Stephen J. Young

Department of Mathematics
University of California, San Diego
9800 Gilman Drive # 0112
La Jolla, CA 92093-0112
phone: (858)-534-5859, fax: (858) 534-5273

4346 Crater Lake Way, Apt. E
Oceanside, CA 92058
(404) 558-0188
s7young@math.ucsd.edu
http://www.math.ucsd.edu/~s7young

EDUCATION

Ph.D. Algorithms, Combinatorics and Optimization December 2008
Georgia Institute of Technology
Thesis: *Random Dot Product Graphs: A Flexible Model for Complex Networks*
Advisor: Milena Mihail, College of Computing

M.S. Operations Research May 2008
Georgia Institute of Technology

M.S. Applied Mathematics May 2005
Georgia Institute of Technology

B.S. Mathematics May 2002
Rose-Hulman Institute of Technology
Graduated *magna cum laude* with minors in German and Computer Science
Technical Translator Certificate in German

PUBLICATIONS

A characterization of partially ordered sets with linear discrepancy equal to 2. Order, 24(3):139–153, 2007 (WITH D. M. HOWARD, M. T. KELLER).

Random dot product graph models for social networks. in Algorithms and models for the web-graph, vol. 4863 of Lecture Notes in Comput. Sci., pp. 138–149. Springer, Berlin, 2007 (WITH E. R. SCHEINERMAN).

Directed random dot product graphs. Internet Math., 5(1-2):91–111, 2008 (WITH E. SCHEINERMAN).

Stanley depth of squarefree monomial ideals. J. Algebra, 322(10):3789–3792, 2009 (WITH M. T. KELLER).

Kernel models for complex networks. in WebSci'09: Society On-Line. 2009 (WITH M. MIHAIL, Y. AMANATIDIS).

A Major League Baseball team uses operations research to improve draft preparation. Interfaces, October 2010 (WITH ANONYMOUS, N. STRIEB, J. SOKOL), to appear.

Interval partitions and Stanley depth. J. Combin. Theory Ser. A, 117(4):475–482, 2010 (WITH C. BIRÓ, D. M. HOWARD, M. T. KELLER, W. T. TROTTER).

Braess's paradox in large sparse graphs. in Internet and Network Economics, AMIN SABERI, ed., vol. 6484 of Lecture Notes in Computer Science, pp. 194–208. Springer Berlin / Heidelberg, 2010 (WITH F. CHUNG).

Degree bounds for linear discrepancy of interval orders and disconnected posets. Discrete Math., 310(15-16):2198–2203, 2010 (WITH M. T. KELLER).

On the Stanley depth of squarefree Veronese ideals. Journal of Algebraic Combintorics, 33(2):313–324, March 2011 (WITH M. T. KELLER, Y.-H. SHEN, N. STREIB).

When linear and weak discrepancy are equal. Discrete Math., 311(4):252–257, 2011 (WITH D. M. HOWARD).

Towards a weighted version of the Hajnal-Szemerédi theorem. (WITH J. BALÓGH, G. KEMKES, C. LEE). August 2011, `submitted`.

Braess's paradox in expanders. (WITH F. CHUNG AND W. ZHAO). September 2011, `submitted`.

Improved multicommodity maximum flow. (WITH F. CHUNG AND W. ZHAO). October 2011, `submitted`.

The weighted spectrum of the universal cover and an Alon-Boppana result for the normalized Laplacian. October 2011, `submitted`.

The spectra of multiplicative attribute graphs. (WITH M. RADCLIFFE). February 2012, `submitted`.

The diameter of random cubic sum graphs. April 2012, `submitted`.

Spectrum of inhomogeneous random graphs. (WITH M. MIHAIL). `in preperation`.

The dimension of the minor poset. (WITH N. STRIEB). `in preperation`.

RESEARCH POSITIONS

National Security Agency Fort Meade, Maryland   Summer 2005
Summer Program for Operations Research Technology
◆ Derived theorems pertaining to a random graph model that gives rise to a social network.
◆ Held Top Secret/Sensitive Compartmented Information (TS/SCI) clearance.

National Security Agency Fort Meade, Maryland   Summer 2004
Summer Program for Operations Research Technology
◆ Researched, developed, and implemented graph theoretic metrics in support of the Knowledge System Prototype (KSP).
◆ Held Top Secret/Sensitive Compartmented Information (TS/SCI) clearance.

National Security Agency Fort Meade, Maryland   Summer 2002
Director's Summer Program
◆ Developed, augmented, and implemented existing model and algorithms for stochastic processing of classified data.
◆ Held Top Secret/Sensitive Compartmented Information (TS/SCI) clearance.

NSF/Rose-Hulman Institute of Technology Terre Haute, Indiana   Summer 2001
Undergraduate Mathematics Researcher, NSF Research Experience for Undergraduates
◆ Conducted research on the applications of graph theory to the theory of separable tilings of hyperbolic surfaces under the advisement of Prof. S. Allen Broughton.

NSF/University of Tennessee, Knoxville Knoxville, Tennessee   Summer 2000
Undergraduate Mathematics Researcher, NSF Research Experience for Undergraduates
◆ Conducted research into the optimal control of Schrödinger's Equation under the advisement of Prof. Suzanne Lenhart and Dr. Vladamir Protopopescu (Oak Ridge National Laboratory).

ACADEMIC POSITIONS

University of California, San Diego Department of Mathematics   Fall 2009 – Present
Post Doctoral Scholar/ Teaching Visitor
Georgia Institute of Technology School of Computer Science   Spring 2009 – Summer 2009
Postdoctoral Fellow
Georgia Institute of Technology School of Mathematics   Summer 2007, 2008 and Fall 2008
Graduate Teaching Assistant
Georgia Institute of Technology College of Computing   Spring and Fall 2007
Graduate Teaching Assistant
National Science Foundation/Georgia Institute of Technology   Fall 2002 - Fall 2006, Spring 2008
School of Mathematics NSF VIGRE Trainee
◆ Reduced teaching load and additional research support.

SELECTED PRESENTATIONS

SIAM Conference on Discrete Mathematics Halifax, Canada	July 2012
Washington State University Pullman, WA	February 2012
Washington State University – TriCities Richland, WA	February 2012
University of Rhode Island Kingston, RI	February 2012
University of Louisville Louisville, KY	February 2012
London School of Economics London, England	November 2011
CanaDAM Victoria, BC, Canada	June 2011
Random Structures and Algorithms Atlanta, GA	May 2011
AMS Sectional Meeting Las Vegas, NV	April 2011
AMS/MAA Joint Math Meetings New Orleans, LA	January 2011
6th **Workshop on Internet and Network Economics** San Francisco, CA	December 2010
UCSD Combinatorics Seminar La Jolla, CA	March 2010
INFORMS Annual Meeting San Diego, CA	October 2009
ACO Student Seminar Atlanta, GA	April 2008
Graduate Student Symposium Atlanta, GA	March 2008
5th **Workshop on Algorithms and Models for the Web-Graph** San Diego, CA	December 2007
SIAM Conference on Discrete Mathematics Victoria, BC, Canada	June 2006

TEACHING EXPERIENCE

University of California, San Diego

Lead Instructor
- ◆ **Calculus II** Fall 2010 (104 students)
- ◆ **Calculus, III** Spring 2011 (166 students)
- ◆ **Calculus for Science and Engineering, II** Winter 2010 (185 students)
- ◆ **Calculus and Analytic Geometry for Science and Engineering** Spring 2010 (187 students)
- ◆ **Introduction to Differential Equations** Fall 2009 (162 students) Winter 2011 (207 students)

Georgia Institute of Technology

Lead Instructor
- ◆ **Introduction to Proof** (College of Computing) Spring 2007 (53 students), Fall 2007 (53 students)
- ◆ **Applied Combinatorics** Summer 2007 (cotaught, 35 students), Summer 2008 (cotaught, 35 students)
- ◆ **Calculus I** Fall 2005 (76 students)
- ◆ **Linear and Discrete Mathematics** Spring 2005 (37 students), Fall 2008 (31 students)

Recitation Instructor
- **Linear and Discrete Mathematics** Fall 2004 (39 students)
- **Calculus I** Fall 2004 (40 students), Fall 2003 (40 students)
- **Calculus II** Spring 2004 (35 and 74 students)
- **Precalculus** Fall 2003 (37 students)

Selected Awards and Honors

AMS-Simmons Travel Grant	2011
Travel Award – CanaDAM	2011
Travel Award – Random Structures and Algorithms	2011
Outstanding Graduate Teaching Assistant, School of Mathematics	2008
Student Travel Award – SIAM Discrete Mathematics	2006
Graduate Research Fellowship Honorable Mention, National Science Foundation	2003
VIGRE Traineeship (5 years), National Science Foundation, Georgia Institute of Technology	2002
Honorable Mention, Mathematical Contest in Modeling	2002
Meritorious, Mathematical Contest in Modelling	1999, 2000, 2001

Service

- Reviewer, *Mathematical Reviews*
- Referee, *FILOMAT*, *Journal of Machine Learning*, *Order*, *Internet Mathematics*, *Random Structures and Algorithms*, *SIAM Journal on Discrete Mathematics*
- Graduate Student Member, Honor Committee — Summer 2006 - Fall 2008
  Georgia Institute of Technology
- Organizer, Lead TA Development Group — Spring 2007 - Summer 2008
- Oral Presentation Judge, Undergraduate Research Symposium — 2008, 2009
  Georgia Institute of Technology
- Organizing Committee, High School Mathematics Contest — 2008
  Georgia Institute of Technology
- Head Grader, High School Mathematics Contest — 2008, 2009
  Georgia Institute of Technology
- New Teaching Assistant Orientation Advisory Board — Summer 2007
  Center for the Enhancement of Teaching and Learning
- Member, ad hoc committee on replacement textbook for — Summer 2007
  Linear and Discrete Mathematics
- Volunteer, High School Mathematics Contest, — 2004, 2005, 2007, 2008, 2009
  Georgia Institute of Technology

Memberships

- American Mathematical Society
- Mathematical Association of America
- Society for Industrial and Applied Mathematics