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Education

- Doctor of Philosophy in mathematics, University of Chicago, June 2004; dissertation The Mahler Measure of Parametrizable Polynomials overseen by Fernando R. Villegas, departmental advisor was Spencer Bloch.
- Master of Science in mathematics, University of Chicago, August 1994.
- Bachelor of Arts with math major, physics minor, highest honors, Swarthmore College, May 1993.

Teaching Experience and Institutional Affiliations

- 2012 Associate Professor of Mathematics, St. Lawrence University, NY. Courses taught include Integral Calculus, Multivariable Calculus, Bridge to Higher Mathematics, College Geometry, Number Theory, Problem Solving, Intro to Computer Programming and a senior seminar on combinatorics.
- 2007–2012 Assistant Professor of Mathematics, St. Lawrence University, NY.
- 2005–2007 Math department visitor, Stanford University, CA. During this time I conducted mathematical research, initiated programs such as the Stanford Math Circle and The Teacher’s Circle, assembled a book resource for math circle organizers on behalf of MSRI, and coordinated the Mandelbrot Competition.
- 2003–2004 Visiting Assistant Professor in mathematics, Wellesley College, MA. I taught several courses in Calculus I, Calculus II, and Calculus IIA over a three-semester period.
- 2002–2003 Mathematics Instructor, Phillips Academy, Andover, MA. I conducted classes in Pre-Calculus, BC Calculus, Combinatorics, and led an independent study on game theory.
- 2001–2004 Graduate student, University of Chicago, IL. While residing and teaching in the Boston, MA area. I completed a doctoral program begun several years earlier at Chicago.
- 1996–2001 Mathematics Teacher, The Roxbury Latin School, West Roxbury, MA. I taught Algebra, Geometry, Pre-Calculus, BC Calculus, Linear Algebra, and Vector Calculus.
- 1995–1996 Adjunct Instructor, Northeastern University, MA. I taught Calculus and Differential Equations.

Publications

- On the Divisibility of Fibonacci Sequences by Primes of Index Two, submitted to the *Fibonacci Quarterly*.
- Jacobi Sum Matrices, *American Mathematical Monthly*, **119**(2) (2012) 100–115.
- Balanced Partitions, *Ramanujan Journal*, **23**(1) (2010) 297–306.
- *Bridge to Higher Mathematics*, completed in 2010, available at www.lulu.com and www.amazon.com.
- *Circle in a Box*, American Mathematical Society, Providence, RI, 2009.
- Expected Value Road Trip, *Mathematical Intelligencer*, **30**(2) (2008) 17–18.
- The Mahler Measure of Parametrizable Polynomials, *Journal of Number Theory*, **128**(8) (2008) 2231–2250.
- A Formula for the Mahler Measure of $axy+bx+cy+d$, *Journal of Number Theory*, **100**(1) (2003) 184–202.
- Mathematics as a Liberal Art, *Journal of Education*, **183**(3) (2002) 7–15.
- *Mandelbrot Morsels*, Greater Testing Concepts, Potsdam, NY, 2010.
- *The First Five Years*, Greater Testing Concepts, Cambridge, MA, 2004.
- *The Mandelbrot Problem Book*, Greater Testing Concepts, Cambridge, MA, 2002.

Selected Presentations

- “Greater Than the Sum of its Parts,” talk given August 5, 2011 as an Alder Award recipient at MathFest, Lexington, KY.
- “King Solomon on Teaching Math,” October 24, 2009, Randolph Lecture at Seaway Section Meeting, SUNY Fredonia, NY.
- “Everyone Loves a Bijection,” December 7, 2008, Combinatory Analysis 2008 Conference, Penn State University, State College, PA.
- “Level Three Arithmetic Graph Sums,” January 9, 2008, SIAM mini-symposium on graph coloring, Joint Mathematical Meetings, San Diego, CA.
- “The Mahler Measure of Parametrizable Polynomials,” June 2, 2005, International Conference on Mahler Measure, Luminy Conference Center, Marseille, France.

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- “Computing Mahler Measure with a Cyclic Quadrilateral,” October 27, 2003, Brandeis University, MA, colloquium talk, and April 28, 2003, The Many Aspects of Mahler Measure conference, Banff, Alberta.
- “Mathematics as a Liberal Art,” May 2, 2003, invited speaker, conference on The Power of the Liberal Arts in the Classroom, Boston University, MA.

Professional Activities

- Current chair for Special Interest Group of the MAA on Math Circles for Students and Teachers.
- Organizer for Circle on the Road workshop with David Auckly (MSRI), March 18–20, 2011, sponsored by MSRI, held at University of Houston, TX.
- Collaborating editor, Problems Column, American Mathematical Monthly since September 2008.
- Organized the Great Circles 2009 Conference held April 16–17 at MSRI in Berkeley, CA jointly with Kathleen O’Hara (MSRI), Matthias Beck (SFSU) and Amanda Serenevy.
- Organized a mini-course at MathFest 2008, in Madison, WI, entitled “How to Run a Successful Math Circle” jointly with Tatiana Shubin (SJSU) and Matthias Beck (SFSU).

Related Professional Experience

Circle-in-a-Box Under the auspices of the Mathematical Sciences Research Institute (MSRI) I developed a resource for college and university faculty members who wish to launch a math circle. This handbook provides advice with respect to organizing, advertising, and sustaining a math circle. It also contains a dozen fully developed sample math circle talks with detailed presentation notes to aid speakers in preparing for sessions. As part of this project I spent a week in Russia during November 2006 with an observational group assembled by MSRI to meet with some of their most outstanding mathematicians and educators. A PDF file of the book is available at <http://www.mathcircles.org>; selected excerpts are also featured at this site. The book was published by the AMS in 2009 as the second in their new Mathematical Circles Library series.

The Teacher’s Circle I served as the executive director of the board that brought this program into existence. Our efforts culminated in a week-long workshop offered to middle school math teachers August 14–18, 2006 at the American Institute of Mathematics (AIM), who cosponsored the event along with MSRI. Our goal was to equip educators in the San Francisco Bay area with a problem-solving approach to classroom instruction and to renew their interest in mathematics. This program continues to thrive; for recent activities please visit <http://www.theteacherscircle.org/>.

Stanford Math Circle In September 2005 I launched this weekly two-hour mathematical enrichment event for middle and high school students held on Sunday afternoons at Stanford. I handled all administrative details in addition to leading half of the classes, which drew between 20 and 40 students each week. I have developed many original talks for this and other math circles in the area, including “Geometric Mad-Libs,” “Problem-Solving for Polyglots,” “Sneaky Segments,” and “Those Three Little Dots.” More information can be found at the web site I created, <http://www.stanfordmathcircle.org/>.

The Mandelbrot Competition I am the sole proprietor of Greater Testing Concepts, which produces this math contest for high school students. Over 200 schools from across the United States and several schools from abroad are currently enrolled. I oversee all aspects of the competition, including test composition, web site maintenance at <http://www.mandelbrot.org/>, and contest administration. My goal is to introduce students to exciting topics outside the normal curriculum and engage them in mathematical writing. I also write questions for and serve on the committee that produces the US Math Olympiad (USAMO). An original problem of mine has been chosen for this prestigious contest in each of the years 2007, 2008, 2009 and 2011.

Honors and Awards

- Recipient of Alder Award for Distinguished Teaching by a Beginning College or University Mathematics Faculty Member, granted by the Mathematical Association of America (MAA), 2011.
- Edyth May Sliffe award for excellence in teaching mathematics, granted by MAA in 2000.
- National Science Foundation Scholar, 1993-1995.
- McCormick Fellow at University of Chicago, 1993-1995.
- Barry Goldwater Scholarship while at Swarthmore College, 1991-1993.
- Ranking individual performance (top 15) on the Putnam Competition, 1990 and 1992.
- Silver medal at the 1989 International Mathematical Olympiad in West Germany as part of the US team.

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REFERENCES

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