdy humor." Rated 6.2/7.0.
Spring 2005	MIT 6.897, Advanced Data Structures. 12 MIT students, 7 listeners. Rated 6.7/7.0.
IAP 2005	MIT IAP 6451, Junkyard Art: The Art of Recycling, with Jeff Smith, Justin Adams, and Martin Demaine.
Fall 2004	MIT 6.885, Folding and Unfolding in Computational Geometry. 12 MIT students, 7 listeners. According to the *Underground Guide to Course 6*, "Demaine ... was universally praised as an excellent, clear lecturer who made good use of the black-

	board and projector. ... No CS student should leave MIT without taking an Erik Demaine class." Rated 6.5/7.0.
Fall 2004	MIT 4.491, Form-Finding and Structural Optimization, with Barb Cutler, Martin Demaine, Simon Greenwold, Axel Kilian, and John Ochsendorf.
Spring 2004	MIT 6.046J/18.410J, Introduction to Algorithms, with Shafi Goldwasser. 103 MIT students. According to the *Underground Guide to Course 6*, "Demaine ... was widely considered to be an excellent lecturer. He was interesting and funny while giving clear explanations." Rated 6.3/7.0.
Spring 2004	MIT 4.493, 3-D Design Tools for Equilibrium: Exploring Gaudi's World, with Barb Cutler, Martin Demaine, Axel Kilian, and John Ochsendorf.
April 2004	2004 Novartis IT Excellence Program MIT, MIT Office of Professional Education Programs. Lecture on algorithms.
IAP 2004	MIT IAP 5804, Building with Books, with Martin Demaine, Chris Dewart, Stephanie Hartman, Wendy Jacob, and John Ochsendorf.
Fall 2003	MIT 6.854/18.415J, Advanced Algorithms, with David Karger. 58 MIT students. According to the *Underground Guide to Course 6*, "Demaine was lively, charismatic, knowledgable... His lectures were entertaining... insightful, interesting..." Rated 6.0/7.0.
Spring 2003	MIT 6.897, Advanced Data Structures. 37 MIT students, 10 listeners. According to the *Underground Guide to Course 6*, "Demaine was very knowledgeable about the material and gave very clear explanations of complicated material. Demaine created a laid back yet exciting environment to learn and was good at encouraging questions from the students." Rated 6.2/7.0.
Fall 2002	MIT 6.046J/18.410J, Introduction to Algorithms, with Shafi Goldwasser. 112 MIT students. According to the *Underground Guide to Course 6*, "Demaine was easy to understand, knowledgeable, well prepared, and had good board technique. He was appreciated as a strong lecturer overall, with a good choice of topics presented in the class and well structured presentations." Rated 5.7/7.0.
June 2002	EEF Summer School on Massive Data Sets. BRICS, University of Aarhus, Denmark. Several lectures on cache-oblivious algorithms and data structures.
Fall 2001	MIT 6.046J/18.410J/SMA5503, Introduction to Algorithms, with Charles Leiserson. 140 MIT students, 37 SMA students. According to the *Underground Guide to Course 6*, "A substantial number of students said that [Demaine's] lectures in this course were among the best at MIT." Rated 5.7/7.0.
Spring 1999	University of Waterloo CS 360, Introduction to the Theory of Computing. 80 students. Ranked by student evaluations as #2 teacher among 40 course offerings in computer science.

Postdoctoral Researchers

1. Christian Sommer (2011–2012)
2. Siamak Tazari (2011)
3. André Schulz (2009–2010)
4. MohammadTaghi Hajiaghayi (joint with CMU, 2005–2007)

Current Students

Ph.D. candidates:

1. Josh Brunner
2. Lily Chung
3. Michael Coulombe
4. Yevhenii Diomidov
5. Dylan Hendrickson
6. Klara Mundilova

I also serve as academic advisor to 21 MIT undergraduates (Sept. 2002–present).

Graduated Students

Ph.D. Theses:

1. Quanquan Liu (EECS), "Scalable and Efficient Graph Algorithms and Analysis Techniques for Modern Machines", completed Sept. 2021.
2. Jayson Lynch (EECS), "A Framework for Proving the Computational Intractability of Motion Planning Problems", completed Sept. 2020.
3. Jeffrey Bosboom (EECS), "Exhaustive Search and Hardness Proofs for Games", completed Sept. 2020.
4. Ali Vakilian (EECS), "New Directions in Streaming Algorithms", completed Sept. 2019.
5. Hugo Akitaya (Tufts), "Recognizing Weak Embeddings", completed Aug. 2018.
6. Adam Hesterberg (Math), "Closed Quasigeodesics, Escaping from Polygons, and Conflict-Free Graph Coloring", completed May 2018.
7. Zachary Abel (Math), "On Folding and Unfolding with Linkages and Origami", completed Sept. 2016.
8. Jason Ku (MechE, cosupervised with Sanjay Sarma), "On the Design of Physical Folded Structures", completed Aug. 2016.
9. Duks Koschitz (Architecture), "Computational Design with Curved Creases: David Huffman's Approach to Paperfolding", completed Aug. 2014.
10. Andrew Winslow (Tufts, cosupervised with Diane Souvaine), "Staged Self-Assembly and Polyomino Context-Free Grammars", completed Feb. 2014.
11. Morteza Zadimoghaddam (EECS), "Online Allocation Algorithms with Applications in Computational Advertising", completed Jan. 2014.
12. Jelani Nelson (EECS, cosupervised with Piotr Indyk): "Sketching and Streaming High-Dimensional Vectors", completed Aug. 2011.
13. Nadia Benbernou (Math): "Geometric Algorithms for Reconfigurable Structures", completed Aug. 2011.
14. Oren Weimann (EECS): "Accelerating Dynamic Programming", completed Mar. 2009.
15. Mihai Pătraşcu (EECS): "Lower Bound Techniques for Data Structures", completed Sept. 2008.
16. Dion Harmon (Math): "New Bounds on Optimal Binary Search Trees", completed May 2006.
17. Robert Hearn (EECS, cosupervised with Gerald Sussman): "Games, Puzzles, and Computation", completed May 2006.
18. MohammadTaghi Hajiaghayi (Math): "The Bidimensionality Theory and Its Algorithmic Applications", completed May 2005.
19. Nicole Immorlica (EECS, cosupervised with David Karger): "Computing with Strategic Agents", completed May 2005.
20. David Liben-Nowell (EECS): "An Algorithmic Approach to Social Networks", completed May 2005.

M.Eng. Theses:

21. Dylan Hendrickson (EECS): "Gadgets and Gizmos: A Formal Model of Simulation in the Gadget Framework for Motion Planning", completed June 2021.
22. Josh Brunner (EECS): "Subway Shuffle, 1×1 Rush Hour, and Cooperative Chess Puzzles: Computational Complexity of Puzzles", completed June 2021.
23. Ivan Tadeu Ferreira Antunes Filho (EECS): "Characterizing Boolean Satisfiability Variants", completed Sept. 2019.
24. Ray Hua Wu (EECS): "Complexity of Minesweeper with Restricted Number Sets", completed Feb. 2018.
25. Kai Xiao (EECS): "Cookie Clicker", completed Feb. 2018.
26. Mikhail Rudoy (EECS): "Hamiltonian Cycle and Related Problems: Vertex-Breaking, Grid Graphs, and Rubik's Cubes", completed May 2017.
27. Quanquan Liu (EECS): "Red-Blue and Standard Pebble Games: Complexity and Applications in the Sequential and Parallel Model", completed Feb. 2017.
28. Andrea Lincoln (EECS): "Analysis of Recursive Cache-Adaptive Algorithms", completed June 2014.
29. Yanping Chen (EECS): "Edge-Unfolding Almost-Flat Convex Polyhedral Terrains", completed May 2013.

30. Kimberly Baldauf (EECS): "A User Interface for Customizing Cane Layouts in Virtual Glass", completed Sept. 2012.
31. Tom Morgan (EECS): "Map Folding", completed June 2012.
32. Aviv Ovadya (EECS): "Origami Transformers: Folding Orthogonal Structures from Universal Hinge Patterns", completed Aug. 2010.
33. Katherine Lai (EECS): "Complexity of Union-Split-Find Problems", completed May 2008.
34. Ilya Baran: "Adaptive Algorithms for Problems Involving Black-Box Lipschitz Functions", completed May 2004.

Editorial Work

1. Editorial board, *Journal of Mathematics and the Arts*, 2014–present.
2. Editorial board, *Journal of Computational Geometry*, 2009–2012.
3. Editorial board, *Discrete & Computational Geometry*, 2006–present.
4. Guest co-editor, Special Issue of Selected Papers from ALENEX 2003, *ACM Journal of Experimental Algorithmics*, volume 8, 2003.
5. Co-editor, *The Open Problems Project* (an up-to-date compilation of important open problems in computational geometry), with Joseph Mitchell and Joseph O'Rourke, 2001–present.

Conference and Workshop Committees

1. Co-organizer, Special Session on Serious Recreational Mathematics, Joint Mathematics Meetings, 2024
2. Co-organizer, 3rd Virtual Workshop on Computational Geometry, Mar. 2022.
3. Co-organizer, 2nd Virtual Workshop on Computational Geometry, May 2021.
4. Co-organizer, 1st Virtual Workshop on Computational Geometry, Mar. 2020.
5. Co-organizer, 34th Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Mar. 2019.
6. Program committee, 8th International Conference on Fun with Algorithms, 2018.
7. Co-organizer, 33rd Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Mar. 2018.
8. Co-organizer, 32nd Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Jan. 2017.
9. Program committee cochair, 7th International Conference on Fun with Algorithms, 2016.
10. Co-organizer, 31st Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Mar. 2016.
11. Program committee, 16th Encuentros de Geometría Computacional, Barcelona, Spain, July 2015.
12. Program committee, 31st European Workshop on Computational Geometry, Ljubljana, Slovenia, March 2015.
13. Co-organizer, 30th Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Mar. 2015.
14. Co-organizer, ICERM Research Cluster: Towards Efficient Algorithms Exploiting Graph Structure, Providence, Rhode Island, Apr.–May 2014.
15. Co-organizer, 29th Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Mar. 2014.
16. Co-organizer, FOCS 2013 Tutorial on Bidimensional Structures: Algorithms and Combinatorics, Oct. 2013.
17. Co-organizer, Dagstuhl Seminar 13121 on Bidimensional Structures: Algorithms, Combinatorics and Logic, Wadern, Germany, Mar. 2013.
18. Co-organizer, 28th Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Mar. 2013.
19. Program committee, 18th International Conference on DNA Computing and Molecular Programming, Aarhus, Denmark, August 2012.
20. Program committee, 5th International Conference on Fun with Algorithms, Venice, Italy, June 2012.
21. Co-organizer, 27th Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Feb. 2012.
22. Program committee, 3rd Workshop on Massive Data Algorithmics, Paris, France, June 2011.
23. Program committee, 23rd Canadian Conference on Computational Geometry, Charlottetown, Canada, Aug. 2011.
24. Co-organizer, 26th Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Feb. 2011.
25. Program committee, 2nd Symposium on Innovations in Computer Science, Beijing, China, Jan. 2011.
26. Program committee, 2nd Workshop on Massive Data Algorithmics, Snowbird, Utah, June 2010.
27. Program committee, 5th International Conference on Fun with Algorithms, Ischia, Italy, June 2010.
28. Co-organizer, Seminar on Data Structures, Schloss Dagstuhl, Germany, Feb. 2010.
29. Co-organizer, 25th Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Feb. 2010.

30. Co-organizer, Seminar on Parameterized Complexity and Approximation Algorithms, Schloss Dagstuhl, Germany, Dec. 2009.
31. Program committee, Workshop on Massive Data Algorithmics, Aarhus, Denmark, June 2009.
32. Co-organizer, Workshop on Deciphering Inka Khipus and Other Lost Languages, Louvain-la-Neuve, Belgium, Apr. 2009.
33. Co-organizer, Workshop on Algorithmic Folding, Origami and Linkages, Brussels, Belgium, Mar. 2009.
34. Program committee, 25th European Workshop on Computational Geometry, Brussels, Belgium, Mar. 2009.
35. Co-organizer, 24th Bellairs Winter Workshop on Computational Geometry, Holetown, Barbados, Feb. 2009.
36. Program committee, 18th Annual Fall Workshop on Computational Geometry, Troy, NY, Oct. 2008.
37. Program committee, 17th Annual Fall Workshop on Computational Geometry, Hawthorne, NY, Nov. 2007.
38. Program committee, 19th Canadian Conference on Computational Geometry, Ottawa, Canada, Aug. 2007.
39. Program committee, 4th Workshop on Combinatorial and Algorithmic Aspects of Networking, Halifax, Canada, Aug. 2007.
40. Co-organizer, Seminar on Structure Theory and FPT Algorithmics for Graphs, Digraphs and Hypergraphs, Schloss Dagstuhl, Germany, July 2007.
41. Program committee, 13th Symposium on String Processing and Information Retrieval, Glasgow, Scotland, Oct. 2006.
42. Program committee, 2nd International Workshop on Parameterized and Exact Computation, Zürich, Switzerland, Sept. 2006.
43. Program committee, 10th Scandinavian Workshop on Algorithm Theory, Riga, Latvia, July 2006.
44. Program committee, 2nd Workshop on Combinatorial and Algorithmic Aspects of Networking, Waterloo, Canada, August 2005.
45. Program committee chair and organizing committee chair, 14th Annual Fall Workshop on Computational Geometry, Cambridge, MA, Nov. 2004.
46. Program committee, International Workshop on Parameterized and Exact Computation, Bergen, Norway, September 2004.
47. Program committee, 1st Workshop on Combinatorial and Algorithmic Aspects of Networking, Banff, Canada, August 2004.
48. Co-organizer, Seminar on Cache-Oblivious and Cache-Aware Algorithms, Schloss Dagstuhl, Germany, July 2004.
49. Program committee, 44th Annual IEEE Symposium on Foundations of Computer Science, Cambridge, Massachusetts, November 2003.
50. Program committee, 8th Workshop on Algorithms and Data Structures, Ottawa, Canada, July 2003.
51. Program committee, 19th Annual Symposium on Computational Geometry, San Diego, California, June 2003.
52. Video committee chair, 12th Annual Video Review of Computational Geometry, 19th Annual Symposium on Computational Geometry, San Diego, California, June 2003.
53. Program committee, 5th Workshop on Algorithm Engineering and Experiments, Baltimore, Maryland, January 2003.
54. Program committee, 12th Annual Fall Workshop on Computational Geometry, Piscataway, New Jersey, November 2002.
55. Program committee, 13th Annual ACM-SIAM Symposium on Discrete Algorithms, San Francisco, California, January 2002.
56. Co-organizer, Seminar on Algorithmic Combinatorial Game Theory, Schloss Dagstuhl, Germany, February 2002.
57. Program and organizing committee, 13th Canadian Conference on Computational Geometry, Waterloo, Canada, August 2001.
58. Video committee, 9th Annual Video Review of Computational Geometry, 16th Annual ACM Symposium on Computational Geometry, Hong Kong, June 2000.

University Committees

1. Exhibitions Advisory Group, MIT Museum (2017)
2. EECS Lecturer Selection Committee (2016)
3. CSAIL Computer Science 2040 Study Group (2013)

4. CSAIL-QCRI Steering Committee (2013–present)
5. EECS Faculty Search (2012–2013)
6. CSAIL Director Search Committee (2011, 2012)
7. EECS Curriculum Committee (2011)
8. EECS Education Working Group (2011)
9. MIT CSAIL Theory Group space czar (2010–present)
10. MIT 150 Curatorial Board (2010–2011)
11. Theory of Computing Colloquium Committee (2005–present)
12. CSAIL Executive Committee (2005–2006, 2009–2011)
13. Editorial board of MIT Faculty Newsletter (2004–present)
14. Curator of CSAIL Collection (2003–present)
15. Graduate student admissions for MIT EECS, 2004.
16. Graduate student admissions for MIT EECS, 2003.
17. Graduate student admissions for MIT EECS, 2002.

Boards

1. Co-president of board, Gathering for Gardner Foundation (2016–2020)
2. Advisory board, Museum of Mathematics (2011–present)
3. Support Board, Center for Graduate Education Initiative, Japan Advanced Institute of Science and Technology (2010–present)

Collaborators

I have published papers with the following 539 co-authors: Scott Aaronson (MIT), Timothy G. Abbott (MIT), Zachary Abel (MIT), Aaron B. Adcock (Stanford U.), Aviv Adler (MIT), Micah Adler (U. Massachusetts, Amherst), Hee-Kap Ahn (Pohang U. Science & Technology), Rebekah Ahrendt (Utrecht U.), Oswin Aichholzer (TU Graz), Hugo A. Akitaya (Tufts U.), Jin Akiyama (Tokyo U. Science), Nadine Akkerman (U. Leiden), Leo Alcock (Harvard U.), Noga Alon (Tel Aviv U.), Greg Aloupis (McGill U.), Stephen Alstrup (IT U. Copenhagen), John Calvin Alumbaugh (U. Arkansas), Victor Alvarez (TU Braunschweig), Byoung Kwon An (MIT), Walker Anderson (MIT), Joshua Ani (MIT), Lars Arge (U. Aarhus), Esther Arkin (SUNY Stony Brook), Boris Aronov (Polytechnic Inst. NYU), Will Arora (MIT), Elena Arseneva (St. Petersburg State University), Tetsuo Asano (JAIST), Yasuhiko Asao (U. Tokyo), Sualeh Asif (MIT), Daniel M. Aukes (Harvard U.), Franz Aurenhammer (TU Graz), Cordelia Avery (MIT), Jonathan Bachrach (U. California, Berkeley), Mihai Bădoiu (Google), Sang Won Bae (Pohang U. Science & Technology), Akira Baes (U. Libre de Bruxelles), Molly Baird (U. Washington, Seattle), Hari Balakrishnan (MIT), Devin Balkcom (Dartmouth), Brad Ballinger (U. California, Davis), Ziv Bar-Joseph (Carnegie Mellon U.), Ilya Baran (MIT), George Barbastathis (MIT), Gill Barequet (Technion), Mariel Bass, MohammadHossein Bateni (Sharif U. Technology), Aaron Becker (U. Houston), Nadia M. Benbernou (MIT), Carl Bender (Washington U.), Michael Bender (SUNY Stony Brook), David Benoit (InfoInteractive Inc.), Joseph Bergeron (MIT), Piotr Berman (Penn State U.), Marshall Bern (PARC), Vincent Bian (MIT), Therese Biedl (U. Waterloo), Sara C. Billey (U. Washington, Seattle), Michael Biro (Swarthmore College), Amartya Shankha Biswas (MIT), Glencora Borradaile (U. Waterloo), Jeffrey Bosboom (MIT), Prosenjit Bose (Carleton U.), Jonathan Bredin (Colorado College), Broňa Brejová (U. Waterloo), David Bremner (U. New Brunswick, Fredericton), Ron Breukelaar (U. Leiden), Gerth Brodal (U. Aarhus), Andrej Brodnik (Luleø Technical U.), Josh Brunner (MIT), Kevin Buchin (Freie U. Berlin), Maike Buchin (Freie U. Berlin), David Bunde (Knox College), Kyle Burke (Plymouth State U.), Michael A. Burr (New York U.), Jonathan Buss (U. Waterloo), Steve Butler (Iowa State U.), Sergio Cabello (IMFM), Sarah Cannon (Tufts U.), Jason Cantarella (U. Georgia, Athens), Jean Cardinal (U. Libre de Bruxelles), Svante Carlsson (Luleø Technical U.), Eowyn Čenek (U. Waterloo), Cameron Chalk (U. Texas Rio Grande Valley), Timothy M. Chan (U. Waterloo), David Charlton (MIT), Charlotte Chen (MIT), Kailiang Chen (MIT), Lijie Chen (MIT), Kenneth C. Cheung (NASA Ames), Kota Chida (U. Tokyo), Man-Kwun Chiu (Freie U. Berlin), Fotini Christia (MIT), Paul Christiano (MIT), Lily Chung (MIT), Barry Cipra (Minnesota), Stelian Ciurea (U. Lucian Blaga), Austin Clements (MIT), Alex Cole (MIT), Richard Cole (New York U.), Sébastien Collette (U. Libre de Bruxelles), Spencer Compton (MIT), Spencer Congero (U. California, San Diego), Robert

Connelly (Cornell U.), Carmen Cortés (U. Sevilla), Michael Coulombe (MIT), Michael Curry (U. Maryland), Kingston Yao Czajkowski (Cairo-Durham Middle School), David Dalrymple (MIT), Jana Dambrogio (MIT), Mirela Damian (Villanova U.), Constantinos Daskalakis (MIT), Eli Davis (MIT), Graham Davis (Queen Mary U. London), Joshua J. Daymude (Arizona State U.), David DeHaan (U. Waterloo), Martin L. Demaine (MIT), Ajay Deshpande (MIT), Satyan Devadoss (University of San Diego), John P. Dickerson (U. Maryland), Yevhenii Diomidov (MIT), Karim Douïeb (Carleton U.), Vida Dujmović (McGill U.), Muriel Dulieu (Polytechnic Inst. NYU), Christian Duncan (U. Miami), Roozbeh Ebrahimi (SUNY Stony Brook), Alan Edelman (MIT), Sarah Eisenstat (MIT), Dania El-Khechen (Concordia U.), Dotan Emanuel (Tel Aviv U.), Kim Eppling (MIT), David Eppstein (U. California, Irvine), Rogers Epstein (MIT), Jeff Erickson (U. Illinois, Urbana-Champaign), Ruy Fabila-Monroy (U. Nacional Autónoma de México), Martin Farach-Colton (Rutgers U.), Uriel Feige (Weizmann Institute), Sándor Fekete (TU Braunschweig), Samuel M. Felton (Harvard U.), Thomas Fevens (Concordia U.), Amos Fiat (Tel Aviv U.), Ivan Tadeu Ferreira Antunes Filho (MIT), Jeremy T. Fineman (Georgetown U.), Samuel Fiorini (U. Libre de Bruxelles), Robin Flatland (Siena College), Rudolf Fleischer (Fudan U.), Fedor Fomin (U. Bergen), Ian Foster (U. Chicago), Eli Fox-Epstein (Brown U.), Aviezri Fraenkel (Weizmann Institute), Greg Frederickson (Purdue U.), Erich Friedman (Stetson U.), Shmuel Gal (U. Haifa), Varun Ganesan (MIT), Blaise Gassend (MIT), Neil Gershenfeld (MIT), Amanda Ghassaei (San Francisco), Mohammad Ghodsi (Sharif U. Technology), David Gifford (MIT), Lukasz Golab (U. Waterloo), Mordecai Golin (Hong Kong U. Science and Technology), Alexander Golynski (U. Waterloo), Francisco Gomez-Martin (U. Politécnica de Madrid), Andrei Gonczi (Tufts U.), Timothy D. Goodrich (NC State U.), Vineet Gopal (MIT), Graham Gordon (U. Washington, Seattle), Aman Gour (IIT Bombay), Ronald Graham (U. California, San Diego), Forrest Green (MIT), Scott Greenwald (MIT), Sean Griffin (U. Washington, Seattle), Saul Griffith (Otherlab), Isaac Grosof (MIT), Yuzhou Gu (MIT), Joachim Gudmundsson (National ICT Australia), Alan Guo (MIT), Gregory Gutin (Royal Holloway U. London), Golnax Habibi (Rice U.), MohammadTaghi Hajiaghayi (U. Maryland), Angéle Hamel (Laurier U.), Linus Hamilton (MIT), Dion Harmon (New England Complex Systems Institute), George Hart (SUNY Stony Brook), Vi Hart (SUNY Stony Brook), Elizabeth Hartung (Massachusetts College of Liberal Arts), Nicholas J. A. Harvey (U. Waterloo), William Hasenplaugh (MIT), Elliot Hawkes (Stanford U.), Andrea Hawksley (MIT), Barry Hayes (PlaceWare Inc.), Robert A. Hearn (MIT), Jacob Hendricks (U. Wisconsin, River Falls), Dylan Hendrickson (MIT), Adam Hesterberg (Harvard U.), Lior Hirschfeld (MIT), Duc A. 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170. "Separating point sets in polygonal environments" (joint work with Jeff Erickson, Ferran Hurtado, John Iacono, Stefan Langerman, Henk Meijer, Mark Overmars, and Sue Whitesides), *International Journal of Computational Geometry and Applications*, volume 15, number 4, pages 403–419, Aug.

2005. Special issue of selected papers from SoCG 2004.

171. "Fixed-Parameter Algorithms for (k, r)-Center in Planar Graphs and Map Graphs" (joint work with Fedor V. Fomin, MohammadTaghi Hajiaghayi, and Dimitrios M. Thilikos), *ACM Transactions on Algorithms*, volume 1, number 1, pages 33–47, July 2005.
172. "Hinged Dissection of Polyominoes and Polyforms" (joint work with Martin L. Demaine, David Eppstein, Greg N. Frederickson, and Erich Friedman), *Computational Geometry: Theory and Applications*, volume 31, number 3, pages 237–262, June 2005. Special issue of selected papers from CCCG'99.
173. "Output-Sensitive Algorithms for Computing Nearest-Neighbour Decision Boundaries" (joint work with David Bremner, Jeff Erickson, John Iacono, Stefan Langerman, Pat Morin, and Godfried Toussaint), *Discrete & Computational Geometry*, volume 33, number 4, pages 593–604, Apr. 2005.
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175. "Exponential Speedup of Fixed-Parameter Algorithms for Classes of Graphs Excluding Single-Crossing Graphs as Minors" (joint work with MohammadTaghi Hajiaghayi and Dimitrios M. Thilikos), *Algorithmica*, volume 41, number 4, pages 245–267, Feb. 2005.
176. "Tetris is Hard, Even to Approximate" (joint work with Ron Breukelaar, Susan Hohenberger, Hendrik Jan Hoogeboom, Walter A. Kosters, and David Liben-Nowell), *International Journal of Computational Geometry and Applications*, volume 14, number 1–2, pages 41–68, 2004.
177. "Bidimensional Parameters and Local Treewidth" (joint work with Fedor V. Fomin, MohammadTaghi Hajiaghayi, and Dimitrios M. Thilikos), *SIAM Journal on Discrete Mathematics*, volume 18, number 3, pages 501–511, 2004.
178. "Fun-Sort—or the Chaos of Unordered Binary Search" (joint work with Therese Biedl, Timothy Chan, Rudolf Fleischer, Mordecai Golin, James A. King, and J. Ian Munro), *Discrete Applied Mathematics*, volume 144, number 3, pages 231–236, Dec. 2004.
179. "Approximation algorithms for classes of graphs excluding single-crossing graphs as minors" (joint work with MohammadTaghi Hajiaghayi, Naomi Nishimura, Prabhakar Ragde, and Dimitrios M. Thilikos), *Journal of Computer and System Sciences*, volume 69, number 2, pages 166–195, Sept. 2004.
180. "When Can You Fold a Map?" (joint work with Esther M. Arkin, Michael A. Bender, Martin L. Demaine, Joseph S. B. Mitchell, Saurabh Sethia, and Steven S. Skiena), *Computational Geometry: Theory and Applications*, volume 29, number 1, pages 23–46, Sept. 2004. Special issue of selected papers from the 10th Annual Fall Workshop on Computational Geometry, 2000.
181. "Tight Bounds on Maximal and Maximum Matchings" (joint work with Therese Biedl, Christian A. Duncan, Rudolf Fleischer, and Stephen G. Kobourov), *Discrete Mathematics*, volume 285, number 1–3, pages 7–15, Aug. 2004.
182. "Diameter and Treewidth in Minor-Closed Graph Families, Revisited" (joint work with MohammadTaghi Hajiaghayi), *Algorithmica*, volume 40, number 3, pages 211–215, Aug. 2004.
183. "Proximate Point Searching" (joint work with John Iacono and Stefan Langerman), *Computational Geometry: Theory and Applications*, volume 28, number 1, pages 29–40, May 2004. Special issue of selected papers from CCCG 2002.
184. "Solitaire Clobber" (joint work with Martin L. Demaine and Rudolf Fleischer), *Theoretical Computer Science*, volume 313, number 3, pages 325–338, Feb. 2004. Special issue of selected papers presented at the Schloss Dagstuhl Seminar on Algorithmic Combinatorial Game Theory, 2002.
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186. "Finding Hidden Independent Sets in Interval Graphs" (joint work with Therese Biedl, Broňa Brejová, Angèle M. Hamel, Alejandro López-Ortiz, and Tomáš Vinař), *Theoretical Computer Science*, volume 310, number 1–3, pages 287–307, Jan. 2004.
187. "Straightening Polygonal Arcs and Convexifying Polygonal Cycles" (joint work with Robert Connelly and Günter Rote), *Discrete & Computational Geometry*, volume 30, number 2, pages 205–239, Sept. 2003.
188. "A Linear Lower Bound on Index Size for Text Retrieval" (joint work with Alejandro López-Ortiz), *Journal of Algorithms*, volume 48, number 1, pages 2–15, Aug. 2003. Special issue of selected papers

from SODA 2001.

189. "Pushing Blocks is Hard" (joint work with Martin L. Demaine, Michael Hoffmann, and Joseph O'Rourke), *Computational Geometry: Theory and Applications*, volume 26, number 1, pages 21–36, Aug. 2003. Special issue of selected papers from CCCG 2001.
190. "Interlocked Open and Closed Linkages with Few Joints" (joint work with Stefan Langerman, Joseph O'Rourke, and Jack Snoeyink), *Computational Geometry: Theory and Applications*, volume 26, number 1, pages 37–45, Aug. 2003. Special issue of selected papers from CCCG 2001.
191. "On Universally Easy Classes for NP-complete Problems" (joint work with Alejandro López-Ortiz and J. Ian Munro), *Theoretical Computer Science*, volume 304, number 1–3, pages 471–476, July 2003.
192. "Palindrome Recognition Using a Multidimensional Tape" (joint work with Therese C. Biedl, Jonathan F. Buss, Martin L. Demaine, Mohammadtaghi Hajiaghayi, and Tomáš Vinař), *Theoretical Computer Science*, volume 302, number 1–3, pages 475–480, June 2003.
193. "Long Proteins with Unique Optimal Foldings in the H-P Model" (joint work with Oswin Aichholzer, David Bremner, Henk Meijer, Vera Sacristán, and Michael Soss), *Computational Geometry: Theory and Applications*, volume 25, number 1–2, pages 139–159, May 2003. Special issue of selected papers from EuroCG 2001.
194. "Ununfoldable Polyhedra with Convex Faces" (joint work with Marshall Bern, David Eppstein, Eric Kuo, Andrea Mantler, and Jack Snoeyink), *Computational Geometry: Theory and Applications*, volume 24, number 2, pages 51–62, Feb. 2003. Special issue of selected papers from CGC'99.
195. "K-ary Clustering with Optimal Leaf Ordering for Gene Expression Data" (joint work with Ziv Bar-Joseph, David K. Gifford, Angèle M. Hamel, Tommi S. Jaakkola, and Nathan Srebro), *Bioinformatics*, volume 19, number 9, pages 1070–1078, 2003. Special issue on Microarray Analysis.
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197. "Online Routing in Convex Subdivisions" (joint work with Prosenjit Bose, Andrej Brodnik, Svante Carlsson, Rudolf Fleischer, Alejandro López-Ortiz, Pat Morin, and J. Ian Munro), *International Journal of Computational Geometry and Applications*, volume 12, number 4, pages 283–295, Aug. 2002. Special issue of selected papers from ISAAC 2000.
198. "Flipturning Polygons" (joint work with Oswin Aichholzer, Carmen Cortés, Vida Dujmović, Jeff Erickson, Henk Meijer, Mark Overmars, Belén Palop, Suneeta Ramaswami, and Godfried T. Toussaint), *Discrete & Computational Geometry*, volume 28, number 2, pages 231–253, Aug. 2002.
199. "Enumerating Foldings and Unfoldings between Polygons and Polytopes" (joint work with Martin L. Demaine, Anna Lubiw, and Joseph O'Rourke), *Graphs and Combinatorics*, volume 18, number 1, pages 93–104, 2002.
200. "Balanced k-Colorings" (joint work with Therese C. Biedl, Eowyn Čenek, Timothy M. Chan, Martin L. Demaine, Rudolf Fleischer, and Ming-Wei Wang), *Discrete Mathematics*, volume 254, pages 19–32, 2002.
201. "A Note on Reconfiguring Tree Linkages: Trees can Lock" (joint work with Therese Biedl, Martin Demaine, Sylvain Lazard, Anna Lubiw, Joseph O'Rourke, Steve Robbins, Ileana Streinu, Godfried Toussaint, and Sue Whitesides), *Discrete Applied Mathematics*, volume 117, number 1–3, pages 293–297, 2002.
202. "Locked and Unlocked Polygonal Chains in Three Dimensions" (joint work with T. Biedl, M. Demaine, S. Lazard, A. Lubiw, J. O'Rourke, M. Overmars, S. Robbins, I. Streinu, G. Toussaint, and S. Whitesides), *Discrete & Computational Geometry*, volume 26, number 3, pages 269–281, Oct. 2001.
203. "Polygons Cuttable by a Circular Saw" (joint work with Martin L. Demaine and Craig S. Kaplan), *Computational Geometry: Theory and Applications*, volume 20, number 1–2, pages 69–84, Oct. 2001. Special issue of selected papers from CCCG 2000.
204. "Reconfiguring Convex Polygons" (joint work with Oswin Aichholzer, Jeff Erickson, Ferran Hurtado, Mark Overmars, Michael A. Soss, and Godfried T. Toussaint), *Computational Geometry: Theory and Applications*, volume 20, number 1–2, pages 85–95, Oct. 2001. Special issue of selected papers from CCCG 2000.
205. "Generalized Communicators in the Message Passing Interface" (joint work with Ian Foster, Carl Kesselman, and Marc Snir), *IEEE Transactions on Parallel and Distributed Systems*, volume 12, num-

ber 6, pages 610–616, June 2001.

206. "Efficient Algorithms for Petersen's Matching Theorem" (joint work with Therese C. Biedl, Prosenjit Bose, and Anna Lubiw), *Journal of Algorithms*, volume 38, pages 110–134, 2001. Special issue of selected papers from SODA'99.
207. "Folding Flat Silhouettes and Wrapping Polyhedral Packages: New Results in Computational Origami" (joint work with Martin L. Demaine and Joseph S. B. Mitchell), *Computational Geometry: Theory and Applications*, volume 16, number 1, pages 3–21, 2000. Special issue of selected papers from CGC'98.
208. "C to Java: Converting Pointers into References", *Concurrency: Practice and Experience*, volume 10, number 11–13, pages 851–861, 1998.
209. "Routing Algorithms on Static Interconnection Networks: A Classification Scheme" (joint work with Sampalli Srinivas), *International Journal of Computer Systems Science and Engineering*, volume 12, number 6, pages 359–367, Nov. 1997.
210. "A Novel Routing Algorithm for k-ary n-cube Interconnection Networks" (joint work with Sampalli Srinivas), *International Journal of High Speed Computing*, volume 8, number 1, pages 81–92, 1996.

Refereed Book Chapters

211. "Losing at Checkers is Hard" (joint work with Jeffrey Bosboom, Spencer Congero, Martin L. Demaine, and Jayson Lynch), in *The Mathematics of Various Entertaining Subjects*, volume 3, pages 103–118, 2019, Princeton University Press.
212. "Spiral Galaxies Font" (joint work with Walker Anderson and Martin L. Demaine), in *The Mathematics of Various Entertaining Subjects*, J. Beineke and J. Rosenhouse, eds., volume 3, pages 24–30, 2019, Princeton University Press.
213. "Juggling and Card Shuffling Meet Mathematical Fonts" (joint work with Martin L. Demaine), in *Connections in Discrete Mathematics: A Celebration of the Work of Ron Graham*, S. Butler, J. Cooper, and G. Hurlbert, eds., pages 297–304, 2018, Cambridge University Press.
214. "Conic Crease Patterns with Reflecting Rule Lines" (joint work with Martin L. Demaine, David A. Huffman, Duks Koschitz, and Tomohiro Tachi), in *Origami^7: Proceedings of the 7th International Meeting on Origami in Science, Mathematics and Education*, volume 2, pages 573–590, Oxford, England, Sept. 2018, Tarquin.
215. "Fast, Interactive Origami Simulation using GPU Computation" (joint work with Amanda Ghassaei and Neil Gershenfeld), in *Origami^7: Proceedings of the 7th International Meeting on Origami in Science, Mathematics and Education*, volume 4, pages 1151–1166, Oxford, England, Sept. 2018, Tarquin.
216. "Efficient Origami Construction of Orthogonal Terrains using Cross-Section Evolution" (joint work with Amartya Shankha Biswas and Jason S. Ku), in *Origami^7: Proceedings of the 7th International Meeting on Origami in Science, Mathematics and Education*, volume 2, pages 631–646, Oxford, England, Sept. 2018, Tarquin.
217. "Efficient Foldings of Triangular and Hexagonal Mazes" (joint work with Jason S. Ku and Madonna Yoder), in *Origami^7: Proceedings of the 7th International Meeting on Origami in Science, Mathematics and Education*, volume 2, pages 647–652, Oxford, England, Sept. 2018, Tarquin.
218. "Geometry and Topology of Polygonal Linkages" (joint work with Robert Connelly), in *CRC Handbook of Discrete and Computational Geometry*, Third Edition, pages 233–256, Nov. 2017, chapter 9.
219. "Clickomania is Hard Even With Two Colors and Columns" (joint work with Aviv Adler, Adam Hesterberg, Quanquan Liu, and Mikhail Rudoy), in *The Mathematics of Various Entertaining Subjects*, volume 2, pages 325–363, 2017, Princeton University Press.
220. "Tangled Tangles" (joint work with Martin L. Demaine, Adam Hesterberg, Quanquan Liu, Ron Taylor, and Ryuhei Uehara), in *The Mathematics of Various Entertaining Subjects*, volume 2, pages 141–152, 2017, Princeton University Press.
221. "Computational Complexity of Arranging Music" (joint work with William S. Moses), in *The Mathematics of Various Entertaining Subjects*, volume 2, pages 364–378, 2017, Princeton University Press.
222. "Narrow Misère Dots-and-Boxes" (joint work with Sébastien Collette, Martin L. Demaine, and Stefan Langerman), in *Games of No Chance 4*, R. J. Nowakowski, ed., pages 57–64, 2015, Cambridge University Press.
223. "Bidimensionality" (joint work with Fedor Fomin, MohammadTaghi Hajiaghayi, and Dimitrios Thilikos), in *Encyclopedia of Algorithms*, pages 1–5, 2015, Springer.

224. "Rigid Flattening of Polyhedra with Slits" (joint work with Zachary Abel, Robert Connelly, Martin Demaine, Thomas Hull, Anna Lubiw, and Tomohiro Tachi), in *Origami^6: Proceedings of the 6th International Meeting on Origami in Science, Mathematics and Education*, volume 1, pages 109–118, Tokyo, Japan, Aug. 2014, American Mathematical Society.
225. "Scaling a Surface down to Any Fraction by Twist Folding" (joint work with Martin L. Demaine and Kayhan F. Qaiser), in *Origami^6: Proceedings of the 6th International Meeting on Origami in Science, Mathematics and Education*, volume 1, pages 201–208, Tokyo, Japan, Aug. 2014, American Mathematical Society.
226. "Characterization of Curved Creases and Rulings: Design and Analysis of Lens Tessellations" (joint work with Martin L. Demaine, David A. Huffman, Duks Koschitz, and Tomohiro Tachi), in *Origami^6: Proceedings of the 6th International Meeting on Origami in Science, Mathematics and Education*, volume 1, pages 209–230, Tokyo, Japan, Aug. 2014, American Mathematical Society.
227. "Filling a Hole in a Crease Pattern: Isometric Mapping of a Polygon given a Folding of its Boundary" (joint work with Jason Ku), in *Origami^6: Proceedings of the 6th International Meeting on Origami in Science, Mathematics and Education*, pages 177–188, Tokyo, Japan, Aug. 2014, American Mathematical Society.
228. "Weaving a Uniformly Thick Sheet from Rectangles" (joint work with Eli Davis, Martin L. Demaine, and Jennifer Ramseyer), in *Origami^6: Proceedings of the 6th International Meeting on Origami in Science, Mathematics and Education*, pages 177–188, Tokyo, Japan, Aug. 2014, American Mathematical Society.
229. "Balloon Polyhedra" (joint work with Martin L. Demaine and Vi Hart), in *Shaping Space: A Polyhedral Approach*, M. Senechal, ed., Second Edition, pages 33–40, 2013.
230. "Variations on Instant Insanity" (joint work with Martin L. Demaine, Sarah Eisenstat, Thomas D. Morgan, and Ryuhei Uehara), in *Space-Efficient Data Structures, Streams, and Algorithms: Papers in Honor of J. Ian Munro on the Occasion of His 66th Birthday*, A. Brodnik, A. López-Ortiz, V. Raman, and A. Viola, eds., Lecture Notes in Computer Science 8066, pages 33–47, Aug. 2013.
231. "Reconstructing David Huffman's Legacy in Curved-Crease Folding" (joint work with Martin L. Demaine and Duks Koschitz), in *Origami^5: Proceedings of the 5th International Conference on Origami in Science, Mathematics and Education*, pages 39–52, Singapore, July 2010, A K Peters.
232. "Degenerative Coordinates in 22.5° Grid System" (joint work with Tomohiro Tachi), in *Origami^5: Proceedings of the 5th International Conference on Origami in Science, Mathematics and Education*, to appear, Singapore, July 2010, A K Peters.
233. "Folding Any Orthogonal Maze" (joint work with Martin L. Demaine and Jason Ku), in *Origami^5: Proceedings of the 5th International Conference on Origami in Science, Mathematics and Education*, pages 449–454, Singapore, July 2010, A K Peters.
234. "Circle Packing for Origami Design Is Hard" (joint work with Sándor P. Fekete and Robert J. Lang), in *Origami^5: Proceedings of the 5th International Conference on Origami in Science, Mathematics and Education*, pages 609–626, Singapore, July 2010, A K Peters.
235. "Universal Hinge Patterns to Fold Orthogonal Shapes" (joint work with Nadia M. Benbernou, Martin L. Demaine, and Aviv Ovadya), in *Origami^5: Proceedings of the 5th International Conference on Origami in Science, Mathematics and Education*, pages 405–420, Singapore, July 2010, A K Peters.
236. "Playing Games with Algorithms: Algorithmic Combinatorial Game Theory" (joint work with Robert A. Hearn), in *Games of No Chance 3*, M. H. Albert and R. J. Nowakowski, eds., Mathematical Sciences Research Institute Publications 56, pages 3–56, 2009, Cambridge University Press.
237. "The Complexity of Dyson Telescopes" (joint work with Martin L. Demaine, Rudolf Fleischer, Robert A. Hearn, and Timo von Oertzen), in *Games of No Chance 3*, M. H. Albert and R. J. Nowakowski, eds., Mathematical Sciences Research Institute Publications 56, pages 271–285, 2009, Cambridge University Press.
238. "Bidimensionality (2004; Demaine, Fomin, Hajiaghayi, Thilikos)" (joint work with MohammadTaghi Hajiaghayi), in *Encyclopedia of Algorithms*, pages 88–90, 2008, Springer-Verlag.
239. "Approximation Schemes for Planar Graph Problems (1983, 1984; Baker)" (joint work with MohammadTaghi Hajiaghayi), in *Encyclopedia of Algorithms*, pages 59–62, 2008, Springer-Verlag.
240. "All Polygons Flip Finitely... Right?" (joint work with Blaise Gassend, Joseph O'Rourke, and God-

fried T. Toussaint), in *Surveys on Discrete and Computational Geometry: Twenty Years Later*, J. Goodman, J. Pach, and R. Pollack, eds., Contemporary Mathematics 453, pages 231–255, 2008, American Mathematical Society. Proceedings of the AMS-IMS-SIAM Joint Summer Research Conference, June 18–22, 2006, Snowbird, Utah.

241. "Coin-Flipping Magic" (joint work with Nadia Benbernou, Martin L. Demaine, and Benjamin Rossman), in *Exchange Book of the 8th Gathering for Gardner*, Atlanta, GA, Mar. 2008.
242. "A Survey of Folding and Unfolding in Computational Geometry" (joint work with Joseph O'Rourke), in *Combinatorial and Computational Geometry*, J. E. Goodman, J. Pach, and E. Welzl, eds., Mathematical Sciences Research Institute Publications 52, pages 167–211, Aug. 2005, Cambridge University Press.
243. "Facet Ordering and Crease Assignment in Uniaxial Bases" (joint work with Robert J. Lang), in *Origami^4: Proceedings of the 4th International Meeting of Origami Science, Math, and Education*, pages 189–205, Pasadena, CA, Sept. 2006, A K Peters.
244. "Folding Paper Shopping Bags" (joint work with Devin J. Balkcom, Martin L. Demaine, John A. Ochsendorf, and Zhong You), in *Origami^4: Proceedings of the 4th International Meeting of Origami Science, Math, and Education*, pages 315–334, Pasadena, CA, Sept. 2006, A K Peters.
245. "Sliding-Coin Puzzles" (joint work with Martin L. Demaine), in *Tribute to a Mathemagician*, pages 63–72, 2004, A K Peters.
246. "Fold-and-Cut Magic" (joint work with Martin L. Demaine), in *Tribute to a Mathemagician*, pages 23–30, 2004, A K Peters.
247. "Vertex-Unfolding of Simplicial Manifolds" (joint work with David Eppstein, Jeff Erickson, George W. Hart, and Joseph O'Rourke), in *Discrete Geometry: In Honor of W. Kuperberg's 60th Birthday*, pages 215–228, 2003, Marcer Dekker Inc..
248. "Infinitesimally Locked Self-Touching Linkages with Applications to Locked Trees" (joint work with Robert Connelly and Günter Rote), in *Physical Knots: Knotting, Linking, and Folding of Geometric Objects in* $\mathbb{R}^3$, J. Calvo, K. Millett, and E. Rawdon, eds., pages 287–311, 2002, American Mathematical Society. Collection of papers from the Special Session on Physical Knotting and Unknotting at the AMS Spring Western Section Meeting, Las Vegas, Nevada, April 21–22, 2001.
249. "Cache-Oblivious Algorithms and Data Structures", in *Lecture Notes from the EEF Summer School on Massive Data Sets*, BRICS, Denmark, June–July 2002.
250. "The Complexity of Clickomania" (joint work with Therese C. Biedl, Martin L. Demaine, Rudolf Fleischer, Lars Jacobsen, and J. Ian Munro), in *More Games of No Chance*, R. J. Nowakowski, ed., pages 389–404, 2002, Cambridge University Press. Collection of papers from the MSRI Combinatorial Game Theory Research Workshop, Berkeley, California, July 24–28, 2000.
251. "Phutball Endgames are Hard" (joint work with Martin L. Demaine and David Eppstein), in *More Games of No Chance*, R. J. Nowakowski, ed., pages 351–360, 2002, Cambridge University Press. Collection of papers from the MSRI Combinatorial Game Theory Research Workshop, Berkeley, California, July 24–28, 2000.
252. "Coin-Moving Puzzles" (joint work with Martin L. Demaine and Helena A. Verrill), in *More Games of No Chance*, R. J. Nowakowski, ed., pages 405–431, 2002, Cambridge University Press. Collection of papers from the MSRI Combinatorial Game Theory Research Workshop, Berkeley, California, July 24–28, 2000.

Refereed Conference Publications

Conference papers that have been accepted as journal articles or book chapters are only listed above (so each paper is listed once).

253. "Graph Threading" (joint work with Yael Kirkpatrick and Rebecca Lin), in *Proceedings of the 15th Conference on Innovations in Theoretical Computer Science*, LIPIcs, 38:1–38:18, Berkeley, CA, 2024.
254. "Complexity of Reconfiguration in Surface Chemical Reaction Networks" (joint work with Robert M. Alaniz, Josh Brunner, Michael Coulombe, Jenny Diomidova, Timothy Gomez, Elise Grizzell, Ryan Knobel, Jayson Lynch, Andrew Rodriguez, Robert Schweller, and Tim Wylie), in *Proceedings of the 29th International Conference on DNA Computing and Molecular Programming*, LIPIcs, 10:1–10:18, Sept. 2023.

255. "2.5D signage from sheet material with orthogonal cuts and folds" (joint work with Martin L. Demaine, Satyan L. Devadoss, Perla Myers, and Alfonso Parra Rubio), in *Proceedings of the ASME 2023 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, Boston, MA, Aug. 2023.
256. "Kirigami corrugations: strong, modular, and programmable plate lattice" (joint work with Alfonso Parra Rubio, Klara Mundilova, David Preiss, and Neil Gershenfeld), in *Proceedings of the ASME 2023 International Design Engineering Technical Conferences and Computers and Information in Engineering Conference*, Boston, MA, Aug. 2023.
257. "Algorithmic Layout of Characters in Perspective" (joint work with Mariel Bass and Martin L. Demaine), in *Proceedings of 26th Annual Conference of BRIDGES: Mathematics, Art, Music, Architecture, Culture*, July 2023.
258. "Curved-Crease Origami Spirals Constructed from Reflected Cones" (joint work with Klara Mundilova, Robert Lang, and Tomohiro Tachi), in *Proceedings of 26th Annual Conference of BRIDGES: Mathematics, Art, Music, Architecture, Culture*, July 2023.
259. "Complexity of Motion Planning of Arbitrarily Many Robots: Gadgets, Petri Nets, and Counter Machines" (joint work with Joshua Ani, Michael Coulombe, Yevhenii Diomidov, Timothy Gomez, Dylan Hendrickson, and Jayson Lynch), in *Proceedings of the 2nd Symposium on Algorithmic Foundations of Dynamic Networks*, D. Doty and P. G. Spirakis, eds., LIPIcs 257, 5:1–5:21, June 2023.
260. "Lower Bounds on Retroactive Data Structures" (joint work with Lily Chung, Dylan Hendrickson, and Jayson Lynch), in *Proceedings of the 33rd International Symposium on Algorithms and Computation*, LIPIcs, 32:1–32:13, Seoul, Korea, Dec. 2022.
261. "Hardness of Token Swapping on Trees" (joint work with Oswin Aichholzer, Matias Korman, Anna Lubiw, Jayson Lynch, Zuzana Masarova, Mikhail Rudoy, Virginia Vassilevska Williams, and Nicole Wein), in *Proceedings of the 30th Annual European Symposium on Algorithms*, LIPIcs, 33:1–33:15, Potsdam, Germany, Sept. 2022.
262. "PSPACE-Completeness of Reversible Deterministic Systems" (joint work with Robert A. Hearn, Dylan Hendrickson, and Jayson Lynch), in *Proceedings of the 9th Conference on Machines, Computations and Universality*, pages 91–108, Debrecen, Hungary, Aug.–Sept. 2022.
263. "Flat Folding an Unassigned Single-Vertex Complex (Combinatorially Embedded Planar Graph with Specified Edge Lengths) without Flat Angles" (joint work with Lily Chung, Dylan Hendrickson, and Victor Luo), in *Proceedings of the 38th International Symposium on Computational Geometry*, 29:1–29:17, Berlin, Germany, June 2022.
264. "Pushing Blocks via Checkable Gadgets: PSPACE-completeness of Push-1F and Block/Box Dude" (joint work with Joshua Ani, Lily Chung, Yevhenii Diomidov, Dylan Hendrickson, and Jayson Lynch), in *Proceedings of the 11th International Conference on Fun with Algorithms*, 2:1–2:30, Favignana, Italy, May–June 2022.
265. "Rolling Polyhedra on Tessellations" (joint work with Akira Baes, Martin L. Demaine, Elizabeth Hartung, Stefan Langerman, Joseph O'Rourke, Ryuhei Uehara, Yushi Uno, and Aaron Williams), in *Proceedings of the 11th International Conference on Fun with Algorithms*, 5:1–5:16, Favignana, Italy, May–June 2022.
266. "Multidimensional Scaling: Approximation and Complexity" (joint work with Adam Hesterberg, Frederic Koehler, Jayson Lynch, and John Urschel), in *Proceedings of the 38th International Conference on Machine Learning*, M. Meila and T. Zhang, eds., Proceedings of Machine Learning Research 139, pages 2568–2578, July 2021.
267. "More than Words: Fonts as Generative Art" (joint work with Martin L. Demaine), in *Proceedings of the 24th Generative Art Conference*, pages 369–378, Sardinia, Italy, Dec. 2021.
268. "Characterizing Universal Reconfigurability of Modular Pivoting Robots" (joint work with Hugo A. Akitaya, Andrei Gonczi, Dylan H. Hendrickson, Adam Hesterberg, Matias Korman, Oliver Korten, Jayson Lynch, Irene Parada, and Vera Sacristán), in *Proceedings of the 37th International Symposium on Computational Geometry*, K. Buchin and Ċ. de Verdière, eds., LIPIcs, 10:1–10:20, 2021.
269. "Scalable Equilibrium Computation in Multi-agent Influence Games on Networks" (joint work with Fotini Christia, Michael Curry, Constantinos Daskalakis, John P. Dickerson, MohammadTaghi Hajiaghayi, Adam Hesterberg, Marina Knittel, and Aidan Milliff), in *Proceedings of the 35th AAAI*

Conference on Artificial Intelligence, pages 5277–5285, Feb. 2021.

270. "Complexity of Retrograde and Helpmate Chess Problems: Even Cooperative Chess is Hard" (joint work with Josh Brunner, Dylan Hendrickson, and Julian Wellman), in *Proceedings of the the 31st International Symposium on Algorithms and Computation*, 33:1–33:14, Hong Kong, Dec. 2020.
271. "Recursed Is Not Recursive: A Jarring Result" (joint work with Justin Kopinsky and Jayson Lynch), in *Proceedings of the the 31st International Symposium on Algorithms and Computation*, 35:1–35:15, Hong Kong, Dec. 2020.
272. "Arithmetic Expression Construction" (joint work with Leo Alcock, Sualeh Asif, Jeffrey Bosboom, Josh Brunner, Charlotte Chen, Rogers Epstein, Adam Hesterberg, Lior Hirschfeld, William Hu, Jayson Lynch, Sarah Scheffler, and Lillian Zhang), in *Proceedings of the the 31st International Symposium on Algorithms and Computation*, 41:1–41:15, Hong Kong, Dec. 2020.
273. "Tatamibari is NP-complete" (joint work with Aviv Adler, Jeffrey Bosboom, Martin L. Demaine, Quanquan C. Liu, and Jayson Lynch), in *Proceedings of the 10th International Conference on Fun with Algorithms*, 1:1–1:24, La Maddalena, Italy, Sept. 2020.
274. "Walking through Doors is Hard, even without Staircases: Proving PSPACE-hardness via Planar Assemblies of Door Gadgets" (joint work with Joshua Ani, Jeffrey Bosboom, Yevhenii Diomidov, Dylan Hendrickson, and Jayson Lynch), in *Proceedings of the 10th International Conference on Fun with Algorithms*, 3:1–3:23, La Maddalena, Italy, Sept. 2020.
275. "1×1 Rush Hour with Fixed Blocks is PSPACE-complete" (joint work with Josh Brunner, Lily Chung, Dylan Hendrickson, Adam Hesterberg, Adam Suhl, and Avi Zeff), in *Proceedings of the 10th International Conference on Fun with Algorithms*, 7:1–7:14, La Maddalena, Italy, Sept. 2020.
276. "Design of Circular-Arc Curved Creases of Constant Fold Angle" (joint work with Martin L. Demaine and Klara Mundilova), in *Proceedings of 23rd Annual Conference of BRIDGES: Mathematics, Art, Music, Architecture, Culture*, C. Yackel, R. Bosch, E. Torrence, and K. Fenyvesi, eds., pages 129–136, Aug. 2020.
277. "Finding Closed Quasigeodesics on Convex Polyhedra" (joint work with Adam C. Hesterberg and Jason S. Ku), in *Proceedings of the 36th International Symposium on Computational Geometry*, 33:1–33:13, June 2020.
278. "Toward a General Theory of Motion Planning Complexity: Characterizing Which Gadgets Make Games Hard" (joint work with Dylan Hendrickson and Jayson Lynch), in *Proceedings of the 11th Conference on Innovations in Theoretical Computer Science*, 62:1–62:42, Seattle, WA, Jan. 2020.
279. "Structural Rounding: Approximation Algorithms for Graphs Near an Algorithmically Tractable Class" (joint work with Timothy D. Goodrich, Kyle Kloster, Brian Lavallee, Quanquan C. Liu, Blair D. Sullivan, Ali Vakilian, and Andrew van der Poel), in *Proceedings of the 27th Annual European Symposium on Algorithms*, M. A. Bender, O. Svensson, and G. Herman, eds., LIPIcs 144, 37:1–37:15, Munich, Germany, Sept. 2019.
280. "Simulation of Programmable Matter Systems Using Active Tile-Based Self-Assembly" (joint work with John Calvin Alumbaugh, Joshua J. Daymude, Matthew J. Patitz, and Andréa W. Richa), in *Proceedings of the 25th International Conference on DNA Computing and Molecular Programming*, C. Thachuk and Y. Liu, eds., Lecture Notes in Computer Science 11648, pages 140–158, Seattle, WA, Aug. 2019.
281. "Reconfiguring Undirected Paths" (joint work with David Eppstein, Adam Hesterberg, Kshitij Jain, Anna Lubiw, Ryuhei Uehara, and Yushi Uno), in *Proceedings of the 17th International Symposium on Algorithms and Data Structures*, pages 353–365, Aug. 2019.
282. "Impossible Folding Font" (joint work with Martin L. Demaine, Tomoko Taniguchi, and Ryuhei Uehara), in *Proceedings of 22nd Annual Conference of BRIDGES: Mathematics, Music, Art, Architecture, Culture*, pages 51–58, Linz, Austria, July 2019.
283. "Belga B-Trees" (joint work with John Iacono, Grigorios Koumoutsos, and Stefan Langerman), in *Proceedings of the 14th International Computer Science Symposium in Russia*, R. van Bevern and G. Kucherov, eds., Lecture Notes in Computer Science 11532, pages 93–105, Novosibirsk, Russia, July 2019.
284. "Know When to Fold 'Em: Self-assembly of Shapes by Folding in Oritatami" (joint work with Jacob Hendricks, Meagan Olsen, Matthew J. Patitz, Trent A. Rogers, Nicolas Schabanel, Shinnosuke Seki,

and Hadley Thomas), in *Proceedings of the 24th International Conference on DNA Computing and Molecular Programming*, Jinan, China, Oct. 2018.

285. "Red-Blue Pebble Game: Complexity of Computing the Trade-Off between Cache Size and Memory Transfers" (joint work with Quanquan C. Liu), in *Proceedings of the 30th on Symposium on Parallelism in Algorithms and Architectures*, pages 195–204, Vienna, Austria, July 2018.
286. "Tree-Residue Vertex-Breaking: a new tool for proving hardness" (joint work with Mikhail Rudoy), in *Proceedings of the 20th Scandinavian Symposium and Workshops on Algorithm Theory*, 32:1–32:14, Malmö, Sweden, June 2018.
287. "Nearly Optimal Separation Between Partially And Fully Retroactive Data Structures" (joint work with Lijie Chen, Yuzhou Gu, Virginia Vassilevska Williams, Yinzhan Xu, and Yuancheng Yu), in *Proceedings of the 20th Scandinavian Symposium and Workshops on Algorithm Theory*, 33:1–33:12, Malmö, Sweden, June 2018.
288. "Computational Complexity of Motion Planning of a Robot through Simple Gadgets" (joint work with Isaac Grosof, Jayson Lynch, and Mikhail Rudoy), in *Proceedings of the 9th International Conference on Fun with Algorithms*, 18:1–18:21, La Maddalena, Italy, June 2018.
289. "The Computational Complexity of Portal and Other 3D Video Games" (joint work with Joshua Lockhart and Jayson Lynch), in *Proceedings of the 9th International Conference on Fun with Algorithms*, 19:1–19:22, La Maddalena, Italy, June 2018.
290. "Computational Complexity of Generalized Push Fight" (joint work with Jeffrey Bosboom and Mikhail Rudoy), in *Proceedings of the 9th International Conference on Fun with Algorithms*, 11:1–11:21, La Maddalena, Italy, June 2018.
291. "Coordinated Motion Planning: Reconfiguring a Swarm of Labeled Robots with Bounded Stretch" (joint work with Sándor P. Fekete, Phillip Keldenich, Christian Scheffer, and Henk Meijer), in *Proceedings of the 34th International Symposium on Computational Geometry*, 29:1–29:15, June 2018.
292. "Solving the Rubik's Cube Optimally is NP-complete" (joint work with Sarah Eisenstat and Mikhail Rudoy), in *Proceedings of the 35th International Symposium on Theoretical Aspects of Computer Science*, Caen, France, Feb.–Mar. 2018.
293. "Fine-grained I/O Complexity via Reductions: New Lower Bounds, Faster Algorithms, and a Time Hierarchy" (joint work with Andrea Lincoln, Quanquan C. Liu, Jayson Lynch, and Virginia Vassilevska Williams), in *Proceedings of the 9th Innovations in Theoretical Computer Science Conference*, 34:1–34:23, Cambridge, MA, Jan. 2018.
294. "Inapproximability of the Standard Pebble Game and Hard to Pebble Graphs" (joint work with Quanquan C. Liu), in *Proceedings of the 16th International Symposium on Algorithms and Data Structures*, pages 313–324, July–Aug. 2017.
295. "Common Development of Prisms, Anti-Prisms, Tetrahedra, and Wedges" (joint work with Amartya Shankha Biswas), in *Proceedings of the 29th Canadian Conference on Computational Geometry*, to appear, Ottawa, Canada, July 2017.
296. "Origamizer: A Practical Algorithm for Folding Any Polyhedron" (joint work with Tomohiro Tachi), in *Proceedings of the 33rd International Symposium on Computational Geometry*, 34:1–34:15, Brisbane, Australia, July 2017.
297. "Push-Pull Block Puzzles are Hard" (joint work with Isaac Grosof and Jayson Lynch), in *Proceedings of the 10th International Conference on Algorithms and Complexity*, Lecture Notes in Computer Science 10236, pages 177–195, Athens, Greece, May 2017.
298. "Three Colors Suffice: Conflict-Free Coloring of Planar Graphs" (joint work with Zachary Abel, Victor Alvarez, Sándor Fekete, Aman Gour, Adam Hesterberg, Phillip Keldenich, and Christian Scheffer), in *Proceedings of the 28th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 1951–1963, Barcelona, Spain, Jan. 2017.
299. "Universal Shape Replicators via Self-Assembly with Attractive and Repulsive Forces" (joint work with Cameron Chalk, Martin L. Demaine, Eric Martinez, Robert Schweller, Luis Vega, and Tim Wylie), in *Proceedings of the 28th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 225–238, Barcelona, Spain, Jan. 2017.
300. "Zero-Area Reciprocal Diagram of Origami" (joint work with Martin L. Demaine, David A. Huffman, Thomas C. Hull, Duks Koschitz, and Tomohiro Tachi), in *Proceedings of the IASS Annual Symposium*

2016, K. Kawaguchi, M. Ohsaki, and T. Takeuchi, eds., Tokyo, Japan, Sept. 2016.

301. "The Complexity of Hex and the Jordan Curve Theorem" (joint work with Aviv Adler and Constantinos Daskalakis), in *Proceedings of the 43rd International Colloquium on Automata, Languages and Programming*, 24:1–24:14, Rome, Italy, July 2016.
302. "Cache-Adaptive Analysis" (joint work with Michael A. Bender, Roozbeh Ebrahimi, Jeremy T. Fineman, Rob Johnson, Andrea Lincoln, Jayson Lynch, and Samuel McCauley), in *Proceedings of the 28th ACM Symposium on Parallelism in Algorithms and Architectures*, pages 135–144, Pacific Grove, CA, 2016.
303. "Toward an Energy Efficient Language and Compiler for (Partially) Reversible Algorithms" (joint work with Nirvan Tyagi and Jayson Lynch), in *Proceedings of the 8th International Conference on Reversible Computation*, Lecture Notes in Computer Science 9720, pages 121–136, Bologna, Italy, July 2016.
304. "A PTAS for Planar Group Steiner Tree via Spanner Bootstrapping and Prize Collecting" (joint work with MohammadHossein Bateni, MohammadTaghi Hajiaghayi, and Dániel Marx), in *Proceedings of the 48th Annual ACM Symposium on Theory of Computing*, pages 570–583, Cambridge, MA, 2016.
305. "Who Needs Crossings? Hardness of Plane Graph Rigidity" (joint work with Zachary Abel, Martin L. Demaine, Sarah Eisenstat, Jayson Lynch, and Tao B. Schardl), in *Proceedings of the 32nd International Symposium on Computational Geometry*, 3:1–3:15, Boston, MA, June 2016.
306. "Super Mario Bros. is Harder/Easier than We Thought" (joint work with Giovanni Viglietta and Aaron Williams), in *Proceedings of the 8th International Conference on Fun with Algorithms*, 13:1–13:14, La Maddalena, Italy, June 2016.
307. "Energy-Efficient Algorithms" (joint work with Jayson Lynch, Geronimo J. Mirano, and Nirvan Tyagi), in *Proceedings of the 7th Annual ACM Conference on Innovations in Theoretical Computer Science*, pages 321–332, Cambridge, MA, Jan. 2016.
308. "Dissection with the Fewest Pieces is Hard, Even to Approximate" (joint work with Jeffrey Bosboom, Martin L. Demaine, Jayson Lynch, Pasin Manurangsi, Mikhail Rudoy, and Anak Yodpinyanee), in *Revised Papers from the 18th Japan Conference on Discrete and Computational Geometry and Graphs*, Lecture Notes in Computer Science 9943, pages 37–48, Kyoto, Japan, Sept. 2015.
309. "Box pleating is hard" (joint work with Hugo A. Akitaya, Kenneth C. Cheung, Takashi Horiyama, Thomas C. Hull, Jason S. Ku, Tomohiro Tachi, and Ryuhei Uehara), in *Revised Papers from the 18th Japan Conference on Discrete and Computational Geometry and Graphs*, Lecture Notes in Computer Science 9943, pages 167–179, Kyoto, Japan, Sept. 2015.
310. "Mario Kart is Hard" (joint work with Jeffrey Bosboom, Adam Hesterberg, Jayson Lynch, and Erik Waingarten), in *Revised Papers from the 18th Japan Conference on Discrete and Computational Geometry and Graphs*, Lecture Notes in Computer Science 9943, pages 49–59, Kyoto, Japan, Sept. 2015.
311. "Bust-A-Move/Puzzle Bobble is NP-complete" (joint work with Stefan Langerman), in *Revised Papers from the 18th Japan Conference on Discrete and Computational Geometry and Graphs*, Lecture Notes in Computer Science 9943, pages 94–104, Kyoto, Japan, Sept. 2015.
312. "Single-player and two-player Buttons & Scissors games" (joint work with Kyle Burke, Robert Hearn, Adam Hesterberg, Michael Hoffmann, Hiro Ito, Irina Kostitsyna, Maarten Löffler, Yushi Uno, Christiane Schmidt, Ryuhei Uehara, and Aaron Williams), in *Revised Papers from the 18th Japan Conference on Discrete and Computational Geometry and Graphs*, Lecture Notes in Computer Science 9943, pages 60–72, Kyoto, Japan, Sept. 2015.
313. "Continuous flattening of orthogonal polyhedra" (joint work with Martin L. Demaine, Jin-Ichi Itoh, and Chie Nara), in *Revised Papers from the 18th Japan Conference on Discrete and Computational Geometry and Graphs*, Lecture Notes in Computer Science 9943, pages 85–93, Kyoto, Japan, Sept. 2015.
314. "Cache-Oblivious Iterated Predecessor Queries via Range Coalescing" (joint work with Vineet Gopal and William Hasenplaugh), in *Proceedings of the 14th International Symposium on Algorithms and Data Structures*, pages 249–262, Victoria, Canada, Aug. 2015.
315. "Polylogarithmic Fully Retroactive Priority Queues via Hierarchical Checkpointing" (joint work with Tim Kaler, Quanquan Liu, Aaron Sidford, and Adam Yedidia), in *Proceedings of the 14th International Symposium on Algorithms and Data Structures*, pages 263–275, Victoria, Canada, Aug. 2015.
316. "A Dissimilarity Measure for Comparing Origami Crease Patterns" (joint work with Seung Man Oh,

Godfried T. Toussaint, and Martin L. Demaine), in *Proceedings of the 4th International Conference on Pattern Recognition Applications and Methods*, volume 1, pages 386–393, Lisbon, Portugal, Jan. 2015.

317. "On Streaming and Communication Complexity of the Set Cover Problem" (joint work with Piotr Indyk, Sepideh Mahabadi, and Ali Vakilian), in *Proceedings of the 28th International Symposium on Distributed Computing*, pages 484–498, Austin, TX, Oct. 2014.
318. "One Tile to Rule Them All: Simulating Any Tile Assembly System with a Single Universal Tile" (joint work with Martin L. Demaine, Sándor P. Fekete, Matthew J. Patitz, Robert T. Schweller, Andrew Winslow, and Damien Woods), in *Proceedings of the 41st International Colloquium on Automata, Languages and Programming*, J. Esparza, P. Fraigniaud, T. Husfeldt, and E. Koutsoupias, eds., Lecture Notes in Computer Science 8572, pages 368–379, 2014.
319. "Playing Dominoes is Hard, Except by Yourself" (joint work with Fermi Ma and Erik Waingarten), in *Proceedings of the 7th International Conference on Fun with Algorithms*, pages 137–146, Lipari Island, Italy, July 2014.
320. "Continuously Flattening Polyhedra Using Straight Skeletons" (joint work with Zachary Abel, Martin L. Demaine, Jin-Ichi Itoh, Anna Lubiw, Chie Nara, and Joseph O'Rourke), in *Proceedings of the 30th Annual Symposium on Computational Geometry*, pages 396–405, Kyoto, Japan, June 2014.
321. "How to Influence People with Partial Incentives" (joint work with MohammadTaghi Hajiaghayi, Hamid Mahini, David L. Malec, S. Raghavan, Anshul Sawant, and Morteza Zadimoghaddam), in *Proceedings of the 23rd International World Wide Web Conference*, pages 937–948, Seoul, Korea, Apr. 2014.
322. "On Wrapping Spheres and Cubes with Rectangular Paper" (joint work with Alex Cole and Eli Fox-Epstein), in *Revised Papers from the 12th Japan Conference on Discrete and Computational Geometry and Graphs*, Lecture Notes in Computer Science, to appear, Tokyo, Japan, Sept. 2013.
323. "Blame Trees" (joint work with Pavel Panchekha, David Wilson, and Edward Z. Yang), in *Proceedings of the 13th Algorithms and Data Structures Symposium*, Lecture Notes in Computer Science 8037, pages 280–290, London, Canada, Aug. 2013.
324. "Combining Binary Search Trees" (joint work with John Iacono, Stefan Langerman, and Özgür Özkan), in *Proceedings of the 40th International Colloquium on Automata, Languages and Programming*, pages 388–399, Riga, Latvia, July 2013.
325. "Algorithms for Designing Pop-Up Cards" (joint work with Zachary Abel, Martin L. Demaine, Sarah Eisenstat, Anna Lubiw, André Schulz, Diane Souvaine, Giovanni Viglietta, and Andrew Winslow), in *Proceedings of the 30th International Symposium on Theoretical Aspects of Computer Science*, pages 269–280, Kiel, Germany, Feb.–Mar. 2013.
326. "Two Hands Are Better Than One (up to constant factors): Self-Assembly In The 2HAM vs. aTAM" (joint work with Sarah Cannon, Martin L. Demaine, Sarah Eisenstat, Matthew J. Patitz, Robert Schweller, Scott M. Summers, and Andrew Winslow), in *Proceedings of the 30th International Symposium on Theoretical Aspects of Computer Science*, pages 172–184, Kiel, Germany, Feb.–Mar. 2013.
327. "Learning Disjunctions: Near-Optimal Trade-off between Mistakes and "I Don't Know's"" (joint work with Morteza Zadimoghaddam), in *Proceedings of the 24th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 1369–1379, New Orleans, LA, Jan. 2013.
328. "Algorithms for Solving Rubik's Cubes" (joint work with Martin L. Demaine, Sarah Eisenstat, Anna Lubiw, and Andrew Winslow), in *Proceedings of the 19th Annual European Symposium on Algorithms*, pages 689–700, Sept. 2011.
329. "$O(1)$-Approximations for Maximum Movement Problems" (joint work with Piotr Berman and Morteza Zadimoghaddam), in *Proceedings of the 14th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems*, pages 62–74, Princeton, NJ, Aug. 2011.
330. "Lossless Fault-Tolerant Data Structures with Additive Overhead" (joint work with Paul Christiano and Shaunak Kishore), in *Proceedings of the 12th Algorithms and Data Structures Symposium*, pages 243–254, Brooklyn, NY, Aug. 2011.
331. "Flattening Fixed-Angle Chains Is Strongly NP-Hard" (joint work with Sarah Eisenstat), in *Proceedings of the 12th Algorithms and Data Structures Symposium*, pages 314–325, Brooklyn, NY, Aug. 2011.
332. "Remarks on Separating Words" (joint work with Sarah Eisenstat, Jeffrey Shallit, and David A. Wilson), in *Proceedings of the 13th International Workshop on Descriptional Complexity of Formal Sys-*

tems, Lecture Notes in Computer Science 6808, pages 147–157, Giessen, Germany, July 2011.

333. "A generalization of the source unfolding of convex polyhedra" (joint work with Anna Lubiw), in *Revised Papers from the 14th Spanish Meeting on Computational Geometry*, A. Márquez, P. Ramos, and J. Urrutia, eds., Lecture Notes in Computer Science 7579, pages 185–199, Alcalá de Henares, Spain, June 2011.
334. "Meshes preserving minimum feature size" (joint work with Greg Aloupis, Martin L. Demaine, Vida Dujmović, and John Iacono), in *Revised Papers from the 14th Spanish Meeting on Computational Geometry*, A. Márquez, P. Ramos, and J. Urrutia, eds., Lecture Notes in Computer Science 7579, pages 258–273, Alcalá de Henares, Spain, June 2011.
335. "Contraction Decomposition in H-Minor-Free Graphs and Algorithmic Applications" (joint work with MohammadTaghi Hajiaghayi and Ken-ichi Kawarabayashi), in *Proceedings of the 43rd ACM Symposium on Theory of Computing*, pages 441–450, June 2011.
336. "Self-Assembly of Arbitrary Shapes Using RNAse Enzymes: Meeting the Kolmogorov Bound with Small Scale Factor" (joint work with Matthew J. Patitz, Robert T. Schweller, and Scott M. Summers), in *Proceedings of the 28th International Symposium on Theoretical Aspects of Computer Science*, pages 201–212, Dortmund, Germany, Mar. 2011.
337. "Making Polygons by Simple Folds and One Straight Cut" (joint work with Martin L. Demaine, Andrea Hawksley, Hiro Ito, Po-Ru Loh, Shelly Manber, and Omari Stephens), in *Revised Papers from the China-Japan Joint Conference on Computational Geometry, Graphs and Applications*, Lecture Notes in Computer Science, pages 27–43, Dalian, China, Nov. 2010.
338. "Common Unfoldings of Polyominoes and Polycubes" (joint work with Greg Aloupis, Prosenjit K. Bose, Sebastien Collette, Martin L. Demaine, Karim Douieb, Vida Dujmović, John Iacono, Stefan Langerman, and Pat Morin), in *Revised Papers from the China-Japan Joint Conference on Computational Geometry, Graphs and Applications*, Lecture Notes in Computer Science 7033, pages 44–54, Dalian, China, Nov. 2010.
339. "Minimizing the Diameter of a Network using Shortcut Edges" (joint work with Morteza Zadimoghaddam), in *Proceedings of the 12th Scandinavian Symposium and Workshops on Algorithm Theory*, Lecture Notes in Computer Science 6139, pages 420–431, Bergen, Norway, June 2010.
340. "Basic Network Creation Games" (joint work with Noga Alon, MohammadTaghi Hajiaghayi, and Tom Leighton), in *Proceedings of the 22nd ACM Symposium on Parallelism in Algorithms and Architectures*, pages 21–29, Santorini, Greece, June 2010.
341. "Scheduling to Minimize Power Consumption using Submodular Functions" (joint work with Morteza Zadimoghaddam), in *Proceedings of the 22nd ACM Symposium on Parallelism in Algorithms and Architectures*, pages 21–29, Santorini, Greece, June 2010.
342. "Shape Replication Through Self-Assembly and RNase Enzymes" (joint work with Zachary Abel, Nadia Benbernou, Mirela Damian, Martin L. Demaine, Robin Flatland, Scott Kominers, and Robert Schweller), in *Proceedings of the 21st Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 1045–1064, Austin, TX, Jan. 2010.
343. "Cache-Oblivious Dynamic Dictionaries with Optimal Update/Query Tradeoff" (joint work with Gerth Stølting Brodal, Jeremy T. Fineman, John Iacono, Stefan Langerman, and J. Ian Munro), in *Proceedings of the 21st Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 1448–1456, Austin, TX, Jan. 2010.
344. "Decomposition, Approximation, and Coloring of Odd-Minor-Free Graphs" (joint work with MohammadTaghi Hajiaghayi and Ken-ichi Kawarabayashi), in *Proceedings of the 21st Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 329–344, Austin, TX, Jan. 2010.
345. "Folding a Better Checkerboard" (joint work with Martin L. Demaine, Goran Konjevod, and Robert J. Lang), in *Proceedings of the 20th Annual International Symposium on Algorithms and Computation*, Lecture Notes in Computer Science 5878, pages 1074–1083, Hawaii, USA, Dec. 2009.
346. "A Distributed Boundary Detection Algorithm for Multi-Robot Systems" (joint work with James McLurkin), in *Proceedings of the 2009 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 4791–4798, St. Louis, MO, Oct. 2009.
347. "Minimal Locked Trees" (joint work with Brad Ballinger, David Charlton, Martin L. Demaine, John Iacono, Ching-Hao Liu, and Sheung-Hung Poon), in *Proceedings of the 11th Algorithms and Data*

Structures Symposium, Lecture Notes in Computer Science 5664, pages 61–73, Banff, Canada, Aug. 2009.

348. "A pseudopolynomial algorithm for Alexandrov's Theorem" (joint work with Daniel Kane and Gregory N. Price), in *Proceedings of the 11th Algorithms and Data Structures Symposium*, Lecture Notes in Computer Science 5664, pages 435–446, Banff, Canada, Aug. 2009.
349. "Approximation Algorithms via Structural Results for Apex-Minor-Free Graphs" (joint work with MohammadTaghi Hajiaghayi and Ken-ichi Kawarabayashi), in *Proceedings of the 36th International Colloquium on Automata, Languages and Programming*, Lecture Notes in Computer Science 5555, pages 316–327, Rhodes, Greece, July 2009.
350. "Node-Weighted Steiner Tree and Group Steiner Tree in Planar Graphs" (joint work with MohammadTaghi Hajiaghayi and Philip Klein), in *Proceedings of the 36th International Colloquium on Automata, Languages and Programming*, Lecture Notes in Computer Science 5555, pages 328–340, Rhodes, Greece, July 2009.
351. "The Geometry of Binary Search Trees" (joint work with Dion Harmon, John Iacono, Daniel Kane, and Mihai Pătraşcu), in *Proceedings of the 20th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 496–505, New York, NY, Jan. 2009.
352. "Additive Approximation Algorithms for List-Coloring Minor-Closed Class of Graphs" (joint work with Ken-ichi Kawarabayashi and MohammadTaghi Hajiaghayi), in *Proceedings of the 20th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 1166–1175, New York, NY, Jan. 2009.
353. "Realistic Reconfiguration of Crystalline (and Telecube) Robots" (joint work with Greg Aloupis, Sébastien Collette, Mirela Damian, Dania El-Khechen, Robin Flatland, Stefan Langerman, Joseph O'Rourke, Val Pinciu, Suneeta Ramaswami, Vera Sacristán, and Stefanie Wuhrer), in *Proceedings of the 8th International Workshop on the Algorithmic Foundations of Robotics*, Springer Tracts in Advanced Robotics 57, pages 433–447, Guanajuato, México, Dec. 2008.
354. "Reconfiguration of Cube-Style Modular Robots Using $O(\log n)$ Parallel Moves" (joint work with Greg Aloupis, Sébastien Collette, Stefan Langerman, Vera Sacristán, and Stefanie Wuhrer), in *Proceedings of the 19th Annual International Symposium on Algorithms and Computation*, pages 342–353, Gold Coast, Australia, Dec. 2008.
355. "Ordinal Embedding: Approximation Algorithms and Dimensionality Reduction" (joint work with Mihai Bădoiu, MohammadTaghi Hajiaghayi, Anastasios Sidiropoulos, and Morteza Zadimoghaddam), in *Proceedings of the 11th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems*, pages 21–34, Boston, MA, Aug. 2008.
356. "Confluently Persistent Tries for Efficient Version Control" (joint work with Stefan Langerman and Eric Price), in *Proceedings of the 11th Scandinavian Workshop on Algorithm Theory*, Lecture Notes in Computer Science 5124, pages 160–172, Gothenburg, Sweden, July 2008. Invited to special issue of *Algorithmica*.
357. "Constraint Logic: A Uniform Framework for Modeling Computation as Games" (joint work with Robert A. Hearn), in *Proceedings of the 23rd Annual IEEE Conference on Computational Complexity*, pages 149–162, College Park, MD, June 2008.
358. "Moving-Baseline Localization" (joint work with Jun-geun Park and Seth J. Teller), in *Proceedings of the 7th International Conference on Information Processing in Sensor Networks*, pages 15–26, St. Louis, MO, Apr. 2008.
359. "The Stackelberg Minimum Spanning Tree Game" (joint work with Jean Cardinal, Samuel Fiorini, Gwenaël Joret, Stefan Langerman, Ilan Newman, and Oren Weimann), in *Proceedings of the 10th Workshop on Algorithms and Data Structures*, Lecture Notes in Computer Science 4619, pages 64–76, Halifax, Canada, Aug. 2007.
360. "A Pseudopolynomial Time $O(\log n)$-Approximation Algorithm for Art Gallery Problems" (joint work with Ajay Deshpande, Taejung Kim, and Sanjay E. Sarma), in *Proceedings of the 10th Workshop on Algorithms and Data Structures*, Lecture Notes in Computer Science 4619, pages 163–174, Halifax, Canada, Aug. 2007.
361. "Revising Quorum Systems for Energy Conservation in Sensor Networks" (joint work with Daniela Tulone), in *Proceedings of the International Conference on Wireless Algorithms, Systems and Applications*, pages 147–157, Chicago, IL, Aug. 2007.

362. "An Optimal Decomposition Algorithm for Tree Edit Distance" (joint work with Shay Mozes, Benjamin Rossman, and Oren Weimann), in *Proceedings of the 34th International Colloquium on Automata, Languages and Programming*, pages 146–157, Wroclaw, Poland, July 2007. Invited to special issue of *Theoretical Computer Science*.
363. "Deflating The Pentagon" (joint work with Martin L. Demaine, Thomas Fevens, Antonio Mesa, Michael Soss, Diane L. Souvaine, Perouz Taslakian, and Godfried Toussaint), in *Revised Papers from the Kyoto International Conference on Computational Geometry and Graph Theory*, Lecture Notes in Computer Science 4535, pages 56–67, Kyoto, Japan, June 2007.
364. "Tight Bounds for Dynamic Convex Hull Queries (Again)" (joint work with Mihai Pătraşcu), in *Proceedings of the 23rd Annual ACM Symposium on Computational Geometry*, pages 354–363, Gyeongju, South Korea, June 2007.
365. "Algorithmic Graph Minor Theory: Improved Grid Minor Bounds and Wagner's Contraction" (joint work with MohammadTaghi Hajiaghayi and Ken-ichi Kawarabayashi), in *Proceedings of the 17th Annual International Symposium on Algorithms and Computation*, Lecture Notes in Computer Science 4288, pages 3–15, Calcutta, India, Dec. 2006. Awarded Best Paper. Invited to special issue of *Algorithmica*.
366. "De Dictionariis Dynamicis Pauco Spatio Utentibus (*lat.* On Dynamic Dictionaries Using Little Space)" (joint work with Friedhelm Meyer auf der Heide, Rasmus Pagh, and Mihai Pătraşcu), in *Proceedings of the 7th Latin American Symposium on Theoretical Informatics*, pages 349–361, Valdivia, Chile, Mar. 2006.
367. "Lower Bounds for Asymmetric Communication Channels and Distributed Source Coding" (joint work with Micah Adler, Nicholas J. A. Harvey, and Mihai Pătraşcu), in *Proceedings of the 17th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 251–260, Miami, FL, Jan. 2006.
368. "Kinematics and Dynamics of Nanostructured Origami" (joint work with Paul Stellman, Will Arora, Satoshi Takahashi, and George Barbastathis), in *Proceedings of the ASME International Mechanical Engineering Congress and Exposition*, pages 541–548, Orlando, FL, Nov. 2005.
369. "Design and Control of Nanostructured Origami" (joint work with Paul Stellman, Will Arora, Satoshi Takahashi, and George Barbastathis), in *Proceedings of the 3rd International Symposium on Nanomanufacturing*, pages 4, Orlando, FL, Nov. 2005.
370. "PersiFS: A Versioned File System with an Efficient Representation" (joint work with Dan R. K. Ports and Austin T. Clements), in *Proceedings of the 20th ACM Symposium on Operating Systems Principles*, Brighton, United Kingdom, Oct. 2005.
371. "Algorithmic Graph Minor Theory: Decomposition, Approximation, and Coloring" (joint work with MohammadTaghi Hajiaghayi and Ken-ichi Kawarabayashi), in *Proceedings of the 46th Annual IEEE Symposium on Foundations of Computer Science*, pages 637–646, Pittsburgh, PA, Oct. 2005.
372. "Optimizing a 2D Function Satisfying Unimodality Properties" (joint work with Stefan Langerman), in *Proceedings of the 13th Annual European Symposium on Algorithms*, Lecture Notes in Computer Science 3669, pages 887–898, Mallorca, Spain, Oct. 2005.
373. "Hinged Dissection of Polypolyhedra" (joint work with Martin L. Demaine, Jeffrey F. Lindy, and Diane L. Souvaine), in *Proceedings of the 9th Workshop on Algorithms and Data Structures*, Lecture Notes in Computer Science 3608, pages 205–217, Waterloo, Canada, Aug. 2005.
374. "Deploying Sensor Networks with Guaranteed Capacity and Fault Tolerance" (joint work with Jonathan L. Bredin, MohammadTaghi Hajiaghayi, and Daniela Rus), in *Proceedings of the 6th ACM International Symposium on Mobile Ad Hoc Networking and Computing*, pages 309–319, Urbana-Champaign, IL, May 2005.
375. "Mobile-Assisted Localization in Wireless Sensor Networks" (joint work with Nissanka B. Priyantha, Hari Balakrishnan, and Seth Teller), in *Proceedings of the 24th Annual Joint Conference of the IEEE Communications Society on Computer Communications*, volume 1, pages 172–183, Miami, FL, Mar. 2005.
376. "Bidimensionality: New Connections between FPT Algorithms and PTASs" (joint work with MohammadTaghi Hajiaghayi), in *Proceedings of the 16th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 590–601, Vancouver, Canada, Jan. 2005.
377. "EpiChord: Parallelizing the Chord Lookup Algorithm with Reactive Routing State Management"

(joint work with Ben Leong and Barbara Liskov), in *Proceedings of the IEEE International Conference on Networks*, volume 1, pages 270–276, Singapore, Nov. 2004. Awarded Best Paper.

378. "Fast Algorithms for Hard Graph Problems: Bidimensionality, Minors, and Local Treewidth" (joint work with MohammadTaghi Hajiaghayi), in *Proceedings of the 12th International Symposium on Graph Drawing*, Lecture Notes in Computer Science 3383, pages 517–533, Harlem, NY, Sept.–Oct. 2004.
379. "An Energy-Driven Approach to Linkage Unfolding" (joint work with Jason Cantarella, Hayley Iben, and James O'Brien), in *Proceedings of the 20th Annual ACM Symposium on Computational Geometry*, pages 134–143, Brooklyn, NY, June 2004. Invited to special issue of *Discrete & Computational Geometry*.
380. "Finding a Divisible Pair and a Good Wooden Fence" (joint work with Stelian Ciurea, Corina E. Pătraşcu, and Mihai Pătraşcu), in *Proceedings of the 3rd International Conference on Fun with Algorithms*, pages 206–219, Isola d'Elba, Italy, May 2004.
381. "PushPush-k is PSPACE-Complete" (joint work with Michael Hoffmann and Markus Holzer), in *Proceedings of the 3rd International Conference on Fun with Algorithms*, pages 159–170, Isola d'Elba, Italy, May 2004.
382. "Equivalence of Local Treewidth and Linear Local Treewidth and its Algorithmic Applications" (joint work with MohammadTaghi Hajiaghayi), in *Proceedings of the 15th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 833–842, New Orleans, LA, Jan. 2004.
383. "Interpolation Search for Non-Independent Data" (joint work with Thouis Jones and Mihai Pătraşcu), in *Proceedings of the 15th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 522–523, New Orleans, LA, Jan. 2004.
384. "Anchor-Free Distributed Localization in Sensor Networks" (joint work with Nissanka B. Priyantha, Hari Balakrishnan, and Seth Teller), in *Proceedings of the 1st International Conference on Embedded Networked Sensor Systems*, pages 340–341, Los Angeles, USA, Nov. 2003.
385. "Identifying Frequent Items in Sliding Windows over On-Line Packet Streams" (joint work with Lukasz Golab, David DeHaan, Alejandro López-Ortiz, and J. Ian Munro), in *Proceedings of the ACM SIGCOMM Internet Measurement Conference*, pages 173–178, Miami, FL, Oct. 2003.
386. "Optimal Dynamic Video-On-Demand using Adaptive Broadcasting" (joint work with Therese Biedl, Alexander Golynski, Joseph D. Horton, Alejandro López-Ortiz, Guillaume Poirier, and Claude-Guy Quimper), in *Proceedings of the 11th Annual European Symposium on Algorithms*, Lecture Notes in Computer Science 2832, pages 90–101, Budapest, Hungary, Sept. 2003.
387. "Flat-State Connectivity of Linkages under Dihedral Motions" (joint work with Greg Aloupis, Vida Dujmović, Jeff Erickson, Stefan Langerman, Henk Meijer, Joseph O'Rourke, Mark Overmars, Michael Soss, Ileana Streinu, and Godfried Toussaint), in *Proceedings of the 13th Annual International Symposium on Algorithms and Computation*, Lecture Notes in Computer Science 2518, pages 369–380, Vancouver, Canada, Nov. 2002.
388. "Frequency Estimation of Internet Packet Streams with Limited Space" (joint work with Alejandro López-Ortiz and J. Ian Munro), in *Proceedings of the 10th Annual European Symposium on Algorithms*, Lecture Notes in Computer Science 2461, pages 348–360, Rome, Italy, Sept. 2002.
389. "Two Simplified Algorithms for Maintaining Order in a List" (joint work with Michael A. Bender, Richard Cole, Martin Farach-Colton, and Jack Zito), in *Proceedings of the 10th Annual European Symposium on Algorithms*, Lecture Notes in Computer Science 2461, pages 152–164, Rome, Italy, Sept. 2002.
390. "Scanning and Traversing: Maintaining Data for Traversals in a Memory Hierarchy" (joint work with Michael A. Bender, Richard Cole, and Martin Farach-Colton), in *Proceedings of the 10th Annual European Symposium on Algorithms*, Lecture Notes in Computer Science 2461, pages 139–151, Rome, Italy, Sept. 2002.
391. "Efficient Tree Layout in a Multilevel Memory Hierarchy" (joint work with Michael A. Bender and Martin Farach-Colton), in *Proceedings of the 10th Annual European Symposium on Algorithms*, Lecture Notes in Computer Science 2461, pages 165–173, Rome, Italy, Sept. 2002.
392. "Robot Localization without Depth Perception" (joint work with Alejandro López-Ortiz and J. Ian Munro), in *Proceedings of the 8th Scandinavian Workshop on Algorithm Theory*, Lecture Notes in Computer Science 2368, pages 249–259, Turku, Finland, July 2002.

393. “Interlocked Open Linkages with Few Joints” (joint work with Stefan Langerman, Joseph O’Rourke, and Jack Snoeyink), in *Proceedings of the 18th Annual ACM Symposium on Computational Geometry*, pages 189–198, Barcelona, Spain, June 2002.
394. “Recent Results in Computational Origami” (joint work with Martin L. Demaine), in *Origami^3: Proceedings of the 3rd International Meeting of Origami Science, Math, and Education*, pages 3–16, Monterey, CA, Mar. 2001, A K Peters. Translated into Japanese in a book of selected papers from OSME 2001, Morikita Publishing Co., 2005, 3–16.
395. “A Disk-Packing Algorithm for an Origami Magic Trick” (joint work with Marshall Bern, David Eppstein, and Barry Hayes), in *Origami^3: Proceedings of the 3rd International Meeting of Origami Science, Math, and Education*, pages 17–28, Monterey, CA, Mar. 2001, A K Peters. Translated into Japanese in a book of selected papers from OSME 2001, Morikita Publishing Co., 2005, 17–28.
396. “Experiments on Adaptive Set Intersections for Text Retrieval Systems” (joint work with Alejandro López-Ortiz and J. Ian Munro), in *Proceedings of the 3rd Workshop on Algorithm Engineering and Experiments*, Lecture Notes in Computer Science 2153, pages 91–104, Washington, DC, Jan. 2001.
397. “Folding and Unfolding Linkages, Paper, and Polyhedra”, in *Revised Papers from the Japan Conference on Discrete and Computational Geometry*, Lecture Notes in Computer Science 2098, pages 113–124, Tokyo, Japan, Nov. 2000.
398. “Adaptive Set Intersections, Unions, and Differences” (joint work with Alejandro López-Ortiz and J. Ian Munro), in *Proceedings of the 11th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 743–752, San Francisco, CA, Jan. 2000.
399. “Convexifying Monotone Polygons” (joint work with Therese C. Biedl, Sylvain Lazard, Steven M. Robbins, and Michael A. Soss), in *Proceedings of the 10th Annual International Symposium on Algorithms and Computation*, Lecture Notes in Computer Science 1741, pages 415–424, Chennai, India, Dec. 1999.
400. “Resizable Arrays in Optimal Time and Space” (joint work with Andrej Brodnik, Svante Carlsson, J. Ian Munro, and Robert Sedgewick), in *Proceedings of the 6th International Workshop on Algorithms and Data Structures*, Lecture Notes in Computer Science 1663, pages 37–48, Vancouver, Canada, Aug. 1999.
401. “Polyhedral Sculptures with Hyperbolic Paraboloids” (joint work with Martin L. Demaine and Anna Lubiw), in *Proceedings of the 2nd Annual Conference of BRIDGES: Mathematical Connections in Art, Music, and Science*, pages 91–100, Winfield, KS, July–Aug. 1999.
402. “Folding and One Straight Cut Suffice” (joint work with Martin L. Demaine and Anna Lubiw), in *Proceedings of the 10th Annual ACM-SIAM Symposium on Discrete Algorithms*, pages 891–892, Baltimore, MD, Jan. 1999.
403. “Folding and Cutting Paper” (joint work with Martin L. Demaine and Anna Lubiw), in *Revised Papers from the Japan Conference on Discrete and Computational Geometry*, Lecture Notes in Computer Science 1763, pages 104–117, Tokyo, Japan, Dec. 1998.
404. “Planar Drawings of Origami Polyhedra” (joint work with Martin L. Demaine), in *Proceedings of the 6th Symposium on Graph Drawing*, Lecture Notes in Computer Science 1547, pages 438–440, Montréal, Canada, Aug. 1998.
405. “A Disk-Packing Algorithm for an Origami Magic Trick” (joint work with Marshall Bern, David Eppstein, and Barry Hayes), in *Proceedings of the International Conference on Fun with Algorithms*, pages 32–42, Isola d’Elba, Italy, June 1998.
406. “Protocols for Non-Deterministic Communication over Synchronous Channels”, in *Proceedings of the 12th International Parallel Processing Symposium and 9th Symposium on Parallel and Distributed Processing*, pages 24–30, Orlando, FL, Mar.–Apr. 1998.
407. “A Threads-Only MPI Implementation for the Development of Parallel Programs”, in *Proceedings of the 11th International Symposium on High Performance Computing Systems*, pages 153–163, Winnipeg, Canada, July 1997.
408. “Higher-Order Concurrency in Java”, in *Proceedings of the Parallel Programming and Java Conference*, pages 34–47, Enschede, the Netherlands, Apr. 1997. Awarded Best Student Paper.
409. “Higher-Order Concurrency in PVM”, in *Proceedings of the Cluster Computing Conference*, Atlanta, GA, Mar. 1997.
410. “First-Class Communication in MPI”, in *Proceedings of the 2nd MPI Developer’s Conference*, pages

189–194, Notre Dame, IN, July 1996.

411. "Evaluating the Performance of Parallel Programs in a Pseudo-Parallel MPI Environment", in *Proceedings of the 10th International Symposium on High Performance Computing Systems*, Ottawa, Canada, June 1996.
412. "Direction-First e-cube: A New Routing Algorithm for k-ary n-cube Networks" (joint work with Sampalli Srinivas), in *Proceedings of the 9th International Symposium on High Performance Computing Systems*, pages 329–338, Montréal, Canada, July 1995.

Other Publications

413. "Super Guarding and Dark Rays in Art Galleries" (joint work with MIT CompGeom Group, Hugo A. Akitaya, Adam Hesterberg, Anna Lubiw, Jayson Lynch, Joseph O'Rourke, and Frederick Stock), in *Proceedings of the 35th Canadian Conference on Computational Geometry*, pages 51–61, July–Aug. 2023.
414. "Reconfiguration of Linear Surface Chemical Reaction Networks with Bounded State Change" (joint work with Robert M. Alaniz, Michael Coulombe, Bin Fu, Timothy Gomez, Elise Grizzell, Ryan Knobel, Andrew Rodriguez, Robert Schweller, and Tim Wylie), in *Proceedings of the 35th Canadian Conference on Computational Geometry*, pages 51–61, July–Aug. 2023.
415. "Every Author as First Author" (joint work with Martin L. Demaine), in *Proceedings of SIGTBD*, Apr. 2023.
416. "Geodesic paths passing through all faces on a polyhedron" (joint work with Martin Demaine, David Eppstein, Hiro Ito, Yuta Katayama, Wataru Maruyama, and Yushi Uno), in *Abstracts from the Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 58–59, Tokyo, Japan, Sept. 2022.
417. "Complexity of Solo Chess with Unlimited Moves" (joint work with Josh Brunner, Lily Chung, Michael Coulombe, Timothy Gomez, and Jayson Lynch), in *Abstracts from the Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 132–133, Tokyo, Japan, Sept. 2022.
418. "This Game Is Not Going To Analyze Itself" (joint work with Aviv Adler, Joshua Ani, Lily Chung, Michael Coulombe, Yevhenii Diomidov, and Quanquan Liu), in *Abstracts from the Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 134–135, Tokyo, Japan, Sept. 2022.
419. "Computational Complexity of Flattening Fixed-Angle Orthogonal Chains" (joint work with Hiro Ito, Jayson Lynch, and Ryuhei Uehara), in *Proceedings of the 34th Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2022.
420. "Discretization to Prove the Nonexistence of "Small" Common Unfoldings Between Polyhedra" (joint work with Elena Arseneva, Tonan Kamata, and Ryuhei Uehara), in *Proceedings of the 34th Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2022.
421. "ZHED is NP-complete" (joint work with Sagnik Saha), in *Proceedings of the 34th Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2022.
422. "Puzzle Fonts About Puzzles" (joint work with Martin L. Demaine), in *Exchange Book of the 14th Gathering for Gardner*, Atlanta, GA, Apr. 2022.
423. "The Legend of Zelda: The Complexity of Mechanics" (joint work with Jeffrey Bosboom, Josh Brunner, Michael Coulombe, Dylan H. Hendrickson, Jayson Lynch, and Lorenzo Najt), in *Abstracts from the 23rd Thailand-Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 132–133, Sept. 2021.
424. "Celeste is PSPACE-hard" (joint work with Lily Chung), in *Abstracts from the 23rd Thailand-Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 76–77, Sept. 2021.
425. "Orthogonal Fold & Cut" (joint work with Joshua Ani, Josh Brunner, Martin L. Demaine, Dylan Hendrickson, Victor Luo, and Rachana Madhukara), in *Abstracts from the 23rd Thailand-Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 30–31, Sept. 2021.
426. "Multifold tiles of polyominoes and convex lattice polygons" (joint work with Kota Chida, Martin Demaine, David Eppstein, Adam Hesterberg, Takashi Horiyama, John Iacono, Hiro Ito, Stefan Langerman, Ryuhei Uehara, and Yushi Uno), in *Abstracts from the 23rd Thailand-Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 28–29, Sept. 2021.

427. "Complexity of Simple Folding Orthogonal Crease Patterns" (joint work with Josh Brunner, Dylan Hendrickson, Victor Luo, and Andy Tockman), in *Abstracts from the 23rd Thailand-Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 26–27, Sept. 2021.
428. "Unfolding Orthotubes with a Dual Hamiltonian Path" (joint work with Kritkorn Karntikoon), in *Abstracts from the 23rd Thailand-Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, pages 24–25, Sept. 2021.
429. "Yin-Yang Puzzles are NP-complete" (joint work with Jayson Lynch, Mikhail Rudoy, and Yushi Uno), in *Proceedings of the 33rd Canadian Conference in Computational Geometry*, to appear, Halifax, Canada, Aug. 2021.
430. "Edge-Unfolding Prismatoids: Tall or Rectangular Base" (joint work with Vincent Bian and Rachana Madhukara), in *Proceedings of the 33rd Canadian Conference in Computational Geometry*, to appear, Halifax, Canada, Aug. 2021.
431. "Folding Points to a Point and Lines to a Line" (joint work with Hugo A. Akitaya, Brad Ballinger, Thomas C. Hull, and Christiane Schmidt), in *Proceedings of the 33rd Canadian Conference in Computational Geometry*, to appear, Halifax, Canada, Aug. 2021.
432. "Folding Small Polyominoes into a Unit Cube" (joint work with Kingston Yao Czajkowski, Martin L. Demaine, Kim Eppling, Robby Kraft, Klara Mundilova, and Levi Smith), in *Proceedings of the 32nd Canadian Conference in Computational Geometry*, Saskatchewan, Canada, Aug. 2020.
433. "2048 Without Merging" (joint work with Hugo Akitaya, Jason S. Ku, Jayson Lynch, Mike Paterson, and Csaba D. Tóth), in *Proceedings of the 32nd Canadian Conference in Computational Geometry*, Saskatchewan, Canada, Aug. 2020.
434. "New Results in Sona Drawing: Hardness and TSP Separation" (joint work with Man-Kwun Chiu, Yevhenii Diomidov, David Eppstein, Robert A. Hearn, Adam Hesterberg, Matias Korman, Irene Parada, and Mikhail Rudoy), in *Proceedings of the 32nd Canadian Conference in Computational Geometry*, Saskatchewan, Canada, Aug. 2020.
435. "Acutely Triangulated, Stacked, and Very Ununfoldable Polyhedra" (joint work with Martin L. Demaine and David Eppstein), in *Proceedings of the 32nd Canadian Conference in Computational Geometry*, Saskatchewan, Canada, Aug. 2020.
436. "Some Polycubes Have No Edge-Unzipping" (joint work with Martin L. Demaine, David Eppstein, and Joseph O'Rourke), in *Proceedings of the 32nd Canadian Conference in Computational Geometry*, Saskatchewan, Canada, Aug. 2020.
437. "Negative Instance for the Edge Patrolling Beacon Problem" (joint work with Zachary Abel, Hugo A. Akitaya, Martin L. Demaine, Adam Hesterberg, Matias Korman, Jason S. Ku, and Jayson Lynch), in *Abstracts from the 21st Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, to appear, Manila, Philippines, Sept. 2018.
438. "How Efficiently Can Nets of Polycubes Pack a Rectangle?" (joint work with Martin L. Demaine, Ryuhei Uehara, Yushi Uno, and Andrew Winslow), in *Abstracts from the 21st Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, to appear, Manila, Philippines, Sept. 2018.
439. "Toward Unfolding Doubly Covered n-Stars" (joint work with Hugo A. Akitaya, Brad Ballinger, Mirela Damian, Martin L. Demaine, Robin Flatland, Irina Kostitsyna, Jason S. Ku, Stefan Langerman, Joseph O'Rourke, and Ryuhei Uehara), in *Abstracts from the 21st Japan Conference on Discrete and Computational Geometry, Graphs, and Games*, to appear, Manila, Philippines, Sept. 2018.
440. "2,664 Coin-Sliding Font Puzzles" (joint work with Martin L. Demaine), in *Exchange Book of the 13th Gathering for Gardner*, Atlanta, GA, Apr. 2018.
441. "Computing 3SAT on a Fold-and-Cut Machine" (joint work with Byoungkwon An, Martin L. Demaine, and Jason S. Ku), in *Proceedings of the 29th Canadian Conference on Computational Geometry*, to appear, Ottawa, Canada, July 2017.
442. "A New File Standard to Represent Folded Structures" (joint work with Jason S. Ku and Robert J. Lang), in *Abstracts from the 26th Fall Workshop on Computational Geometry*, to appear, Oct. 2016.
443. "Secret Messages in Juggling and Card Shuffling" (joint work with Martin L. Demaine), in *Exchange Book of the 12th Gathering for Gardner*, to appear, Atlanta, GA, Mar.–Apr. 2016.
444. "Computational complexity of numberless Shakashaka" (joint work with Aviv Adler, Michael Biro,

Mikhail Rudoy, and Christiane Schmidt), in *Proceedings of the 27th Canadian Conference on Computational Geometry*, Kingston, Canada, Aug. 2015.

445. "Matching regions in the plane using non-crossing segments" (joint work with Greg Aloupis, Esther M. Arkin, David Bremner, Sándor P. Fekete, Bahram Kouhestani, and Joseph S. B. Mitchell), in *Abstracts from the 16th Spanish Meeting on Computational Geometry*, to appear, Barcelona, Spain, July 2015.
446. "Tilt: The Video – Designing Worlds to Control Robot Swarms with Only Global Signals" (joint work with Aaron T. Becker, Sándor P. Fekete, Hamed Mohtasham Shad, and Rose Morris-Wright), in *24th Multimedia Exposition in Computational Geometry, Proceedings of the 31st International Symposium on Computational Geometry*, pages 16–18, Eindhoven, The Netherlands, June 2015.
447. "Simple Folding is Strongly NP-Complete" (joint work with Hugo A. Akitaya and Jason S. Ku), in *Abstracts from the 24th Annual Fall Workshop on Computational Geometry*, Storrs, CT, Oct.–Nov. 2014.
448. "Linkage Puzzle Font" (joint work with Martin L. Demaine), in *Exchange Book of the 11th Gathering for Gardner*, to appear, Atlanta, GA, Mar. 2014.
449. "Zipper Unfolding of Domes and Prismoids" (joint work with Martin L. Demaine and Ryuhei Uehara), in *Proceedings of the 25th Canadian Conference on Computational Geometry*, to appear, Waterloo, Canada, Aug. 2013.
450. "Edge-guarding Orthogonal Polyhedra" (joint work with Nadia M. Benbernou, Martin L. Demaine, Anastasia Kurdia, Joseph O'Rourke, Godfried Toussaint, Jorge Urrutia, and Giovanni Viglietta), in *Proceedings of the 23rd Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2011.
451. "Expansive Motions for d-Dimensional Open Chains" (joint work with Sarah Eisenstat), in *Proceedings of the 23rd Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2011.
452. "Convexifying Polygons Without Losing Visibilities" (joint work with Oswin Aichholzer, Greg Aloupis, Martin L. Demaine, Vida Dujmović, Ferran Hurtado, Anna Lubiw, Günter Rote, André Schulz, Diane L. Souvaine, and Andrew Winslow), in *Proceedings of the 23rd Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2011.
453. "Common Developments of Several Different Orthogonal Boxes" (joint work with Zachary Abel, Martin Demaine, Hiroaki Matsui, Günter Rote, and Ryuhei Uehara), in *Proceedings of the 23rd Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2011.
454. "Edge-Unfolding Orthogonal Polyhedra is Strongly NP-Complete" (joint work with Zachary Abel), in *Proceedings of the 23rd Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2011.
455. "A Topologically Convex Vertex-Ununfoldable Polyhedron" (joint work with Zachary Abel and Martin L. Demaine), in *Proceedings of the 23rd Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2011.
456. "Open Problems from CCCG 2010" (joint work with Joseph O'Rourke), in *Proceedings of the 23rd Canadian Conference on Computational Geometry*, to appear, Toronto, Canada, Aug. 2011.
457. "Recreational Computing: Puzzles and tricks from Martin Gardner inspire math and science", *American Scientist*, volume 98, number 6, pages 452–456, Nov.–Dec. 2010.
458. "Zipper Unfoldings of Polyhedral Complexes" (joint work with Martin L. Demaine, Anna Lubiw, Arlo Shallit, and Jonah L. Shallit), in *Proceedings of the 22nd Canadian Conference on Computational Geometry*, pages 219–222, Winnipeg, Canada, Aug. 2010.
459. "Open Problems from CCCG 2009" (joint work with Joseph O'Rourke), in *Proceedings of the 22nd Canadian Conference on Computational Geometry*, pages 83–86, Winnipeg, Canada, Aug. 2010.
460. "Conveyer-Belt Alphabet" (joint work with Martin L. Demaine and Belén Palop), in *Findings in Elasticity*, H. Aardse and A. van Baalen, eds., pages 86–89, Apr. 2010, Pars Foundation, Lars Müller Publishers.
461. "Conveyer Belt Puzzle Font" (joint work with Martin L. Demaine and Belén Palop), in *Exchange Book of the 9th Gathering for Gardner*, to appear, Atlanta, GA, Mar. 2010.
462. "Origami Maze Puzzle Font" (joint work with Martin L. Demaine and Jason Ku), in *Exchange Book of the 9th Gathering for Gardner*, to appear, Atlanta, GA, Mar. 2010.
463. "Reconfigurable Asynchronous Logic Automata" (joint work with Neil Gershenfeld, David Dalrymple,

Kailiang Chen, Ara Knaian, Forrest Green, Scott Greenwald, and Peter Schmidt-Nielsen), in *Proceedings of the 37th ACM SIGACT-SIGPLAN Symposium on Principles of Programming Languages*, pages 1–6, Madrid, Spain, Jan. 2010.

464. "Algorithms Meet Art, Puzzles, and Magic", in *Proceedings of the 11th Algorithms and Data Structures Symposium*, Lecture Notes in Computer Science 5664, pages 193, Banff, Canada, Aug. 2009.
465. "Open Problems from CCCG 2008" (joint work with Joseph O'Rourke), in *Proceedings of the 21st Canadian Conference on Computational Geometry*, pages 75–78, Vancouver, Canada, Aug. 2009.
466. "Relaxed Gabriel Graphs" (joint work with Prosenjit Bose, Jean Cardinal, Sébastien Collette, Belén Palop, Perouz Taslakian, and Norbert Zeh), in *Proceedings of the 21st Canadian Conference on Computational Geometry*, pages 169–172, Vancouver, Canada, Aug. 2009.
467. "Mathematics Is Art" (joint work with Martin L. Demaine), in *Proceedings of 12th Annual Conference of BRIDGES: Mathematics, Music, Art, Architecture, Culture*, pages 1–10, Banff, Canada, July 2009.
468. "Locked Thick Chains" (joint work with Martin L. Demaine, Stefan Langerman, and Jérôme Vervier), in *Abstracts from the 25th European Workshop on Computational Geometry*, pages 65–68, Brussels, Belgium, Mar. 2009.
469. "Curved Crease Origami" (joint work with Duks Koschitz and Martin L. Demaine), in *Abstracts from Advances in Architectural Geometry*, pages 29–32, Vienna, Austria, Sept. 2008.
470. "Computational Balloon Twisting: The Theory of Balloon Polyhedra" (joint work with Martin L. Demaine and Vi Hart), in *Proceedings of the 20th Canadian Conference on Computational Geometry*, Montréal, Canada, Aug. 2008. Invited to special issue of *Computational Geometry: Theory and Applications*.
471. "Open Problems from CCCG 2007" (joint work with Joseph O'Rourke), in *Proceedings of the 20th Canadian Conference on Computational Geometry*, pages 183–190, Montréal, Canada, Aug. 2008.
472. "Vertex Pops and Popturns" (joint work with Greg Aloupis, Brad Ballinger, Prosenjit Bose, Mirela Damian, Martin L. Demaine, Robin Flatland, Ferran Hurtado, Stefan Langerman, Joseph O'Rourke, Perouz Taslakian, and Godfried Toussaint), in *Proceedings of the 19th Canadian Conference on Computational Geometry*, pages 137–140, Ottawa, Canada, Aug. 2007.
473. "On Rolling Cube Puzzles" (joint work with Kevin Buchin, Maike Buchin, Martin L. Demaine, Dania El-Khechen, Sándor Fekete, Christian Knauer, André Schulz, and Perouz Taslakian), in *Proceedings of the 19th Canadian Conference on Computational Geometry*, Ottawa, Canada, Aug. 2007.
474. "Disjoint Segments have Convex Partitions with 2-Edge Connected Dual Graphs" (joint work with Nadia M. Benbernou, Martin L. Demaine, Michael Hoffmann, Mashhood Ishaque, Diane L. Souvaine, and Csaba D. Tóth), in *Proceedings of the 19th Canadian Conference on Computational Geometry*, pages 13–16, Ottawa, Canada, Aug. 2007.
475. "Open Problems from CCCG 2006" (joint work with Joseph O'Rourke), in *Proceedings of the 19th Canadian Conference on Computational Geometry*, pages 277–280, Ottawa, Canada, Aug. 2007.
476. "Wrapping the Mozartkugel" (joint work with Martin L. Demaine, John Iacono, and Stefan Langerman), in *Abstracts from the 24th European Workshop on Computational Geometry*, pages 14–17, Graz, Austria, Mar. 2007. Invited to special issue of *Computational Geometry: Theory and Applications*.
477. "Deflating The Pentagon" (joint work with Martin L. Demaine, Diane L. Souvaine, and Perouz Taslakian), in *Abstracts from the 24th European Workshop on Computational Geometry*, pages 10–13, Graz, Austria, Mar. 2007.
478. "Computational Geometry through the Information Lens", in *Abstracts from the 24th European Workshop on Computational Geometry*, pages 81, Graz, Austria, Mar. 2007.
479. "Origami, Linkages, and Polyhedra: Folding with Algorithms", in *Proceedings of the 14th Annual European Symposium on Algorithms*, pages 1, Zürich, Switzerland, Sept. 2006.
480. "Curves in the Sand: Algorithmic Drawing" (joint work with Mirela Damian, Martin L. Demaine, Vida Dujmović, Dania El-Khechen, Robin Flatland, John Iacono, Stefan Langerman, Henk Meijer, Suneeta Ramaswami, Diane L. Souvaine, Perouz Taslakian, and Godfried T. Toussaint), in *Proceedings of the 18th Canadian Conference on Computational Geometry*, pages 11–14, Aug. 2006.
481. "Open Problems from CCCG 2005" (joint work with Joseph O'Rourke), in *Proceedings of the 18th Canadian Conference on Computational Geometry*, pages 75–80, Aug. 2006.
482. "Linkage Folding: From Erdős to Proteins", in *Proceedings of the 18th Canadian Conference on Com-*

putational Geometry, pages 1, Aug. 2006.

483. "Open Problems from CCCG 2004" (joint work with Joseph O'Rourke), in *Proceedings of the 17th Canadian Conference on Computational Geometry*, pages 303–306, Windsor, Canada, Aug. 2005.
484. "Building Blocks and Excluded Sums" (joint work with Martin L. Demaine, Alan Edelman, Charles E. Leiserson, and Per-Olof Persson), *SIAM News*, volume 38, number 1, pages 1, 4, 6, Jan. 2005.
485. "Puzzles, Art, and Magic with Algorithms" (joint work with Martin L. Demaine), in *Proceedings of the 15th Annual International Symposium on Algorithms and Computation*, Lecture Notes in Computer Science 3341, pages 1, Hong Kong, China, 2004.
486. "Finding a Divisible Pair" (joint work with Stelian Ciurea, Corina E. Pătraşcu, and Mihai Pătraşcu), *ACM SIGSAM Bulletin*, volume 38, number 3, pages 98–100, Sept. 2004.
487. "Continuous Foldability of Polygonal Paper" (joint work with Satyan L. Devadoss, Joseph S. B. Mitchell, and Joseph O'Rourke), in *Proceedings of the 16th Canadian Conference on Computational Geometry*, pages 64–67, Montréal, Canada, Aug. 2004.
488. "Unfolding Polyhedral Bands" (joint work with Greg Aloupis, Stefan Langerman, Pat Morin, Joseph O'Rourke, Ileana Streinu, and Godfried Toussaint), in *Proceedings of the 16th Canadian Conference on Computational Geometry*, pages 60–63, Montréal, Canada, Aug. 2004. Invited to special issue of *Computational Geometry: Theory and Applications*.
489. "Open Problems from CCCG 2003" (joint work with Joseph O'Rourke), in *Proceedings of the 16th Canadian Conference on Computational Geometry*, pages 209–211, Montréal, Canada, Aug. 2004.
490. "Refolding Planar Polygons" (joint work with Hayley N. Iben and James F. O'Brien), in *Technical Sketchs of the 31st International Conference on Computer Graphics and Interactive Techniques*, Los Angeles, CA, Aug. 2004.
491. "Optimizing a 2D Function Satisfying Unimodality Properties" (joint work with Stefan Langerman), in *Abstracts from the 20th European Workshop on Computational Geometry*, pages 107–110, Seville, Spain, Mar. 2004.
492. "Open Problems at the 2002 Dagstuhl Seminar on Algorithmic Combinatorial Game Theory" (joint work with Rudolf Fleischer, Aviezri S. Fraenkel, and Richard J. Nowakowski), *Theoretical Computer Science*, volume 313, number 3, pages 539–543, Feb. 2004. Special issue on algorithmic combinatorial game theory.
493. "Hinged Dissection of Polygons is Hard" (joint work with Robert A. Hearn and Greg N. Frederickson), in *Proceedings of the 15th Canadian Conference on Computational Geometry*, pages 98–102, Halifax, Canada, Aug. 2003.
494. "On the Complexity of Halfspace Volume Queries" (joint work with Jeff Erickson and Stefan Langerman), in *Proceedings of the 15th Canadian Conference on Computational Geometry*, pages 159–160, Halifax, Canada, Aug. 2003.
495. "Open Problems from CCCG 2002" (joint work with Joseph O'Rourke), in *Proceedings of the 15th Canadian Conference on Computational Geometry*, pages 178–181, Halifax, Canada, Aug. 2003.
496. "Quartering a Square Optimally" (joint work with Prosenjit Bose, John Iacono, and Stefan Langerman), in *Abstracts from the Japan Conference on Discrete and Computational Geometry*, pages 5–6, Tokyo, Japan, Dec. 2002.
497. "Open Problems from CCCG 2001" (joint work with Joseph O'Rourke), in *Proceedings of the 14th Canadian Conference on Computational Geometry*, Lethbridge, Canada, Aug. 2002.
498. "Tighter Bounds on the Genus of Nonorthogonal Polyhedra Built from Rectangles" (joint work with Therese Biedl, Timothy M. Chan, Martin L. Demaine, Paul Nijjar, Ryuhei Uehara, and Ming-wei Wang), in *Proceedings of the 14th Canadian Conference on Computational Geometry*, pages 105–108, Lethbridge, Canada, Aug. 2002.
499. "Push-2-F is PSPACE-Complete" (joint work with Robert A. Hearn and Michael Hoffmann), in *Proceedings of the 14th Canadian Conference on Computational Geometry*, pages 31–35, Lethbridge, Canada, Aug. 2002.
500. "Flat-State Connectivity of Chains with Fixed Acute Angles" (joint work with Greg Aloupis, Henk Meijer, Joseph O'Rourke, Ileana Streinu, and Godfried Toussaint), in *Proceedings of the 14th Canadian Conference on Computational Geometry*, pages 27–30, Lethbridge, Canada, Aug. 2002.
501. "Open Problems from CCCG 2000" (joint work with Joseph O'Rourke), in *Proceedings of the 13th*

Canadian Conference on Computational Geometry, pages 185–187, Waterloo, Canada, Aug. 2001.

502. "Reaching Folded States of a Rectangular Piece of Paper" (joint work with Joseph S. B. Mitchell), in *Proceedings of the 13th Canadian Conference on Computational Geometry*, pages 73–75, Waterloo, Canada, Aug. 2001.
503. "The CCCG 2001 Logo" (joint work with Martin L. Demaine and Anna Lubiw), in *Proceedings of the 13th Canadian Conference on Computational Geometry*, pages iv–v, Waterloo, Canada, Aug. 2001.
504. "PushPush and Push-1 are NP-hard in 2D" (joint work with Martin L. Demaine and Joseph O'Rourke), in *Proceedings of the 12th Annual Canadian Conference on Computational Geometry*, pages 211–219, Fredericton, Canada, Aug. 2000.
505. "Computational Geometry Column 37" (joint work with Joseph O'Rourke), *International Journal of Computational Geometry and Applications*, volume 10, number 1, pages 103–107, Feb. 2000. Also appears in SIGACT News, volume 30, number 3, issue #112, September 1999, pages 39–42.
506. "Open Problems from CCCG'99" (joint work with Joseph O'Rourke), in *Proceedings of the 11th Canadian Conference on Computational Geometry*, Vancouver, Canada, Aug. 1999.
507. "Metamorphosis of the Cube" (joint work with Martin Demaine, Anna Lubiw, Joseph O'Rourke, and Irena Pashchenko), in *8th Annual Video Review of Computational Geometry, Proceedings of the 15th Annual ACM Symposium on Computational Geometry*, pages 409–410, Miami Beach, FL, June 1999.
508. "Hiding Disks in Folded Polygons" (joint work with Therese C. Biedl, Martin L. Demaine, Anna Lubiw, and Godfried T. Toussaint), in *Proceedings of the 10th Canadian Conference on Computational Geometry*, Montréal, Canada, Aug. 1998.
509. "Unfolding Some Classes of Orthogonal Polyhedra" (joint work with Therese Biedl, Martin Demaine, Anna Lubiw, Mark Overmars, Joseph O'Rourke, Steve Robbins, and Sue Whitesides), in *Proceedings of the 10th Canadian Conference on Computational Geometry*, Montréal, Canada, Aug. 1998.

Patents

510. "A Method for Building Self-Folding Machines" (joint work with Samuel Felton, Daniela Rus, Michael Tolley, and Robert J. Wood), US 10,151,304, Dec. 2018.
511. "Reconfigurable Logic Automata" (joint work with David Allen Dalrymple, Neil Gershenfeld, Forrest Green, and Ara Knaian), US 8,013,629 B2, Sept. 2011.

Plenary Talks

Nov. 2023 "Algorithmic Art with Curved Creases, Fonts, and Puzzles" (presented with Martin L. Demaine), Plenary talk, National Museum of Mathematics, New York, NY.

Sept. 2023 "New Adventures in Puzzle Fonts", Plenary talk, 25th Indonesia-Japan Conference on Discrete and Computational Geometry, Graphs, and Games, Bali, Indonesia.

July 2023 "Algorithmic Art with Curved Creases, Fonts, and Puzzles" (presented with Martin L. Demaine), Plenary talk, BRIDGES: Mathematics, Art, Music, Architecture, Education, Culture, Halifax, Canada.

July 2023 "Art & Science in Origami & Glass", Plenary talk, Haystack Labs, Deer Isle, ME.

July 2023 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

June 2023 "Understanding the Complexity of Motion Planning, Games, and Puzzles through Gadgets", Plenary talk, Distinguished Speaker Series, IBM Research.

Dec. 2022 "Atoms. Geometry. Algorithms" (presented with Tess Smidt), Plenary talk, Catalyst Conversations, MIT Visual Arts Center, Cambridge, MA.

Nov. 2022 "Origami from Mathematics to Sculpture", Plenary talk, Celebration of Mind: G4G Peru 2022, Arequipa, Perú.

Sept. 2022 "Pushing Block Puzzles", Plenary talk, 24th Japan Conference on Discrete and Computational Geometry, Graphs, and Games, Tokyo, Japan.

June 2022 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

Oct. 2021 "New Ways to Fold a Cube from Paper", Plenary talk, G4G's Celebration of Mind.

Sept. 2021 "Understanding the Complexity of Motion Planning through Gadgets", Plenary talk, 23rd Thailand-Japan Conference on Discrete and Computational Geometry, Graphs, and Games, Chiang Mai, Thailand.

June 2021 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

June 2021 "The Math of the Rubik's Cube", Plenary talk, Alumni Weekend Mathematics, University of Waterloo, Waterloo, Canada.

Feb.–Mar. 2021 "Understanding the Complexity of Motion Planning", Plenary talk, 15th International Conference and Workshop on Algorithms and Computation, Yangon, Myanmar.

Dec. 2020 "Recent Results in Geometric Folding Algorithms", Plenary talk, Applied Research on Art, Mathematics and Engineering based on the Science of Origami, Center for Mathematical Modeling and Applications, Meiji University, Tokyo, Japan.

Aug. 2020 "A Tribute to Godfried Toussaint (1994–2019)", Plenary talk, Paul Erdős Memorial Lecture, 32nd Canadian Conference on Computational Geometry, Saskatoon, Saskatchewan.

July 2020 "Mathematics Meets Origami", Plenary talk, I. E. Block Lecture, SIAM Annual Meeting.

May 2020 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Plenary talk, United States of America Computing Olympiad Training Camp, Clemson, SC.

Sept. 2019 "New Results in Computational Origami", Plenary talk, 22nd Japan Conference on Discrete and Computational Geometry, Graphs, and Games, Tokyo, Japan.

Aug. 2019 "Teaching the World at MIT through Research Collaboration and Puzzles", Plenary talk, Japan Advanced Institute of Science and Technology, Kanazawa, Japan.

Aug. 2019 "Marly Music: Erik and Martin Demaine accompanied by John C. O'Leary III" (presented with Martin L. Demaine and John C. O'Leary III), Plenary talk, Museum of Fine Arts, St. Petersburg, FL.

Aug. 2019 "Playing with Glass & Paper" (presented with Martin L. Demaine), Plenary talk, Duncan McClellan Gallery.

Aug. 2019 "Mathematics Meets Origami", Plenary talk, MOVES 2019: Mathematics of Various Entertaining Subjects, New York, NY.

July–Aug. 2019 "Recreational Mathematics & Computer Science: Martin Gardner's Influence on Research", Plenary talk, MathFest 2019, Cincinatti, OH.

July 2019 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

May 2019 "Cube Conundrums", Plenary talk, National Museum of Mathematics, New York, NY.

Feb. 2019 "Having Fun with Math and Computers", Plenary talk, Martin Gardner's Legacy: One Oklahoman's Imprint on Math, Magic, and Philosophy, Oklahoma University, Norman, OK.

Jan. 2019 "Lectures on Computational and Structural Origami" (presented with Tomohiro Tachi), Plenary talk, University of Stuttgart, Stuttgart, Germany.

Dec. 2018 "Computational Origami: from Science to Sculpture", Plenary talk, SIGGRAPH Asia 2018, Tokyo, Japan.

Sept. 2018 "Motion Planning: Playing with Robots", Plenary talk, 21st Japan Conference on Discrete and Computational Geometry, Graphs, and Games, Manila, Philippines.

July 2018 "Fabrication through Folding", Plenary talk, Symposium of the International Association for Shell and Spatial Structures, Cambridge, MA.

June 2018 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

June 2018 "Fabrication through Folding", Plenary talk, ACM Symposium on Computational Fabrication, Cambridge, MA.

May 2018 "Origami Meets Math, Science, and Engineering", Plenary talk, MSRI & American Mathematical Society Congressional Briefings, United States Congress, Washington, DC.

Apr. 2018 "Fun with Fonts: Mathematical Typography", Plenary talk, University of San Diego, San Diego, CA.

Apr. 2018 "Playing with Art and Science: Origami, Glass, and Mathematics" (presented with Martin L. Demaine), Plenary talk, Knapp Lecture, University of San Diego, San Diego, CA.

Mar. 2018 "M. C. Escher: Reflection and Perspective" (presented with Barbara Lynch, Lloyd Schwartz, James Stroud, and Ronni Baer), Plenary talk, Museum of Fine Arts, Boston, MA.

Jan. 2018 "Lectures on Computational and Structural Origami" (presented with Rupert Maleczek), Plenary talk, University of Tokyo, Tokyo, Japan.

Oct. 2017 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, Japan Information & Culture Center, Washington, DC.

Aug.–Sept. 2017 "20 Years of JCDCGGG", Plenary talk, 20th Japan Conference on Discrete and Computational Geometry, Graphs, and Games, Tokyo, Japan.

Aug. 2017 "Folding Paper: Visual Art Meets Algorithms", Plenary talk, 11th Asian Forum on Graphic Science, Tokyo, Japan.

July 2017 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, Public Lecture, Mathematical Congress of the Americas, Montréal, Canada.

July 2017 "Fun with Fonts: Mathematical Typography", Plenary talk, BRIDGES: Mathematics, Art, Music, Architecture, Education, Culture, Waterloo, Canada.

July 2017 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

June 2017 "Computing with Glue, Balls, and Recycled Bits: New Physical Models of Computing", Plenary talk, Unconventional Computation and Natural Computation, Fayetteville, AR.

Feb. 2017 "Art, Math, Science, Technology Collide", Plenary talk, Museum of the White Mountains, Plymouth, NH.

Jan. 2017 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, The University of the West Indies, Cave Hill, Barbados.

Dec. 2016 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Plenary talk, 12th International Workshop on the Algorithmic Foundations of Robotics, San Francisco, CA.

Nov. 2016 "Playing with Art and Science: Origami, Glass, and Mathematics" (presented with Martin L. Demaine), Plenary talk, Walker-Ames Lecturers, University of Washington, Seattle, WA.

Nov. 2016 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Plenary talk, University of Washington, Seattle, WA.

Nov. 2016 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, International Conference on Mathematical Modeling and Applications: Origami-Based Modeling and Analysis, Tokyo, Japan.

Sept. 2016 "Fun with Fonts: Algorithmic Typography", Plenary talk, 19th Japan Conference on Discrete and Computational Geometry, Graphs, and Games, Tokyo, Japan.

June 2016 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

May 2016 "Geometric Puzzles: Algorithms and Complexity", Plenary talk, Japan Advanced Institute of Science and Technology, Kanazawa, Japan.

May 2016 "New Results in Computational Origami: Physical and Theoretical Limits", Plenary talk, Meiji University, Tokyo, Japan.

Mar. 2016 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Plenary talk, Kavli Lecture, Cornell University, Ithaca, NY.

Mar. 2016 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, Kieval Lecture, Cornell University, Ithaca, NY.

Mar. 2016 "Fun with Fonts: Mathematical Typography", Plenary talk, The 2016 AMS Einstein Public Lecture in Mathematics, University of Georgia, Athens, GA.

Mar. 2016 "Mathematical Magic", Plenary talk, Math Encounters, Museum of Mathematics, New York, NY.

Jan. 2016 "Fun with Fonts: Mathematical Typography", Plenary talk, Networked Life: Celebrating the life and career of Fan Chung and Ron Graham, La Jolla, CA.

Jan.–Feb. 2016 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, 2016 Information Theory and Applications Workshop, La Jolla, CA.

Dec. 2015 "Playing with Art and Science: Origami, Glass, and Mathematics", Plenary talk, MoSAIC Fest: Math of Science, Art, Industry & Culture, Cambridge, MA.

July 2015 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

June 2015 "Fun with Fonts: Mathematical Typography", Plenary talk, Connections in Discrete Mathematics: A celebration of the work of Ron Graham, Vancouver, Canada.

June 2015 "Playing with Art and Science: Origami, Glass, and Mathematics" (presented with Martin L. Demaine), Plenary talk, Above the Fold: Artist Lecture, Hermitage Museum and Gardens, Norfolk, VA.

June 2015 "Folding Paper: Visual Art Meets Mathematics" (presented with Martin L. Demaine), Plenary talk, Museum of Science and Industry, Chicago, IL.

Apr. 2015 "Folding: Science Fiction to Science", Plenary talk, Active Matter Summit, Cambridge, MA.

Apr. 2015 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, Computer Science Colloquium, Tufts University, Medford, MA.

Apr. 2015 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, 7th Annual Marvin I. Freedman Memorial Colloquium, Boston University, Boston, MA.

Jan. 2015 "Playing with Art and Science: Origami, Glass, and Mathematics" (presented with Martin L. Demaine), Plenary talk, Detroit Institute of Arts, Detroit, MI.

Nov. 2014 "Computational Origami: from Science to Sculpture" (presented with Martin L. Demaine and Shandra McLane), Plenary talk, Museum of Glass, Tacoma, WA.

Oct. 2014 "Folding Paper: Visual Art Meets Mathematics" (presented with Martin L. Demaine), Plenary talk, 10th Annual Center Institute, Boston, MA.

Aug. 2014 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Plenary talk, ICE-TCS Theory Day 2014, Reykjavik, Iceland.

Aug. 2014 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, Crossroads of Art and Science, Icelandic Centre of Excellence in Theoretical Computer Science, Reykjavik University, Reykjavik, Iceland.

Aug. 2014 "Playing with Art and Science: Origami, Glass, and Mathematics", Plenary talk, 20th Origami Tanteidan Convention, Tokyo, Japan.

Aug. 2014 "Computational Origami: from Science to Sculpture", Plenary talk, 38th ASME Mechanisms & Robotics Conference, Buffalo, NY.

July 2014 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

July 2014 "Fun with Fonts: Algorithmic Typography", Plenary talk, 7th International Conference on Fun with Algorithms, Lipari Island, Italy.

June 2014 "Playing with Art and Science: Origami, Glass, and Mathematics", Plenary talk, OrigamiUSA Annual Convention, New York, NY.

June 2014 "Recent Results in Recreational Computer Science", Plenary talk, Workshop on Geometric Puzzles and Games, Computational Geometry Week, Kyoto, Japan.

June 2014 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Vienna Gödel Lecture, Vienna University of Technology, Vienna, Austria.

Apr. 2014 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Plenary talk, Centre College, Danville, KY.

Apr. 2014 "Playing with Art and Science: Origami, Glass, and Mathematics" (presented with Martin L. Demaine), Plenary talk, Humana Lecture Series, Centre College, Danville, KY.

Apr. 2014 "The Art and Mathematics of Origami" (presented with Martin L. Demaine), Plenary talk, Lunch with the Arts, Community Arts Center, Danville, KY.

Apr. 2014 "Folding Paper: Visual Art Meets Mathematics" (presented with Martin L. Demaine), Plenary talk, Dallas Contemporary, Dallas, TX.

Apr. 2014 "Art & Science through Craft" (presented with Martin L. Demaine), Plenary talk, Make/Speak, Boston, MA.

Feb. 2014 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Plenary talk, Theory Seminar Series, North Carolina State University, Raleigh, NC.

Feb. 2014 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Triangle Computer Science Distinguished Lecturer Series, North Carolina State University.

Jan. 2014 "MIT Glass Lab" (presented with Martin L. Demaine and Peter Houk), Plenary talk, Hot Gatherings, Cool Conversations, Museum of Fine Arts, St. Petersburg, FL.

Nov. 2013 "Playing with Art and Science" (presented with Martin L. Demaine), Plenary talk, University of the Arts, Philadelphia, PA.
Nov. 2013 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Plenary talk, Simons Foundation, New York, NY.
Oct. 2013 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, event for exhibit "Intersection", Edwards Art Gallery, Holderness School, Plymouth, NH.
Oct. 2013 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, Lafayette College, Easton, PA.
Sept. 2013 "Geometric Folding Algorithms: Linkages, Origami, Polyhedra", Plenary talk, University of Electro-Communications, Tokyo, Japan.
Sept. 2013 "Robot Swarms, Transformers, and Algorithms", Plenary talk, 12th Japan Conference on Discrete and Computational Geometry and Graphs, Tokyo, Japan.
Sept. 2013 "Computational Origami: How to Fold (Almost) Anything", Plenary talk, event for exhibit "Form of Computational Origami", Komaba Museum, University of Tokyo, Tokyo, Japan.
Aug. 2013 "How Hard Are Puzzles? (computationally)", Plenary talk, Mathematics of Various Entertaining Subjects (MOVES), New York, NY.
July 2013 "Playing with Art and Science" (presented with Martin L. Demaine), Plenary talk, Haystack 2013 Summer Conference, Haystack Mountain School of Crafts, Deer Isle, ME.
June 2013 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.
June 2013 "Folding Glass" (presented with Martin L. Demaine), Plenary talk, GlassBoston, Cambridge, MA.
June 2013 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Canadian Mathematical Society Summer Meeting, Halifax, Canada.
Apr. 2013 "Geometric Puzzles", Plenary talk, Creative Intelligence Lecture Series, Transylvania University, Lexington, KY.
Apr. 2013 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, University of Kentucky, Lexington, KY.
Apr. 2013 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Friends of Mathematics Lecture, Kansas State University, Manhattan, KS.
Apr. 2013 "From Transformers to Star Trek Replicators", Plenary talk, Friends of Mathematics Lecture, Kansas State University, Manhattan, KS.
Apr. 2013 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, AMS Arnold Ross Lecture, Museum of Mathematics, New York, NY.
Jan. 2013 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, Renwick Gallery, Smithsonian American Art Museum, Washington, DC.
Dec. 2012 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, National Tsing Hua University, Hsinchu, Taiwan.
Dec. 2012 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Academia Sinica, Taipei, Taiwan.
Dec. 2012 "Origami Robots and Star Trek Replicators", Plenary talk, 23rd International Symposium on Algorithm and Computation, Taipei, Taiwan.
Dec. 2012 "What's the Best Way to Wrap a Krembo?", Plenary talk, Teacher Day, Israeli Origami Center, Tel Aviv, Israel.
Dec. 2012 "Beyond Planar Graphs: Minors, Bidimensionality, & Decomposition", Plenary talk, Thailand-Japan Joint Conference on Computational Geometry and Graphs, Bangkok, Thailand.
Nov. 2012 "Mathematical and Puzzle Fonts", Plenary talk, 3rd Annual Gathering for Gardner Celebration of Mind, Boston, MA.
Nov. 2012 "Modern Graph and Network Algorithms: Minors, Bidimensionality, & Decomposition", Plenary talk, National Institutes of Health, Washington, DC.
Nov. 2012 "Geometric Folding Algorithms: Linkages, Origami, Polyhedra", Plenary talk, National Institutes of Health, Washington, DC.
Oct. 2012 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, New York University Abu Dhabi, Abu Dhabi, United Arab Emirates.
Oct. 2012 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, Khalifa University, Abu Dhabi,

United Arab Emirates.

Aug. 2012 "How Hard Are Puzzles? (computationally, in the limit)", Plenary talk, International Puzzle Party 2012, Arlington, VA.

July 2012 "Folding Paper: Visual Art Meets Mathematics" (presented with Martin L. Demaine), Plenary talk, event for exhibit "(Un)folding Patterns", Dorsky Gallery, Long Island City, NY.

July 2012 "Geometric Folding Algorithms: Linkages, Origami, Polyhedra", Plenary talk, Symposium on Geometry Processing, Tallinn, Estonia.

July 2012 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

May 2012 "Origami from Science to Sculpture", Plenary talk, Cairo Science Festival, Cairo, Egypt.

Apr. 2012 "Origami from Science to Sculpture", Plenary talk, Big Ideas for Busy People, Cambridge Science Festival, Cambridge, MA.

Mar. 2012 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Pólya Lecture, Kentucky Section Meeting of the Mathematical Association of America, Louisville, KY.

Mar. 2012 "Geometric Puzzles: Algorithms and Complexity", Plenary talk, William Marshall Bullitt Lecture, Department of Mathematics, University of Louisville, Louisville, KY.

Mar. 2012 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Pólya Lecture, Southeastern Section Meeting of the Mathematical Association of America, Atlanta, GA.

Mar. 2012 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Pólya Lecture and Anderson Distinguished Lecture, Louisiana/Mississippi Section Meeting of the Mathematical Association of America, Natchitoches, LA.

Feb. 2012 "Folding Paper: Visual Art Meets Mathematics", Plenary talk, opening event for exhibit "Mens et Manus: Folded Paper of MIT", Fuller Craft Museum, Brockton, MA.

Jan. 2012 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Carnegie Capital Science Evenings, Carnegie Institution for Science, Washington, DC.

Jan. 2012 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Mathematics Colloquium, National Security Agency, Washington, DC.

Jan. 2012 "Recent Results in Computational Geometry", Plenary talk, SIAM Minisymposium on Vistas in Applied, Computational, and Discrete Mathematics, 2012 Joint Mathematics Meetings, Boston, MA.

Jan. 2012 "Geometric Puzzles: Algorithms and Complexity", Plenary talk, Gerald and Judith Porter Public Lecture, 2012 Joint Mathematics Meetings, Boston, MA.

Oct. 2011 "Constructing Strings at the Nano Scale via Staged Self-Assembly", Plenary talk, 18th Symposium on String Processing and Information Retrieval, Pisa, Italy.

Oct. 2011 "Geometric Puzzles: Algorithms and Complexity", Plenary talk, Distinguished Lecture Series, Fields Institute, Toronto, Canada.

Oct. 2011 "Linkage Folding: From Erdős to Proteins", Plenary talk, Distinguished Lecture Series, Fields Institute, Toronto, Canada.

Oct. 2011 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Distinguished Lecture Series, Fields Institute, Toronto, Canada.

July 2011 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

June 2011 "Geometric Puzzles: Algorithms and Complexity", Plenary talk, 14th Spanish Meeting on Computational Geometry: In honor of Ferran Hurtado's 60th Birthday, Alcalá de Henares, Spain.

May 2011 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Pólya Lecture, Michigan Section Meeting of the Mathematical Association of America, Kalamazoo, MI.

Apr. 2011 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Pólya Lecture, 79th Annual Wisconsin Section Meeting of the Mathematical Association of America, Menonomie, WI.

Apr. 2011 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Pólya Lecture, Missouri Section Spring Meeting of the Mathematical Association of America, Columbia, MO.

Mar. 2011 "The Geometry of Origami, from Science to Sculpture", Plenary talk, Math Encounters, Museum of Mathematics, New York, NY.

Feb. 2011 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Pólya Lecture, Northern California, Nevada and Hawaii Section Meeting of the Mathematical Association of America, Santa Rosa, CA.

Jan. 2011 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, Distinguished Lecture Series, University of British Columbia, Vancouver, Canada.

Nov. 2010 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, 55th Annual Fall Sectional Meeting, Northeastern Section, Mathematical Association of America, Providence, RI.

Nov. 2010 "Geometric Puzzles: Algorithms and Complexity", Plenary talk, China-Japan Joint Conference on Computational Geometry, Graphs and Applications, Dalian, China.

Oct. 2010 "Origami Transformers and Star Trek Replicators", Plenary talk, 20th Annual Fall Workshop on Computational Geometry, Stony Brook, NY. Also part of Distinguished Lecture Series, Stony Brook University.

Sept. 2010 "Magic, Origami and Puzzles: The Art of Mathematics", Plenary talk, Richard and Louise Guy Lecture, University of Calgary, Calgary, Canada.

July 2010 "Computational Origami from Science to Sculpture", Plenary talk, 5th International Conference on Origami in Science, Mathematics and Education, Singapore.

July 2010 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

June 2010 "Algorithmic Graph Minors and Bidimensionality", Plenary talk, 36th International Workshop on Graph-Theoretic Concepts in Computer Science, Crete, Greece.

June 2010 "Staged Assembly Algorithms", Plenary talk, 16th International Meeting on DNA Computing and Molecular Programming, Hong Kong, China.

Apr. 2010 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, 17th Annual Hudson River Undergraduate Mathematics Conference, Keene, NH.

Apr. 2010 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, 26th British Colloquium for Theoretical Computer Science, Edinburgh, Scotland.

Jan. 2010 "Mathematics Is Art: Art Is Mathematics" (presented with Martin L. Demaine), Plenary talk, The Entertainment Gathering, Monterey, CA.

Nov. 2009 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, 7th Japan Conference on Computational Geometry and Graphs, Kanazawa, Japan.

Sept. 2009 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, 17th Annual European Symposium on Algorithms, Copenhagen, Denmark.

Aug. 2009 "Algorithms Meet Art, Puzzles, and Magic", Plenary talk, 11th Algorithms and Data Structures Symposium, Banff, Canada.

July 2009 "Mathematics Is Art", Plenary talk, 12th Annual Conference of BRIDGES: Mathematical Connections in Art, Music, and Science, Banff, Canada.

July 2009 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

July 2009 "Actuator Nets: Folding, Reconfiguring, and Deploying Sensors", Plenary talk, 5th International Workshop on Algorithmic Aspects of Wireless Sensor Networks, Rhodes, Greece.

May 2009 "Between the Folds: The Art and Science of Origami", Plenary talk, The Graduate Center, City University of New York, New York, NY.

Apr. 2009 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, MIT Club of Belgium Gala Honoring Ferdinand Dierkens, Brussels, Belgium.

Mar. 2009 "Linkage Folding: From Erdős to Proteins", Plenary talk, International Francqui Chair Lectures, Faculté Universitaire des Sciences Agronomiques de Gembloux, Gembloux, Belgium.

Feb. 2009 "Origami, Linkages, and Polyhedra: Geometric Folding Algorithms", Plenary talk, International Francqui Chair Lectures, Vrije Universiteit Brussel, Brussels, Belgium.

Dec. 2008 "(Theoretical) Computer Science is Everywhere", Plenary talk, International Francqui Chair Lectures, Université Catholique de Louvain, Louvain, Belgium.

Nov. 2008 "Mathematics meets Art, Puzzles, and Magic: Fun with Algorithms", Plenary talk, International Francqui Chair Lectures, Université Libre de Bruxelles, Brussels, Belgium.

Oct. 2008 "Folding Matter", Plenary talk, DARPA InfoChemistry meeting, Cambridge, MA.

Sept. 2008 "(Theoretical) Computer Science is Everywhere", Plenary talk, Microsoft Research New England, Cambridge, MA.

Aug. 2008 "Fun with Algorithms and Folding III: Transformers: Reconfigurable Robots and Hinged Dissections", Plenary talk, Earle Raymond Hedrick Lecture Series, MathFest 2008, Madison, WI.

Aug. 2008 "Fun with Algorithms and Folding II: Origami, Linkages, and Polyhedra: Geometric Folding Algorithms", Plenary talk, Earle Raymond Hedrick Lecture Series, MathFest 2008, Madison, WI.

July 2008 "Fun with Algorithms and Folding I: Mathematics Meets Art, Puzzles, and Magic", Plenary talk, Earle Raymond Hedrick Lecture Series, MathFest 2008, Madison, WI.

July 2008 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

May 2008 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Katayanagi Prize Lecture, Tokyo University of Technology, Tokyo, Japan.

May 2008 "Algorithmic Graph Minors and Bidimensionality", Plenary talk, 3rd International Workshop on Parameterized and Exact Computation, Victoria, Canada.

Apr. 2008 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Katayanagi Prize Lecture, Carnegie Mellon University, Pittsburgh, PA.

Apr. 2008 "Computational Origami", Plenary talk, MIND'08: The Design and the Elastic Mind Symposium, New York, NY.

Dec. 2007 "Permuting Polygons" (presented with Stefan Langerman), Plenary talk, Japan Advanced Institute of Science and Technology, Kanazawa, Japan.

Oct. 2007 "Geometric Folding Algorithms: Linkages, Origami, Polyhedra", Plenary talk, IDEAS Boston, Boston, MA.

June 2007 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

Apr. 2007 "Linkage Folding: From Erdős to Proteins", Plenary talk, Cantrell Lecture Series, University of Georgia, Athens, GA.

Apr. 2007 "Mathematics Meets Art, Puzzles, and Magic: Fun with Algorithms", Plenary talk, Cantrell Lecture Series, University of Georgia, Athens, GA.

Apr. 2007 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Cantrell Lecture Series, University of Georgia, Athens, GA.

Mar. 2007 "Computational Geometry through the Information Lens", Plenary talk, 23rd European Workshop on Computational Geometry, Graz, Austria.

Jan. 2007 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Anderson Science Lecture, Denison University, Granville, OH.

Nov. 2006 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Gerhard Herzberg Lecture, Carleton University, Ottawa, Canada.

Sept. 2006 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, 14th Annual European Symposium on Algorithms, Zürich, Switzerland.

Sept. 2006 "The Mathemagic of Origami", Plenary talk, 4th International Conference on Origami in Science, Mathematics, and Education, Pasadena, CA.

Aug. 2006 "Linkage Folding: From Erdős to Proteins", Plenary talk, Paul Erdős Memorial Lecture, 18th Canadian Conference on Computational Geometry, Kingston, Canada.

July 2006 "Folding Puzzles: Origami, Mathematics, and Algorithms", Plenary talk, International Puzzle Party 2006, Boston, MA.

July 2006 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

July 2006 "Adaptive Analysis of Algorithms: Sets and Curves", Plenary talk, Analysis of Algorithms 2006, Alden Biesen, Belgium.

June 2006 "Linkage Folding: From Steam Engines to Proteins", Plenary talk, AMS-IMS-SIAM Joint Summer Research Conference, Discrete and Computational Geometry—Twenty Years Later, Snowbird, UT.

June 2005 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Women's Technology Program, Massachusetts Institute of Technology, Cambridge, MA.

June 2005 "Solving Puzzles with Algorithms: Coins, Telescopes, and Tetris", Plenary talk, BIRS Combinatorial Game Theory Workshop, Banff, Canada.

Feb. 2005 "Mathematics Meets Origami, Art, Puzzles, and Magic: Fun with Algorithms", Plenary talk, Annual Meeting of the American Association for Advancement of Science, Washington, DC.

Jan. 2005 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Joint Mathematics Meetings of the American Mathematical Society and Mathematical Association of America, Atlanta, GA.

Dec. 2004 "Puzzles, Art, and Magic with Algorithms", Plenary talk, 15th Annual International Symposium on Algorithms and Computation, Hong Kong, China.

Oct. 2004 "Fast Algorithms for Hard Graph Problems: Bidimensionality, Minors, and Local Treewidth", Plenary talk, 12th International Symposium on Graph Drawing, Harlem, NY.

Oct. 2004 "Puzzles, Art, and Magic with Algorithms", Plenary talk, Computer Science Invitational Lecture Series, University of Waterloo, Waterloo, Canada.

July 2004 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Plenary talk, Distinguished Colloquium Speaker, Oakland University Summer Mathematics Institute, Rochester, MI.

May 2004 "Puzzles, Art, and Magic with Algorithms", Plenary talk, 3rd International Conference on Fun with Algorithms, Isola d'Elba, Italy.

Apr. 2004 "Paper, Polyhedra, and Linkages: Folding with Algorithms" and "Linkages: From Steam Engines to Protein Folding", Plenary talk, 2004 Arnold Dresden Lectures, Swarthmore College, Swarthmore, PA.

Dec. 2003 "Folding and Unfolding in Computational Geometry", Plenary talk, VIGRE Undergraduate Mathematics Colloquium, University of Michigan, Ann Arbor, MI.

Aug. 2003 "Folding and Unfolding: Linkage Folding" and "Folding and Unfolding: Computational Origami", Plenary talk, MSRI Introductory Workshop in Discrete and Computational Geometry, Berkeley, CA.

May 2003 "Origami, linkages, and polyhedra: Folding with algorithms", Plenary talk, National Science Bowl Science Day, Chevy Chase, MD.

Dec. 2002 "Folding and Unfolding in Computational Geometry", Plenary talk, IBM/NYU/Columbia Theory Day, New York, NY.

Aug. 2002 "Infinitesimally Locked Linkages with Applications to Locked Trees", Plenary talk, Conference on Discrete, Combinatorial and Computational Geometry, Beijing, China.

Aug. 2001 "Playing Games with Algorithms: Algorithmic Combinatorial Game Theory", Plenary talk, 26th Symposium on Mathematical Foundations in Computer Science, Marianske Lazne, Czech Republic.

June 2001 "Playing Games with Algorithms", Plenary talk, University of Waterloo Faculty of Mathematics Graduate Student Conference, Waterloo, Canada.

Nov. 2000 "Folding and Unfolding Linkages, Paper, and Polyhedra", Plenary talk, Japan Conference on Discrete and Computational Geometry 2000, Tokyo, Japan.

June 2000 "Research is Fun: A Brief Look at Some Work in Algorithms", Plenary talk, University of Waterloo Faculty of Mathematics Graduate Student Conference, Waterloo, Canada.

Invited Talks

(excluding contributed talks for the conference papers listed above)

Nov. 2023 "What's New in the Demaine Folding Lab", Invited talk, OrigaMIT Convention, Cambridge, MA.

Aug. 2023 "A Hardness Framework for Games and Puzzles: Motion Planning through Gadgets", Invited talk, 10th International Congress on Industrial and Applied Mathematics, Tokyo, Japan.

Nov. 2022 "What's New in Computational Origami and Curved Creases" (presented with Klara Mundilova), Invited talk, OrigaMIT Convention, Cambridge, MA.

Oct. 2021 "Token Swapping and Robot Pivoting", Invited talk, Workshop on Rapid Reconfiguration of Programmable Matter, 19th International Conference on Unconventional Computation and Natural Computation.

May 2021 "Hardness of Token Swapping in Trees" (presented with Nicole Wein), Invited talk, Invited Minisymposium on Invitation to Reconfiguration, The Canadian Discrete and Algorithmic Mathematics Conference.

Nov. 2019 "What's New in the Demaine Folding Lab", Invited talk, OrigaMIT Convention, Cambridge, MA.

Nov. 2018 "What's New in the Demaine Folding Lab" (presented with Klara Mundilova), Invited talk, OrigaMIT Convention, Cambridge, MA.

Aug. 2018 "Replicators, Transformers, and Robot Swarms: Science Fiction through Geometric Algorithms", Invited talk, Seminar on Algorithmic Foundations of Programmable Matter, Schloss Dagstuhl, Wadern, Germany.

Apr. 2018 "Geometric Folding Algorithms: Linkages, Origami, Polyhedra", Invited talk, Inspiring Lectures I: Computational Geometry Towards Applications, Intensive Research Program in Discrete, Combinatorial and Computational Geometry, Barcelona, Spain.

Jan. 2018 "Fun and Games meet Computer Science", Invited talk, Knuth 80, Piteå, Sweden.

Nov. 2017 "What's New in the Demaine Folding Lab", Invited talk, OrigaMIT Convention, Cambridge, MA.

Aug. 2016 "Why Mario is so Hard/Fun", Invited talk, University of Electro-Communications, Tokyo, Japan.

Mar.–Apr. 2016 "Secret Messages in Juggling and Card Shuffling", Invited talk, Gathering for Gardner 12, Atlanta, GA.

Nov. 2015 "What's New in the Demaine Folding Lab", Invited talk, OrigaMIT Convention, Cambridge, MA.

Oct. 2013 "What's New in the Demaine Folding Lab", Invited talk, OrigaMIT Convention, Cambridge, MA.

Feb.–Apr. 2013 "Efficient Algorithms from Graph Structure Theory: Minors, Bidimensionality, and Decomposition", Invited talk, Special Session on Treewidth: Connecting Fixed-Parameter Tractability, Graphical Models, and Sparse Linear Algebra, SIAM Conference on Computational Science and Engineering, Boston, MA.

Nov. 2012 "Algorithms Meet Art, Puzzles, and Magic", Invited talk, Two Sigma Investments, New York, NY.

Oct. 2012 "My Student and Friend", Invited talk, Workshop on Data Structures (in memory of Mihai Pătraşcu), 53rd Annual IEEE Symposium on Foundations of Computer Science, New Brunswick, NJ.

May 2012 "The History of I/O Models", Invited talk, Tutorial on Algorithms for Memory-Sensitive Computing, 44th ACM Symposium on Theory of Computing, New York, NY.

Mar.-Apr. 2012 "Rubik's Cubes and Super Mario Bros.", Invited talk, Gathering for Gardner 10, Atlanta, GA.

Feb.-Mar. 2012 "Extreme Folding", Invited talk, Focus Session: Extreme Mechanics - Origami, Creasing, and Folding, American Physical Society March Meeting, Boston, MA.

Nov. 2011 "Computational Origami from Science to Sculpture", Invited talk, OrigaMIT Convention, Cambridge, MA.

Nov. 2011 "Algorithms Meet Art, Puzzles, and Magic", Invited talk, Computer Science Colloquium Series, University of Maryland, College Park, MD.

Oct. 2011 "Algorithms for Solving Rubik's Cube", Invited talk, 2nd Annual Martin Gardner Celebration of Mind, Boston, MA.

Oct. 2010 "Algorithms Meet Art, Puzzles, and Magic", Invited talk, Renaissance colloquium, Renaissance Technologies, East Setauket, NY.

July 2010 "On Re-writing the Order and Border of Biomedicine: The Nano-Looking Glass", Invited talk, NanoGagliato, Gagliato, Italy.

July 2010 "On Mathematical Nanomedicine", Invited talk, NanoGagliato, Gagliato, Italy.

July 2010 "Computational Origami from Science to Sculpture", Invited talk, Huamin Primary School, Singapore.

July 2010 "Algorithms Meet Art, Puzzles, and Magic", Invited talk, Department of Mathematics, National University of Singapore, Singapore.

Mar. 2010 "Puzzling Ciphers: Origami Mazes & Elastic Letters", Invited talk, Gathering for Gardner 9, Atlanta, GA.

Mar. 2010 "New Models of Computation", Invited talk, Seminar on Data Structures, Schloss Dagstuhl, Wadern, Germany.

Feb. 2010 "Bidimensionality", Invited talk, Graph Theory Meeting, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany.

Jan. 2010 "Folding Matter", Invited talk, Department of Nanomedicine and Biomedical Engineering, University of Texas Health Science Center, Houston, TX.

Jan. 2010 "Computational Origami from Science to Sculpture", Invited talk, MAA Invited Paper Session on The Mathematics of Origami, Joint Mathematics Meetings of the American Mathematical Society and Mathematical Association of America, San Francisco, CA.

Jan. 2010 "Mathematics Is Art", Invited talk, MAA Session on Arts and Mathematics, I, Joint Mathematics Meetings of the American Mathematical Society and Mathematical Association of America, San Francisco, CA.

Jan. 2010 "Algorithms Meet Art, Puzzles, and Magic", Invited talk, Northwestern University, Chicago, IL.

Dec. 2009 "Overview of Bidimensionality", Invited talk, Seminar on Parameterized Complexity and Approximation Algorithms, Schloss Dagstuhl, Wadern, Germany.

Sept. 2009 "Computational Origami from Science to Sculpture", Invited talk, Session on "From Flapping Birds to Space Telescopes: The Modern Science of Origami", British Science Festival, Guildford, England.

Sept. 2009 "Computational Origami from Science to Sculpture", Invited talk, British Origami Society Autumn Convention, Winchester, England.

Aug. 2009 "The Theory and Practice of Origami", Invited talk, 5th International Fab Lab Forum and Symposium on Digital Fabrication.

Feb. 2009 "Discussant", Invited talk, Mathematics of Origami: From the Joys of Recreation to the Frontiers of Research, Annual Meeting of the American Association for Advancement of Science, Chicago, IL.

Mar. 2008 "Hinged Dissections and Coin-Flipping Magic", Invited talk, Gathering for Gardner 8, Atlanta, GA.

Dec. 2007 "Permuting Polygons" (presented with Stefan Langerman), Invited talk, Japan Advanced Institute of Science and Technology, Ishikawa, Japan.

May 2006 "Linkage Folding: From Steam Engines to Proteins", Invited talk, Theory Colloquium, Massachusetts Institute of Technology, Cambridge, MA.

Apr. 2006 "Origami, Polyhedra, and Linkages: Folding with Algorithms", Invited talk, Université Catholique de Louvain, Louvain-la-Neuve, Belgium.

May 2005 "Algorithmic Time Travel", Invited talk, The Time Traveler Convention, Cambridge, MA.

May 2005 "Computational Origami", Invited talk, MIT-CSAIL Speaker Series, Museum of Science, Boston, MA.

Apr. 2005 "Origami as the Shape of Things to Come", Invited talk, Defense Science Research Council Spring Review, Washington, DC.

Mar. 2005 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Invited talk, Departmental Seminar Series, Department of Computer and Information Science, Polytechnic University, Brooklyn, NY.

Jan. 2005 "Origami, Linkages, and Polyhedra: Folding with Algorithms", Invited talk, Seminar der Theoretischen Informatik, ETH Zürich, Zürich, Switzerland.

Aug. 2004 "Approximation Algorithms for Embedding with Extra Information and Ordinal Relaxation", Invited talk, Microsoft Research, Redmond, WA.

Apr. 2004 "Picture-Hanging and Jigsaw Puzzles", Invited talk, Gathering for Gardner VI, Atlanta, GA.

Apr. 2004 "How to Mow Your Lawn or Find a Bridge along a River: Algorithms for Geometric Optimization", Invited talk, Session on New Trends/Emerging Ideas, INFORMS Conference on OR/MS Practice, Cambridge, MA.

Mar. 2004 "Logarithmic Lower Bounds in the Cell-Probe Model", Invited talk, Seminar on Data Structures, Schloss Dagstuhl, Wadern, Germany.

Mar. 2004 "Paper, Polyhedra, and Linkages: Folding with Algorithms", Invited talk, Geometry-Algebra-Singulaties-Combinatorics Seminar, Northeastern University, Boston, MA.

Jan. 2004 "Retroactive data structures", Invited talk, Workshop on Dynamic Algorithms and Applications, New Orleans, LA.

Nov. 2003 "Folding and Unfolding in Computational Geometry", Invited talk, Theoretical Computer Science/Discrete Mathematics Seminar, Institute for Advanced Study, Princeton, NJ.

Oct. 2003 "Open problems in cache-oblivious geometric data structures", Invited talk, Eindhoven-Carleton Workshop on Computational Geometry, Hilversum, Netherlands.

May 2003 "Online Searching with Turn Cost", Invited talk, DIMACS Workshop on Geometric Optimization, Piscataway, NJ.

Mar. 2003 "Instance-optimal algorithms for black-box curve manipulation", Invited talk, Seminar on Computational Geometry, Schloss Dagstuhl, Wadern, Germany.

Feb. 2003 "Frequency Estimation of Internet Packet Streams with Limited Space", Invited talk, Computer Science Colloquium, Boston University, Boston, MA.

Jan. 2003 "Algorithms for Estimating Trends in a Stream of Network Packets Using Little Memory", Invited talk, Special Session on Discrete Models, Joint Mathematics Meetings of the American Mathematical Society and Mathematical Association of America, Baltimore, MD.

Oct. 2002 "An Energy-Driven Approach to Linkage Unfolding", Invited talk, Special Session on Optimal Geometry of Curves and Surfaces, AMS Fall Central Section Meeting, Madison, WI.

Sept. 2002 "How Small Can You Make an Index of the Web?", Invited talk, Dipartimento di Informatica, University of Pisa, Pisa, Italy.

June 2002 "Competitive Facility Location: The Voronoi Game", Invited talk, Facility Location Optimization Workshop, Vancouver, Canada.

Apr. 2002 "Folding and Cutting Paper", Invited talk, Gathering for Gardner V, Atlanta, GA.

Apr. 2002 "Folding and Unfolding in Computational Geometry", Invited talk, College of Computing, Georgia Institute of Technology, Atlanta, GA.

Apr. 2002 "Folding and Unfolding in Computational Geometry", Invited talk, EECS Colloquium, Tufts University, Medford, MA.

Feb. 2002 "PushPush is PSPACE-complete", Invited talk, Seminar on Algorithmic Combinatorial Game Theory, Schloss Dagstuhl, Wadern, Germany.

Feb. 2002 "Cache-Oblivious Traversal of a Dynamic List", Invited talk, Seminar on Data Structures, Schloss Dagstuhl, Wadern, Germany.

Feb. 2002 "Recent Results in Computational Origami", Invited talk, Mathematics and Science of Origami: Visualize the Possibilities, Annual Meeting of the American Association for Advancement of Science, Boston, MA.

Feb. 2002 "Locked and Unlocked Polygonal Chains", Invited talk, Symposium on Robot Arm Manipulation: Geometric Challenges, Annual Meeting of the American Association for Advancement of Science, Boston, MA.

Dec. 2001 "History of Geometric Constructions by Paper Folding", Invited talk, Special Session on History of Mathematics, Canadian Mathematical Society Winter Meeting, Toronto, Canada.

Dec. 2001 "Folding and Unfolding in Computational Geometry", Invited talk, EAS Computer Science Colloquium Series, Harvard University, Cambridge, MA.

Dec. 2001 "Folding and Unfolding in Computational Geometry", Invited talk, Department of Computer Science, University of Toronto, Toronto, Canada.

Oct. 2001 "Playing Games with Algorithms: Algorithmic Combinatorial Game Theory", Invited talk, Combinatorics Seminar, Massachussets Institute of Technology.

Oct. 2001 "Folding and Unfolding in Computational Geometry", Invited talk, Applied Mathematics Colloquium, Massachussetts Institute of Technology.

Apr. 2001 "Infinitesimally Locked Linkages with Applications to Locked Trees", Invited talk, Special Session on Physical Knotting and Unknotting, AMS Spring Western Section Meeting, Las Vegas, NV.

Apr. 2001 "Folding and Unfolding Linkages, Paper, and Polyhedra", Invited talk, Michigan State University, East Lansing, MI.

Mar. 2001 "When Can You Fold a Map?", Invited talk, Seminar on Computational Geometry, Schloss Dagstuhl, Wadern, Germany.

Jan. 2001 "Cache-Oblivious Search Trees", Invited talk, Shannon Laboratory, AT&T Labs Research, Florham Park, NJ.

Jan. 2001 "Flipping Polygons", Invited talk, Department of Computer Science, State University of New York, Stony Brook, NY.

Dec. 2000 "Convexifying Polygons and Straightening Polygonal Arcs", Invited talk, Department of Information Science, University of Tokyo, Tokyo, Japan.

Dec. 2000 "Straightening Polygonal Arcs and Convexifying Polygonal Cycles", Invited talk, Department of Computer Science, Hong Kong University of Science and Technology, Hong Kong, China.

Oct. 2000 "Folding and Unfolding Linkages, Paper, and Polyhedra", Invited talk, Discrete Geometry and Graph Theory Seminar, Department of Mathematics, Cornell University, Ithaca, NY.

Oct. 2000 "Cutting Polygons with a Circular Saw", Invited talk, Department of Applied Mathematics and Statistics, State University of New York, Stony Brook, NY.

Sept. 2000 "Experience with Adaptive Set Intersection", Invited talk, Seminar on Experimental Algorithmics, Schloss Dagstuhl, Wadern, Germany.

Sept. 2000 "Minimum-Turn Milling", Invited talk, Special Session on Discrete and Applied Geometry, AMS Fall Central Section Meeting, Toronto, Canada.

Aug. 2000 "Minimum-Turn Milling", Invited talk, Session on Geometric Instances of Graph Optimization Problems, 17th International Symposium on Mathematical Programming, Atlanta, GA.

June 2000 "Convexifying Polygons and Straightening Polygonal Arcs", Invited talk, Minisymposium on Computational Geometry: Folding, 10th SIAM Conference on Discrete Mathematics, Minneapolis, MN.

May 2000 "Folding and Unfolding Linkages, Paper, and Polyhedra", Invited talk, Discrete Geometry Meeting, Mathematisches Forschungsinstitut Oberwolfach, Oberwolfach-Walke, Germany.

Apr. 2000 "Convexifying Polygons and Straightening Polygonal Arcs", Invited talk, Special Session on Discrete Geometry, 2000 AMS Spring Eastern Section Meeting #952, Lowell, MA.

Apr. 2000 "Convexifying Polygons and Straightening Polygonal Arcs", Invited talk, Algorithms seminar, Department of Computer Science, University at Stony Brook, Stony Brook, NY.

Mar. 2000 "Matchings in Cubic Planar Graphs", Invited talk, Mittagsseminars, Institut für Informatik, Freie Universität Berlin, Berlin, Germany.

Mar. 2000 "Folding and Unfolding Polyhedra", Invited talk, Informatik-Kolloquiums, Institut für Informatik, Freie Universität Berlin, Berlin, Germany.

Mar. 2000 "Convexifying Polygons and Straightening Polygonal Arcs", Invited talk, Tutte Colloquium, Department of Combinatorics and Optimization, University of Waterloo, Waterloo, Canada.

Mar. 2000 "Folding and Cutting Paper", Invited talk, Computational Geometry Lecture, Department of Computer Science, Smith College, Northampton, MA.

Mar. 2000 "PushPush is NP-hard in 2D", Invited talk, Research Seminar, Department of Computer Science, Smith College, Northampton, MA.

Feb. 2000 "Adaptive Set Intersections, Unions, and Differences", Invited talk, Seminar on Data Structures, Schloss Dagstuhl, Wadern, Germany.

Jan. 2000 "Convexifying Polygons and Straightening Polygonal Arcs", Invited talk, Geometry Seminar, Courant Institute of Mathematical Sciences, New York University, New York, NY.

Dec. 1999 "Collapsing Polyhedra", Invited talk, 4th Geometry Festival, Budapest, Hungary.

Dec. 1999 "Folding and Cutting Paper", Invited talk, Algorithmic Discrete Mathematics Graduate Program, Institut für Informatik, Freie Universität Berlin, Berlin, Germany.

Oct. 1999 "Folding and Unfolding Polyhedra", Invited talk, Department of Applied Mathematics and Statistics, University at Stony Brook, Stony Brook, NY.

Oct. 1999 "Straightening Chains and Convexifying Polygons", Invited talk, School of Computer Science, Carleton University, Ottawa, Canada.

June 1999 "Straightening Chains and Convexifying Polygons", Invited talk, Monte Verite Conference on Discrete and Computational Geometry, Ascona, Switzerland.

Apr. 1999 "Straightening Chains and Convexifying Polygons", Invited talk, Algorithms and Complexity Seminar, Department of Computer Science, University of Waterloo, Waterloo, Canada.

Apr. 1999 "Straightening Chains and Convexifying Polygons", Invited talk, Theory Seminar, Department of Computer Science, University of Illinois, Urbana-Champaign, IL.

Mar. 1999 "Straightening Chains and Convexifying Polygons", Invited talk, Department of Applied Mathematics and Statistics, State University of New York, Stony Brook, NY.

Mar. 1999 "Straightening Chains and Convexifying Polygons", Invited talk, Algorithms Seminar, School of Computer Science, McGill University, Montréal, Canada.

Nov. 1998 "Efficient Algorithms for Petersen's Matching Theorem", Invited talk, Tutte Colloquium, Department of Combinatorics and Optimization, University of Waterloo, Waterloo, Canada.

Nov. 1998 "Folding and Cutting Paper", Invited talk, Department of Applied Mathematics and Statistics, State University of New York, Stony Brook, NY.

Oct. 1998 "Folding and Cutting Paper", Invited talk, Algorithms Seminar, School of Computer Science, McGill University, Montréal, Canada.

May 1998 "Higher-Order Concurrency in Java", Invited talk, University of New Brunswick, Fredericton, Canada.

Mar. 1998 "Efficient Algorithms for Petersen's Matching Theorem", Invited talk, Data Structures Seminar, Schloss Dagstuhl, Wadern, Germany.

Jan. 1998 "Folding and Cutting Paper", Invited talk, Special Session on Mathematical Methods in Paper Folding, Joint Mathematics Meetings of the American Mathematical Society and Mathematical Association of America, Baltimore, MD.

Sept. 1997 "Higher-Order Concurrency in Java", Invited talk, Colloquia Series, Department of Computer Science, Rochester Institute of Technology, Rochester, NY.

Served as Referee

Journals: Nature, Journal of the ACM, SIAM Journal on Computing, SIAM Review, Journal of Algorithms, Algorithmica, Discrete & Computational Geometry, Computational Geometry: Theory and Applications, International Journal of Computational Geometry and Applications, Information Processing Letters, Discrete Mathematics, Discrete Applied Mathematics, Graphs and Combinatorics, Journal of Combinatorial Mathematics and Combinatorial Computing, INTEGERS: The Electronic Journal of Combinatorial Number Theory, Operations Research Letters, International Journal of Game Theory, Nordic Journal of Computing, Microprocessors and Microsystems.

Conferences: 48th, 50th, 51st Annual IEEE Symposium on Foundations of Computer Science (2007, 2009, 2010), 15th, 17th, 18th, 21st, 25th, 28th Annual ACM Symposium on Computational Geometry (1999, 2001, 2002, 2005, 2009, 2012), 35th–39th, 41st, 43rd ACM Symposium on Theory of Computing (2003–2007, 2009, 2011), 14th–21st, 23rd, 25th Annual ACM-SIAM Symposium on Discrete Algorithms (2003–2010, 2012, 2014), 37th–38th International Conference and Exhibition on Computer Graphics and Interactive Techniques (2010–2011), 10th, 12th, 13th Annual European Symposium on Algorithms (2002, 2004, 2005), 29th, 36th International Colloquium on Automata, Languages and Programming (2002, 2009), 37th International Conference and Exhibition on Computer Graphics and Interactive Techniques (2010), 25th ACM Symposium on Principles of Database Systems (2006), 7th International Workshop on Approximation Algorithms for Combinatorial Optimization Problems (2004), 9th Scandinavian Workshop on Algorithm Theory (2004), 19th Annual IEEE Conference on Computational Complexity (2004), Latin American Theoretical Informatics (2000, 2002, 2004, 2008), 6th Workshop on Algorithm Engineering and Experiments (2004), 22nd, 14th Annual International Symposium on Algorithms and Computation (2011, 2003), 6th, 9th, 11th Symposium on Graph Drawing (1998, 2001, 2003), 25th, 18th Canadian Conference on Computational Geometry (2013, 2006), Japan Conference on Discrete and Computational Geometry (1998, 2000, 2002, 2015), 15th Annual ACM Symposium on Parallel Algorithms and Architectures (2003), 22nd Annual Conference on the Foundations of Software Technology and Theoretical Computer Science (2002), 3rd International Conference on Computers and Games (2002), 3rd–4th Annual BRIDGES Conference: Mathematical Connections in Art, Music, and Science (2000–2001).

Book chapters: Akiyama-Chvátal Festschrift (Springer), Discrete and Computational Geometry: The Goodman-Pollack Festschrift (Springer), Physical Knots: Knotting, Linking, and Folding of Geometric

Objects in 3-space (American Mathematical Society), Experimental Algorithmics — the State of the Art (Lecture Notes in Computer Science, Springer-Verlag).

Books: A K Peters, Cambridge University Press.

Grants: National Science Foundation.

Awards

Bose Award for Excellence in Teaching, MIT, 2020
I. E. Block Community Lecturer, SIAM, 2020
MacVicar Fellow, MIT, 2019–2029
Teaching with Digital Technology Award, MIT, 2019
Burgess & Elizabeth Jamieson Award for Excellence in Teaching, MIT EECS, 2018
Honorary Doctor of Science degree, Bard College, 2017
ACM Fellow, 2016
Research and Development and Art Award, Vatican Giuseppe Sciacca Foundation, 2016
Rare Craft Fellowship Award, American Craft Council, 2016
Nerode Prize, European Association for Theoretical Computer Science and IPEC, 2015
University of Waterloo Faculty of Mathematics Young Alumni Achievement Medal, 2015
Steven and Renee Finn Innovation Fellow, MIT EECS, 2013–2014
Guggenheim Fellow, John Simon Guggenheim Memorial Foundation, 2013
Presburger Award, European Association for Theoretical Computer Science, 2013
Outstanding Student, Hall of Fame, Science Atlantic, 2012
Sculpture invited to permanent collection of Smithsonian American Art Museum, Washington, DC, 2011
George Pólya Lecturer, Mathematical Association of America, 2010–2012
Université Libre de Bruxelles Gold Medal, 2008
Featured in 56-minute documentary *Between the Folds* about origami, 2008
"Computational Origami" sculpture purchased for permanent collection of Museum of Modern Art (MoMA), New York, 2008
Earle Raymond Hedrick Lecturer, Mathematical Association of America, 2008
Katayanagi Emerging Leadership Prize, Carnegie Mellon University and Tokyo University of Technology, 2008
International Francqui Chair of Belgium and Francqui Gold Medal, 2007
Honorary Doctor of Laws degree, Dalhousie University, 2007
Alfred P. Sloan Research Fellowship, 2006–2008
Esther and Harold E. Edgerton Professor at MIT, 2005–2008
Harold E. Edgerton Faculty Achievement Award, Apr. 2005
DOE Early Career Principal Investigator Award, Sept. 2004
NSF CAREER Award, June 2004
Ruth and Joel Spira Award for Distinguished Teaching in EECS at MIT, May 2004
MacArthur Fellowship, Nov. 2003
NSERC Doctoral Prize and Silver Medal, Mar. 2003 (best PhD thesis & research in Canada, 1 of 4 awards)
Popular Science "Brilliant 10", Sept. 2003
Boston Magazine "40 Bostonians to Watch", June 2002
Governor General's Academic Gold Medal (best PhD at U. Waterloo), June 2002
NSF Mathematical Sciences Postdoctoral Research Fellowship, 2001 (declined)
NSERC Postdoctoral Fellowship, 2001 (declined)

Professional Memberships

Association for Computing Machinery (ACM)
ACM Special Interest Group on Algorithms and Computation Theory (SIGACT)
American Mathematical Society (AMS)
Canadian Mathematical Society (CMS)
Mathematical Association of America (MAA)
Society for Industrial and Applied Mathematics (SIAM)