

# KEVIN P. COSTELLO

## Home Address

800 Peachtree St. NE  
Apt. 1305  
Atlanta, GA 30308  
(732) 213-7263  
kcostell@math.gatech.edu  
<http://www.math.gatech.edu/~kcostell>

## Dept. Address

Georgia Institute of Technology  
School of Mathematics  
686 Cherry St.  
Atlanta, GA 30332  
(404) 385-7530

## Positions Held

<b>Georgia Institute of Technology</b> Visiting Assistant Professor	2008-
<b>Institute for Advanced Study</b> Member, School of Mathematics.	2007-2008

## Education

<b>Rutgers University</b> Ph.D. in Mathematics, October 2007. Thesis: <i>Ranks of Random Matrices and Graphs</i> Supervisor: Van Vu	2006-2007
<b>University of California, San Diego</b> Student in Ph.D. Program. Transferred to Rutgers with Van Vu.	2003-2006
<b>California Institute of Technology</b> B.S. with Honors in Mathematics and Economics, June 2003.	1999-2003

## Research Interests

Probabilistic Combinatorics, particularly questions involving random discrete structures and discrete probability.

## Publications

*Bilinear and Quadratic Variants on the Littlewood-Offord Problem* Submitted.

*Concentration of Random Determinants and Permanent Estimators* (with V. Vu) Submitted.

*The Rank of Random Sparse Matrices* (with V. Vu) Submitted.

*Balancing Gaussian Vectors* Accepted by Israel Journal of Mathematics

*The Rank of Random Graphs* (with V. Vu) Random Structures and Algorithms **33** 269-285

*Random Symmetric Matrices are Almost Surely Non-Singular* (with T. Tao and V. Vu). Duke Math. J. **135** (2006) 395-413

## Teaching Experience

<b>Visiting Assistant Professor</b> Department of Mathematics, Georgia Institute of Technology Taught an "Applied Combinatorics" course aimed mostly at second and third year	08/2008-
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computer science majors, as well as a “Linear and Discrete Mathematics” course aimed mostly at Industrial and Computer Engineering students.

**Teaching Assistant** 09/2006–06/2007  
Department of Mathematics, Rutgers University  
Led discussion sections, held office hours, and graded exams for Introductory Pre-calculus and Calculus courses aimed at non-science majors.

**Teaching Assistant** 01/2004-06/2006  
Department of Mathematics, UC San Diego.  
Led discussion sections, held office hours, and graded exams for Introductory Calculus and Upper-Division Linear Algebra courses.

**Teaching Assistant** 06/2000-07/2000  
Center for Talented Youth  
Assisted in the instruction of two summer courses in “Algebra and its Applications” for 5th-8th graders.

**Invited Talks** Combinatorics Seminar, Georgia Institute of Technology, October 2009  
Clay-Fields Conference on Additive Combinatorics, Number Theory, and Harmonic Analysis, Fields Institute, April 2008.  
DIMACS Workshop on Random Matrices, March 2008  
Combinatorics Seminar, Georgia Institute of Technology, February 2008  
Mini-Conference on Arithmetic Combinatorics, Institute for Advanced Study, December 2007.  
Arithmetic Combinatorics Seminar, Institute for Advanced Study, November 2007  
Discrete Mathematics and Theoretical Computer Science Seminar, Institute of Advanced Study, October 2007  
Special Session on Probability and Combinatorics, AMS Sectional Meeting, Rutgers University, October 2007  
Discrete Mathematics Seminar, Rutgers University, November, 2006.  
Special Section on Extremal and Probabilistic Combinatorics, AMS Sectional meeting, University of Arkansas Fayetteville, November 2006.  
Special Session on Enumerative and Algebraic Combinatorics, AMS Sectional meeting, University of Connecticut Storrs, October 2006  
Discrete Mathematics Seminar, Princeton University, October 2006  
Combinatorics Seminar, UC-San Diego, July 2006  
Horizon of Combinatorics Seminar, Budapest, Hungary, July 2006  
BIRS Conference “Probabilistic Combinatorics: Recent Progress and New Frontiers”, Banff, Canada, October 2005  
Session on Random Graphs and Their Applications, CMS/CSHPM Summer Meeting, Waterloo, Canada, June 2005.

## Awards and Honors

<b>NSF Graduate Research Fellowship</b>	09/2003–08/2006
<b>Herbert J. Ryser Memorial Scholarship, Calif. Inst. of Tech.</b> "For academic excellence, preferably in Mathematics"	2002
<b>Putnam Competition, Honorable Mention</b>	1999, 2000, 2002

## Conferences Attended

Clay-Fields Conference on Additive Combinatorics, Number Theory, and Harmonic Analysis, Fields Institute, April 2008

Random Matrix Workshop, DIMACS, March 2008

Miniconference on Arithmetic Combinatorics, IAS, December 2007

AMS Sectional, Rutgers U., October 2007

Puzzling Mathematics and Mathematical Puzzles, DIMACS, June 2007

AMS Sectional, U. Arkansas-Fayetteville, November 2006

AMS Sectional, U. Connecticut-Storrs, October 2006

Properties of Large Graphs: From Combinatorics to Statistical Physics and Back, DIMACS, October 2006

Horizon of Combinatorics, Budapest, Hungary, July 2006

Probabilistic Combinatorics Session, BIRS, Banff, Canada, November 2005

CMS/CSHPM Annual Summer Meeting, Waterloo, Canada, June 2005

AMS Sectional, UC-Santa Barbara, April, 2005

The Mathematics of Persi Diaconis, UC-San Diego, January 2005

**References** Available on Request