

Mitchel T. Keller

Education

- May 2010 **Ph.D. in Mathematics**, *Georgia Institute of Technology*, Atlanta, Georgia.
Minor in Algorithms. Dissertation: *Some Results on Linear Discrepancy for Partially Ordered Sets*.
Advisor: William T. Trotter.
- May 2004 **B.S. in Mathematics**, *North Dakota State University*, Fargo, North Dakota, *With Honor*.
Minor in Computer Science. Completed University Honors Program. Honors Thesis: *Knot Theory: History and Applications with a Connection to Graph Theory*

Academic and Research Positions

- 2004– **VIGRE Graduate Teaching and Research Assistant**, *School of Mathematics, Georgia Institute of Technology*, Atlanta, Georgia.
- Precalculus Lead Instructor, Fall 2009. Full responsibility (including text selection) for course with 45 students. Supervised two undergraduate teaching assistants.
 - Applied Combinatorics Lead Instructor, Fall 2008. Full responsibility for course with 34 students. Taught from in-development text being co-authored with William T. Trotter.
 - Calculus II Teaching Assistant, Spring 2008. Led recitation, held office hours, and graded.
 - Precalculus Lead Instructor, Spring 2007. Full responsibility for course with 36 students. Supervised one undergraduate teaching assistant.
 - Calculus I Lead Instructor, Fall 2006. Full responsibility for course with 126 students. Supervised three undergraduate teaching assistants.
 - Applied Combinatorics Teaching Assistant, Spring 2006. Co-authored lecture notes, held office hours, graded, and gave substitute lectures.
 - Calculus I Teaching Assistant, Fall 2005. Led recitation, held office hours, and graded.
- Summer 2004 **Research Intern II**, *Institute for Defense Analyses-Center for Computing Sciences*, Bowie, Maryland.
Developed and tested algorithms for data mining of large graphs using Perl, C, and Hancock (a C-based, domain-specific language for analyzing data streams). Top Secret Security Clearance, Department of Defense.
- Summer 2003 **Director's Summer Program**, *National Security Agency*, Fort George G. Meade, Maryland.
Worked in a team environment to develop and test mathematical algorithms for data mining. Trained and tested neural networks using LNKnet. Implemented and tested algorithms using C and Perl. Top Secret Security Clearance, Department of Defense.
- Summer 2002 **Mathematics Research Experience for Undergraduates Program**, *Louisiana State University*, Baton Rouge, Louisiana.
Conducted research connecting graph theory and knot theory with N.W. Stoltzfus.
- 2001–2004 **Undergraduate Teaching Assistant, Paper Grader, and Computer Systems Administrator**, *Department of Mathematics, North Dakota State University*, Fargo, North Dakota.

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Publications

- [1] Online linear discrepancy. In preparation, 2009 (with N. Streib and W. T. Trotter).
- [2] On the Stanley depth of squarefree Veronese ideals. Submitted, 2009 (with Y.-H. Shen, N. Streib, and S. J. Young).
- [3] Degree bounds for linear discrepancy of interval orders and disconnected posets. Submitted, 2009 (with S. J. Young).
- [4] Stanley depth of squarefree monomial ideals. *J. Algebra*, 322(10):3789–3792, 2009 (with S. J. Young).
- [5] Interval partitions and Stanley depth. To appear in *J. Combin. Theory Ser. A.*, 2009 (with Cs. Biró, D. M. Howard, W. T. Trotter, and S. J. Young).
- [6] A characterization of partially ordered sets with linear discrepancy equal to 2. *Order*, 24(3):139–153, 2007 (with D. M. Howard and S. J. Young).

Honors and Awards

- 2009 Bob Price Research Award, School of Mathematics, Georgia Institute of Technology
- 2009 K. Patricia Cross Future Leaders Award, Association of American Colleges and Universities
- 2008 Outstanding Teaching Assistant Award, Georgia Institute of Technology
- 2008 Best Oral Presentation for the College of Sciences, Georgia Tech Graduate Student Symposium
- 2008 Love of Learning Grant, The Honor Society of $\Phi\Kappa\Phi$
- 2006 Helen E. Grenga Friend of the Graduate Student Award, Graduate Student Government Association, Georgia Institute of Technology
- 2006 John R. Festa Fellowship for strong academic and leadership skills, School of Mathematics, Georgia Institute of Technology
- 2006 IMPACT Scholarship for strong leadership skills, Auxiliary Services, Georgia Institute of Technology
- 2002 Inducted into The Honor Society of $\Phi\Kappa\Phi$
- 2000 National Merit Scholar
- 2000 North Dakota delegate to the United States Senate Youth Program

Presentations

Conferences

- February 2010 Integrated Course Design: Extending Lessons from an Introductory Mathematics Course (with L. Soleil, Georgia Tech). Lilly Conference on College and University Teaching, Greensboro, North Carolina.
- May 2008 A characterization of partially ordered sets with linear discrepancy equal to 2. (Poster presentation.) New Directions in Algorithms, Combinatorics, and Optimization, Atlanta, Georgia.

- March 2008 A characterization of partially ordered sets with linear discrepancy equal to 2. 2008 Georgia Tech Graduate Student Symposium.
- October 2005 Proactive Academic Integrity Measures—The Second Generation (with K.D. Boyd, University of Georgia, and E.S. McGarity, Georgia Tech). The 2005 Center for Academic Integrity International Conference, Blacksburg, Virginia.
- October 2005 Academic Integrity and Cultural Differences (with M. Barry, Rochester Institute of Technology, and L. Pendleton, Virginia Tech). The 2005 Center for Academic Integrity International Conference, Blacksburg, Virginia.
- April 2005 Six degrees of separation, Or, why Bacon is a good, but not the best, choice. North Dakota State University Mathematics Consortium.
- January 2003 Signed graph Laplacians. AMS-MAA-SIAM Special Session on Research in Mathematics by Undergraduates, Joint AMS/MAA Meeting, Baltimore, Maryland.

Others

- November 2009 Online algorithms for graphs and partially ordered sets, Georgia Tech SIAM Student Seminar
- December 2008 The Probabilistic Method, Or, Using Probability to Show that Something Definitely Exists, North Dakota State University Mathematics Club.
- July 2007 Linear discrepancy in partially ordered sets. North Dakota State University Mathematics Colloquium.
- May 2004 Six degrees of separation, Or, why Kevin Bacon is a good, but not the best, choice. North Dakota State University Mathematics Club.
- April 2004 Some combinatorial proofs of some noncombinatorial results. North Dakota State University Mathematics Colloquium.
- September 2003 One, two, skip a few, ninety-nine, one hundred, Or, How I learned there are smarter ways to count. North Dakota State University Mathematics Club.
- September 2002 Algebra and graphs and knots—oh my! North Dakota State University Mathematics Club.

Service Activities

Mathematics

- October 2008– Interim co-Managing Director, Mathematics Genealogy Project
- 2005– Referee for *Discrete Appl. Math.*, *J. Commut. Algebra*, *J. Graph Theory*, and *Order*
- 2003– Assistant Director, Mathematics Genealogy Project
- 2007–2009 Co-chair, Organizing Team, Georgia Tech High School Mathematics Competition
- 2007–2009 Judge, Undergraduate Research Spring Symposium, Georgia Tech
- 2005–2007 Volunteer, Georgia Tech High School Mathematics Competition
- 2002–2003 Technical Director, Mathematics Genealogy Project

Campus Governance

- 2007– Mathematics Senator, Graduate Student Government Association (SGA), Georgia Tech
- 2007–2009 Health Services Committee Chair, Graduate SGA, Georgia Tech
- 2006–2007 Graduate Student Body President, Graduate SGA, Georgia Tech (Includes service as a non-voting member of the Institute Executive Board, Academic Senate, and General Faculty Assembly.)
- 2005–2006 Executive Vice President, Graduate SGA, Georgia Tech
- 2004–2005 School of Mathematics Senator and Secretary of the Senate, Graduate SGA, Georgia Tech
- 2003–2004 Senator, University Senate, North Dakota State University
- 2002–2004 Parliamentarian, Student Senate, North Dakota State University
- 2002–2003 Associate Justice, Student Court of Justice, North Dakota State University
- 2001–2002 Senator, University Senate, North Dakota State University
- 2000–2002 Chief Justice, Student Court of Justice, North Dakota State University

Boards and Committees

- 2009– Assistant Director of Student Integrity Search Committee, Georgia Tech
- 2006– Student Regulations Committee, Georgia Tech
- 2004– Honor Advisory Council, Georgia Tech (Vice Chair, Fall 2005)
- 2008, 2009 New Teaching Assistant Orientation Planning Committee, Georgia Tech
- 2008–2009 Course/Instructor Opinion Survey Revision Task Force, Georgia Tech
- 2007–2009 Student Grievance and Appeal Committee, Georgia Tech
- 2008 Dean and Director of Libraries Search Committee, Georgia Tech
- 2007–2008 Student Health Insurance Program Steering Committee, University System of Georgia
- 2007–2008 Student Advisory Board to the Senior Vice Provost for Academic Affairs, Georgia Tech
- 2005–2008 Mandatory Student Fee Advisory Committee, Georgia Tech
- 2007 Vice Provost for International Initiatives Search Committee, Georgia Tech
- 2006–2007 Dean of Sciences Search Committee, Georgia Tech
- 2006–2007 Board of Trustees, Georgia Tech Athletic Association (Member of Committee on Academics)
- 2006–2007 Registrar's Advisory Board, Georgia Tech
- 2006–2007 Radio Communications Board, Georgia Tech
- 2006–2007 Sexual Violence Task Force, Georgia Tech
- 2006 Dean of Students Search Committee, Georgia Tech
- 2006 Provost and Vice President for Academic Affairs Search Committee, Georgia Tech
- 2006 Chair, Committee to rewrite SGA funding policies, Georgia Tech
- 2005–2006 Student Health Insurance Task Force, University System of Georgia. Represented over 250,000 students from 35 campuses in selecting a hard-waiver insurance plan.

- 2005–2006 Academic Integrity Committee of the Academic Senate, Georgia Tech
2005 Assistant Dean of Students/Director of Student Integrity Search Committee, Georgia Tech
2001–2004 Grade Appeals Board, North Dakota State University (Acting Chair, Spring 2004)
2001–2004 Student Co-Coordinator, University Honors Program, North Dakota State University. Organized 2004 Conference of the Upper Midwest Honors Council, which was attended by 141 individuals from 21 institutions in 8 states.
2001–2004 North Dakota Student Representative, Upper Midwest Honors Council Governing Board
2000–2004 Code of Student Behavior Complaint Resolution Board, North Dakota State University

Memberships

- American Mathematical Society
- The Honor Society of $\Phi\Kappa\Phi$
- Mathematical Association of America
- Pi Mu Epsilon National Honorary Mathematics Society
- Society for Industrial and Applied Mathematics