

Education

- **Georgia Institute of Technology** Atlanta, GA
Ph.D. Algorithms, Combinatorics and Optimization 2006 - present
 - Advisor: Robin Thomas, Thesis: Some Graph Coloring Results on Surfaces
 - Relevant coursework includes Design and Analysis of Algorithms, Randomized Algorithms, Graph Algorithms, Approximation Algorithms, Topics in Graph Theory, Combinatorics, Geometry and Topology, Topics in Partially-Ordered Sets, Advanced Classical Probability Theory, Theory of Linear Inequalities, Advanced Combinatorial Optimization
- **University of Cambridge** Cambridge, UK
Certificate of Advanced Study in Mathematics 2005 - 2006
 - Graduated with Merit
 - Coursework included: Mathematics of Operational Research, Advanced Financial Models, Combinatorics, Probabilistic Combinatorics, Survival Analysis, Applied Statistics, Analytic Number Theory, Quasirandomness
 - Wrote essay about Graphs on Surfaces advised by Andrew Thomason
- **Harvey Mudd College** Claremont, CA
B. S. Mathematics 2001 - 2005
 - Graduated with high distinction with honors in Mathematics and the Humanities and Social Sciences.
 - GPA 3.957, humanities concentration in Economics, 4-year varsity tennis letterwinner.
 - Relevant courses: Math Analysis I and II, Putnam Problem Seminar, Discrete Mathematics, Abstract Algebra I and II, Complex Variables, Graph Theory, Probability, Topology, Applied Analysis (PDE's), Integer Partitions, Geometric Combinatorics, Social Choice and Decision Making.
- **Owen J. Roberts High School** Pottstown, PA
High School 1997 - 2001
 - Valedictorian, GPA 101.43%, SAT: 1590

Publications (available at www.carlyerger.com)

- A. Benjamin and C. Yerger, A combinatorial interpretation of the wheel graph, *Bull. Inst. Combin. Appl.* **48** (2006), 53–62. 47 (2006), 37–42.
- A. Benjamin, N. Cameron, J. Quinn, C. Yerger, Catalan determinants A combinatorial approach, to appear, *Applications of Fibonacci Numbers* **11**, (William Webb, ed.), Utilitas Mathematica Publishing Co., Winnipeg, 2009.
- N. Chenette, L. Postle, N. Streib, R. Thomas, C. Yerger, Five coloring graphs on the Klein bottle, submitted, *Journal of Combinatorial Theory, Series B*.
- J. Gardner, A. Godbole, A. Tegui, A. Vuong, N. Watson and C. Yerger, Domination cover pebbling: Graph Families, *J. Combin. Math. Combin. Comput.* **64** (2008), 255–271.

- A. Godbole, N. Watson and C. Yerger, Threshold and complexity results for the cover pebbling game, *Discrete Mathematics*, **309** (2009), 3609-3624.
- K. Kawarabayashi, C. Yerger. A short proof for color-critical graphs on surfaces, manuscript.
- L. Postle, N. Streib, C. Yerger, Pebbling graphs of diameter three and four, in preparation.
- A. Shiu and C. Yerger, Rabbits Redux: The cube root of four and the Fibonacci sequence, *Mathematical Spectrum* (2009).
- N. Watson and C. Yerger, Cover pebbling numbers and bounds for certain families of graphs, *Bull. Inst. Combin. Appl.* **48** (2006), 53-62.
- N. Watson and C. Yerger, Domination Cover Pebbling: Structural Results, *J. Combin. Math. Combin. Comput.* (2009), to appear.
- C. Yerger, Monochromatic and zero-sum sets of nondecreasing diameter, manuscript, available on ArXiv.

Refereed Conference Proceedings (available at www.carlyerger.com)

- N. Chenette, K. Kawarabayashi, D. Kral, J. Kyncl, B. Lidicky, L. Postle, N. Streib, R. Thomas and C. Yerger. Six-critical graphs on the Klein bottle, *Electronic Notes in Discrete Mathematics* **31** (2008), 235-240.
- A. Godbole, N. Watson, and C. Yerger, Cover pebbling thresholds for the complete graph, *Electronic Notes in Discrete Mathematics*, **22** (2005) 301-304.
- L. Postle, N. Streib, C. Yerger, Pebbling graphs of diameter three and four, *Electronic Notes in Discrete Mathematics* **34** (1 August 2009) 21-28, European Conference on Combinatorics, Graph Theory and Applications (EuroComb 2009).

Awards, Scholarships and Fellowships

- Georgia Tech School of Mathematics John Festa Fellowship (\$900) in May 2009. This award is based upon scholarship and leadership.
- First place oral presentation, Georgia Tech Graduate Student Research Conference, (\$75)
- Best student speaker prize (\$200) from my presentation "Five-coloring graphs on the Klein bottle" in March 2008 at the SIAM southeastern section conference, Orlando, FL.
- For the 2007-2008 academic year, I was elected Graduate Student Body Executive Vice President.
- Presidential Fellowship at the Georgia Institute of Technology for September 2006- June 2010. (\$5500 per year supplement)
- In April 2005, I was selected to receive a National Science Foundation Graduate Research Fellowship, offering \$30,000 of financial support for graduate study annually for three years beginning Fall 2006.
- In March 2005, I was awarded a Winston Churchill Foundation Scholarship, that fully supported my studies at Cambridge University during the 2005-2006 academic year.

- Barry M. Goldwater scholarship in 2003, providing me with \$7500 of financial support for my junior and senior years of college.
- Interview nominee for a Marshall Scholarship in the Los Angeles Region, 2005.
- Pennsylvania State Finalist for the Rhodes Scholarship, 2005.
- Harvey Mudd College Nova Scholarship, a four-year half-tuition merit scholarship.
- Numerous other scholarships, such as the James R. Hoffa Memorial Scholarship (\$10,000), AAA Safety Patrol Scholarship (\$4000), Marjorie A. Maack Memorial Scholarship (\$600), Pennsylvania Elks State Scholarship (\$500) and the Comcast Leaders of Tomorrow Scholarship (\$1000).
- Intercollegiate Tennis Association Scholar-Athlete, NCAA Division III, 2003-2004 and 2004-2005.
- Mentioned along with Arthur Benjamin, in George Andrews' *Integer Partitions* textbook for helping to edit a draft of the text.

Teaching Experience

- **Lead Instructor** Math 3012: Applied Combinatorics
Student evaluation in top third in College of Sciences May 2009 - July 2009
- **Took CETL 8803: Fundamentals of Teaching and Learning** Georgia Tech
Designed and planned entire course in this class Jan. 2009 - May 2009
- **Teaching Assistant** Math 1711: Finite Math
Graduate Teaching Assistant Aug 2008 - Dec 2008
- **TA/ Counselor** Pennsylvania Governor's School for the Sciences
Carnegie Mellon University June 2005 - July 2005
Assisted in teaching, grading and tutoring courses in discrete mathematics and problem solving.
Advised a group of students in a team project involving mathematics and social anthropology.
- **Junior Staff** Hampshire College Summer Studies in Mathematics
Lectured daily to class of 15 gifted HS students June 2002 - Aug. 2002
Lectured around an hour per day to a class of fifteen gifted high school students. Taught an 8-lecture mini-course (1.5 hours per lecture) on Fibonacci identities, sums and combinatorial proofs.
- **Private Tutor** Varies
Tutored Math and Science to Middle School through College Students 2000 - Present

Presentations (in chronological order)

- *Solution to American Mathematical Monthly problem 10901.* Southern California AMS/MAA meeting's poster session, Claremont, CA, Spring 2003
- *Monochromatic and zero-sum sets of nondecreasing diameter,* Hampshire College Summer Studies in Mathematics, Amherst, MA, Summer 2003.
- *Monochromatic and zero-sum sets of nondecreasing diameter,* Incoming Freshmen On-Campus Day, Harvey Mudd College, Claremont, CA, Spring 2004.

- *Domination cover pebbling*, National AMS/MAA meetings, Atlanta, GA, Combinatorics I session, Winter 2004.
- *Probabilistic and combinatorial results concerning deep graphs*, National AMS/MAA meetings, Atlanta, GA, Combinatorics IV session, Winter 2004.
- *Cover pebbling thresholds for the complete graph*, International Colloquium of Graph Theory, Heyers, France, September 2005.
- *Extensions of graph pebbling*, Combinatorics Seminar, Georgia Institute of Technology, Atlanta, GA, January 2006.
- *Six-regular graphs on the Klein bottle*, Graph Theory Seminar, Georgia Tech, Atlanta, GA, Jan 17, 2008.
- *Pebbling graphs of diameter three*, Georgia Tech Graduate Student Government Research Symposium, Atlanta, GA, March 2008.
- *Pebbling graphs of diameter three*, Southeastern Conference on Graph Theory, Combinatorics and Computing, Boca Raton, FL, March 5, 2008.
- *Five-coloring graphs on the Klein bottle*, SIAM-Southeastern Section Conference, Special Session on Graph Theory, University of Central Florida, Orlando, FL, March 16, 2008, invited presentation.
- *Pebbling graphs of diameter three*, Poster Presentation, New Directions in Algorithms, Combinatorics and Optimization, Georgia Tech, Atlanta, GA, May 2008.
- *Pebbling graphs of diameter three*, Cumberland Conference, honoring Mike Plummer, Vanderbilt University, May 17, 2008.
- *Five-coloring graphs on the Klein bottle*, Netherlands Workshop on Graphs and Matroids, Sittard, Netherlands, July 20, 2008, invited presentation.
- *Pebbling graphs of diameter four*, Georgia Tech Graph Theory Seminar, Atlanta, GA, December 2008.
- *Five-coloring graphs on the Klein bottle*, Georgia Tech Graduate Student Government Research Symposium, Atlanta, GA, March 2009.
- *Research Proposal: Steinberg's conjecture and its extensions*, ACO Program Research Proposal Presentation, Georgia Tech, Atlanta, GA, May 2009.
- *Pebbling Graphs of Diameter Three and Four*, European Conference on Combinatorics, Graph Theory and Applications (EuroComb 2009), University of Bordeaux, Bordeaux, France, September 2009, accepted for presentation by program committee.

Other Research Experience

- **Internship** National Institute for Informatics, Advisor: Ken-ichi Kawarabayashi
Tokyo, Japan Aug. 2009-Sept. 2009
- **REU Program** East Tennessee State University, Johnson City, TN
Probability and Graph Theory June 2004-July 2004
- **REU Program** University of Idaho, Moscow, ID
Combinatorics June 2003-July 2003

Academic Service

- Referee for Discrete Mathematics, Ars Combinatoria, Discrete Applied Mathematics, Utilitas Mathematica, Methodology and Computing in Applied Probability.
- Georgia Tech Graduate Student Government, Executive Vice President 2007-2008 academic year. Presided over weekly senate meetings, student government at Georgia Tech works with a student activity fee budget totaling 3-4 million dollars, responsible for picnic with over 1700 graduate students attending
- Member of Georgia Tech Churchill Scholarship Nominating Committee 2006-present.
- Member of SIAM and MAA since 2003, and have been a member of the AMS since 2005.
- Member of the Institute for Combinatorics and its Applications since 2005.
- Organizer, Georgia Tech High School Math Competition (am responsible for writing the seven tests administered during the competition, which involves over 400 high school students), 2008-present. I assisted in other capacities in 2006 and 2007.
- Georgia Tech Graduate Student Government, Senator, Spring 2007, Fall 2008-present.
- Member, Georgia Tech Technology Fee Advisory Committee (rates proposals for an approximately 5 million dollar technology fee fund), 2007-present.
- Member, Georgia Tech Mandatory Student Fee Advisory Committee, 2007-2009.
- Grader and Coach, Georgia ARML (American Regions Math League) 2009-2010.

Conferences Attended (in chronological order)

- Southern California AMS/MAA meeting's poster session, Claremont, CA, Spring 2003.
- National AMS/MAA meetings, Atlanta, GA, Winter 2004.
- Euler Institute for Discrete Mathematics and its Applications, minicourse on structural graph theory, Technische Universiteit Eindhoven, The Netherlands, June 2005.
- International Colloquium of Graph Theory, Heyers, France, September 2005.
- Banff International Research Station for Mathematical Innovation and Discovery (BIRS), Topological graph theory and crossing numbers, Banff, Canada October 2006.
- ADONET-CIRM School on Graphs and Algorithms. Levico Terme, Trento, Italy, October 2007.
- Georgia Tech Graduate Student Government Research Symposium, Atlanta, GA, March 2008.
- Southeastern Conference on Graph Theory, Combinatorics and Computing, Boca Raton, FL, March 2008.
- SIAM-Southeastern Section Conference, Special Session on Graph Theory, University of Central Florida, Orlando, FL, March 2008.

- Cumberland Conference, honoring Mike Plummer, Vanderbilt University, May 2008.
- New Directions in Algorithms, Combinatorics and Optimization, a conference at Georgia Tech honoring the 65th birthday of Tom Trotter, Georgia Tech, Atlanta, GA, May 2008.
- Netherlands Workshop on Graphs and Matroids, Sittard, Netherlands, July 2008.
- Banff International Research Station for Mathematical Innovation and Discovery (BIRS), Banff, Canada, Graph Minors, October 2008.
- Georgia Tech Graduate Student Government Research Symposium, Atlanta, GA, March 2009.
- EuroComb 2009: European Conference on Combinatorics, Graph Theory and Applications, Bordeaux, France, September 2009.

Other Activities

- **Tennis:** During the 2005-2006 academic year, I played for the Cambridge University men's tennis second team. I played at positions ranging from #1 to #4. From 2001-2005, I played for the Claremont-Mudd-Scripps Stags men's tennis team. During 2003-2004, the team was ranked as high as #2 nationally in NCAA Division III, with an undefeated record during the regular season within Division III. While on the team, I participated mostly as a reserve, but amassed a career league record of 9-1. In the 2004-2005 academic year, I founded the Claremont Colleges Tennis Club as a way for students to continue to play tennis even if they do not want to commit to a varsity team.
- **Bowling:** I am the president and co-founder of the Georgia Tech Bowling Club. My average is approximately 215. I am also a United States Bowling Congress Bronze certified coach. My high three-game series is 792, and my highest sanctioned game is 290. (However, I have bowled two perfect games outside sanctioned competition.) While in high school, I earned over \$3000 in scholarship winnings.
- **Korfball:** During the 2005-2006 academic year, I played for the Cambridge University Korfball Team. For my participation in the korfball Varsity Match against Oxford, I earned a half-blue. In addition, during Summer 2006, I played for the United States Korfball Team at the Commonwealth and Friends Tournament in London and had six international appearances. Currently, I serve on the United States Korfball Federation National Executive Board and play for the US National Korfball Team.
- **Duplicate Bridge:** I was a co-president of Harvey Mudd College's Bridge Club for the 2004-2005 academic year and was responsible for the day-to-day organization of the club. After the local community bridge club lost their lease this September, the HMC bridge club has been hosting weekly sanctioned bridge games for the community. I have played bridge since 2001 and currently play in bridge tournaments in the Atlanta area.
- **Music:** I played drum set for Professor Robert Keller's Jazz Ensemble at Harvey Mudd and have been part of the group from Spring 2004 to Spring 2005. In addition, I played drums and percussion through high school.
- **Volunteer Work:** Since 1995, I have been a bingo volunteer at the North Coventry Fire Company, Pottstown, PA. Since 1999, I have worked intermittently as a bingo caller. I also, when home, volunteer at the fire company's annual carnival.