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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

- Professor, Mathematics, *Univ. of Michigan*, Ann Arbor, MI (2004–present)
- 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

- Visiting Professor, Mathematics, *Stanford University* (Fall 2010)
- Visiting Professor, Physics, *University of Paris VII* (July 2002)
- Visiting Associate Professor, Computer Science, *Rutgers University*, New Brunswick, NJ (Spring 1984).
- Visiting Assistant Professor, Mathematics, *University of Maryland*, College Park, MD (1978–1979).

RESEARCH INTERESTS

- Trained in number theory, have worked on topics in pure and applied mathematics, theoretical computer science, operations research
- 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

- *Lester Ford Award*, Mathematical Association of America, 2007 (for paper in American Math. Monthly “Wild and Wooley Numbers”).
- *Best Paper Award 2005*, International Society for Difference Equations, 2006.
- *Fellow*, American Association for Advancement of Science (AAAS), 2003.
- *Lester Ford Award*, Mathematical Association of America, 1986 (for paper in American Math. Monthly “The $3x+1$ problem and its generalizations”).
- *Putnam Fellow* (top 6), Putnam Examination, 1970.

PLENARY TALKS

- *American Mathematical Society, Invited Addresses:*

(1) Erdős Lecture: “From Apollonian Circle Packings to Fibonacci Numbers,” AMS Meeting #1047, Urbana-Champaign, IL, March 2009;

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

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

(4) “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;

- *MAA Polya Lecturer:* 2011-2012.

- *British Mathematical Colloquium, Invited Address:* “Packing Space with Regular Tetrahedra,” Edinburgh, SCOTLAND, April 2010.

- *26èmes Journées Arithmétiques, Invited Address:*, “Smooth solutions of the equation $A+B=C$,” Saint Etienne, FRANCE, June 2009.

- *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, AUSTRALIA, July 1994.

- *Grosswald Lectures*, Temple University, Philadelphia, PA, March 2002
- *CBMS Lectures* (Principal speaker), “Number Theory and Dynamical Systems”, Fresno State Univ., August 1990.
- *IBM Lectures*, Swarthmore College, 1984.

SUPERVISION AND TRAINING

- *Graduate Students-Univ. Michigan*: Jonathan Bober (PhD. July 2009); Leo Goldmakher (PhD. July 2009), Elizabeth Chen (PhD. March 2010)
Current Graduate Students: Andrey Mischenko, Benjamin Weiss, Julian Rosen.
- *REU Students-Univ. Michigan*: Zachary Maddock (2007); Timothy Heath (2008); Will Abram (2009), David Montague (2010)
- *AT&T Summer Interns*: Jeremy Primer, James Propp, David Grabiner, Eric Rains, David Moews, Chris Skinner, Kannan Soundararajan, Kirin Kedlaya, Manjoul Bhargava, 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 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, Netherlands, and Israel.
- 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.

PUBLICATIONS

3 books (edited), 1 book chapter, over 150 papers in refereed journals, 20 conference papers, 10 expository and survey papers, 5 patents. (See publication list.)