

**Jeffrey C. Lagarias**

Department of Mathematics  
University of Michigan  
530 Church Street  
Ann Arbor, MI 48109-1043  
Voice: +1 (734) 763-1186 Fax: +1 (734) 763-0937  
email: lagarias@umich.edu  
<http://www.math.lsa.umich.edu/~lagarias>

**EDUCATION**

- **Ph.D.** in Mathematics, *Massachusetts Institute of Technology*, Cambridge, MA, 1974  
*Advisor:* Harold M. Stark. *Thesis:* The 4-part of the class group of a quadratic field.
- **S.B./ S.M.** in Mathematics, *Massachusetts Institute of Technology*, Cambridge, MA, 1972  
*Advisor:* Harold M. Stark. *Thesis:* Evaluation of certain character sums.

**PROFESSIONAL EXPERIENCE**

- Harold Mead Stark Distinguished University Professor of Mathematics, *Univ. of Michigan*, Ann Arbor, MI (9/2018–)
- Harold Mead Stark Collegiate Professor of Mathematics, *Univ. of Michigan*, Ann Arbor, MI (1/2016–8/2018)
- Professor, Mathematics, *Univ. of Michigan*, Ann Arbor, MI (9/2004–12/2015)
- Member of Technical Staff, *A. T. & T. Labs-Research*, Florham Park, NJ (1995 – 2004).  
[Official job title: “Technology Consultant”]
- Member of Technical Staff, *A. T. & T. Bell Laboratories*, Murray Hill, NJ (1974 – 1995).

**Visiting Positions**

- Chern Professor, *MSRI*, Berkeley, Program: “Hamiltonian systems, from topology to applications through analysis,” (Sept.-Dec. 2018)
- Clay Senior Scholar, Clay Foundation, *ICERM, Brown University*, Program: “Phase transitions and emergent properties”, (Jan.-April 2015).
- Research Professor, *MSRI*, Berkeley. Program: “Arithmetic Statistics”, (Jan.-May 2011)
- Visiting Professor, Physics, *University of Paris VII* (July 2002)
- Visiting Associate Professor, Computer Science, *Rutgers University*, New Brunswick, NJ (Spring 1984). [teaching: one course]

- Visiting Assistant Professor, Mathematics, *University of Maryland*, College Park, MD (1978–1979) [teaching: two courses/semester]

## RESEARCH INTERESTS

- Trained in number theory. Interests range across pure mathematics, applied mathematics, theoretical computer science, operations research, mathematical physics.
- Fields include: Algorithms and Computational Complexity, Cryptography, Discrete & Computational Geometry, Dynamical Systems, Linear Programming and Optimization, Low-Dimensional Topology, Mathematical Physics, Number Theory.

## HONORS AND AWARDS

- *Fellow*, Society for Industrial and Applied Mathematics (SIAM), 2014.
- *Fellow*, American Mathematical Society (AMS), 2012.
- *Fellow*, American Association for Advancement of Science (AAAS), 2003.
- *Simons Fellow in Mathematics*, 2018
- *Levi L. Conant Prize*, American Mathematical Society, 2015
- *Clay Senior Scholar*, Clay Foundation, ICERM, Brown University, Winter Term 2015.
- *Lester Ford Award*, Mathematical Association of America, 2007
- *Best Paper Award 2005*, International Society for Difference Equations, 2006.
- *Kavli Frontiers of Science Fellow*, 1996.
- *Lester Ford Award*, Mathematical Association of America, 1986
- *Putnam Fellow* (top 6), Putnam Examination, 1970.

## PLENARY TALKS (Abridged List)

- *American Mathematical Society, Invited Addresses:*

(1) “The arithmetic of the spheres,” Joint AMS/MAA Invited Address, MAA Mathfest, Washington DC, August 2015

(2) “From Apollonian Circle Packings to Fibonacci Numbers,” Erdős Memorial Lecture, AMS Meeting, University of Illinois at Urbana-Champaign, March 2009.

(3) “Computational Topology: The Complexity of Unknotting,” AMS National Meeting, San Diego, CA, Jan. 2002.

(4) “The Nonlinear Geometry of Linear Programming,” Joint AMS/MAA Invited Address, National Meeting, Atlanta, GA, Jan. 1990.

(5) “Finding Short Vectors in Lattices and Applications,” AMS Regional Meeting, Mobile, AL, March 1985.

- *Mathematical Association of America, Invited Addresses:*

(1) Hedrick Lectures: (i) “Mathematical Crystals and Quasicrystals”; (ii) “Tilings with One Tile”; (iii) “Apollonian Circle Packings”; MAA Mathfest, Albuquerque, NM, Aug 2005

(2) “The  $3X + 1$  Problem’.” MAA Mathfest, UCLA, Aug. 2000;

(3) MAA Pólya Lecturer 2012-2013.

- *London Math. Society, Invited Address:*

“From  $ABC$  to  $XYZ$ , or, Addition versus Multiplication,” London, UK, March 2013.

- *British Mathematical Colloquium, Invited Address:*

“Packing space with regular tetrahedra,” Edinburgh, Scotland, April 2010

- *New Zealand Mathematical Society, Invited Address:* “Mathematical Crystals and Quasicrystals,” Massey University, Palmerston North, New Zealand, June 1994.

- *Australian Mathematical Society, Invited Address:* “Number Theory Zeta Functions and Dynamical Zeta Functions,” University of Adelaide, Adelaide, South Australia, July 1994.

- *CBMS Lectures* (Principal speaker), “Number Theory and Dynamical Systems.” Fresno State Univ., August 1990.

- *IBM Lectures*, Swarthmore College, 1984.

## SUPERVISION AND TRAINING

- *Graduate Students (Michigan):*

Jonathan Bober (Ph.D. 2009)

Leo Goldmakher (Ph.D. 2009) (joint with main advisor K. Soundararajan)

Elizabeth R. Chen (Ph.D. 2010);

Benjamin L. Weiss (Ph.D. 2011) (joint with main advisor Michael Zieve)

Andrey M. Mishchenko (Ph.D. 2012)

Julian H. Rosen (Ph.D. 2013)

William C. Abram (Ph.D. 2013) (joint with main advisor Igor Kriz)

Harry Altman (Ph.D. 2014)

Hieu Ngo (Ph.D. 2014)

Gene S. Kopp (Ph.D. 2017)

Corey Everlove (Ph.D. 2018)

Trevor Hyde (Ph.D. 2019) (joint with Michael Zieve)

Bob Lutz (Ph.D. 2019)

David Harry Richman (Ph.D. 2020) (joint with main advisor David Speyer)

Lara Du (Ph.D. 2020) (joint with Trevor Wooley (Purdue) and Mattias Jonsson)

*Current Graduate Students:* Wijit Yangjit

- *REU Students (Michigan)* Zachary Maddock (2007), Timothy Heath (2008), Will Abram (2009), David Montague (2010), Harsh Mehta (2013), Yusheng Luo (2013), Jaeyoon Kim (2018-2019)

- *AT&T Summer Interns*: Jeremy Primer, James Propp, David Grabiner, Eric Rains, David Moews, Bjorn Poonen, Christopher Skinner, K. Soundararajan, Kiran S. Kedlaya, Manjul Bhargava, Jade P. Vinson, Nicholas Eriksson
- *AT&T CRFP Fellows*: David S. Romano (Univ. California- Berkeley, Ph.D. 2000)
- *AT&T GRPW Fellows*: Amanda Galtman (Stanford University)

## SERVICE

- Served on various AMS and MAA committees, and the MAA Governing Board. Served on Mathematical Reviews advisory board. Served on committees for the US National Academy of Sciences.
- Served on the editorial board of various journals. Serving at present: *Advances in Geometry*, *Advances in Applied Mathematics*, *Discrete & Computational Geometry*, *Journal of Number Theory*, *Michigan Mathematics Journal*
- Served on panels for NSF and NSA grants; have reviewed proposals for granting agencies of Austria, Canada, Chile, Israel, The Netherlands, Sweden.
- Served on program committees for theoretical computer science conferences: STOC, FOCS. Edited special issue of JCSS for best papers at 26-th IEEE FOCS Conference, 1985.
- Organized AMS Summer Research Conference on Mathematical Optimization.

## GRANTS

Continuously funded since in academia.

- PI for NSF Grant DMS-0500555. (\$123,780)
- PI for NSF Grant DMS-0801029. (\$201,105)
- PI for NSF Grant DMS-1101373. (\$300,000)
- PI for NSF Grant DMS-1401224. (\$321,885)
- PI for NSF Grant DMS-1701576. (\$350,000)
- Simons Fellow in Mathematics (2018) (\$110,000)

## PUBLICATIONS

3 books (edited), 1 book chapter, over 200 papers in peer-reviewed journals, 20 conference papers, 10 expository and survey papers, 5 patents. (See publication list)