

BEN HESTER

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Education

- **Ph.D. in Mathematics**—Arizona State University (expected May 2010)
- **M.A. in Mathematics**—Arizona State University (May 2007)
- **B.S. in Mathematics**—Texas A&M University (May 2005)

Experience

- **Applied Research Mathematician**—Fort Meade, MD
National Security Agency: May 2008—August 2008
 - Analyzed and implemented a graph generation algorithm to model large Internet graphs toward the goal of increasing network defense capabilities.
 - Briefed the Director of the NSA, the Senate Select Committee on Intelligence Technical Advisory Group, and NSA’s Defensive Computing Research Office on a classified project. Published a classified paper detailing the technical aspects of the project.
- **Mathematician**—Hanscom Air Force Base, MA
Air Force Research Labs: May 2007—August 2007
 - Analyzed images from space shuttle video feed using MATLAB’s Image Processing Toolkit. Wrote procedures to perform intensity integrations and calculate velocities of exhaust particles for the purpose of studying shuttle engine exhaust interactions with the environment.
- **Graduate Teaching Associate**—Tempe, AZ
ASU Department of Mathematics and Statistics: August 2005—present
 - Prepare and deliver lectures. Create quizzes, tests, worksheets, and projects. Hold office hours and grade all assignments. Work in the mathematics tutor center.

Publications

- “Optimal Pebbling in Products of Graphs,” with D. Herscovici and G. Hurlbert, <http://arxiv.org/abs/0907.5577>, submitted to *The Australasian Journal of Combinatorics*.
- “Diameter Bounds, Fractional Pebbling, and Pebbling with Arbitrary Target Distributions,” with D. Herscovici and G. Hurlbert, <http://arxiv.org/abs/0905.3949>, submitted to *Graphs and Combinatorics*.
- “Generalizations of Graham’s Pebbling Conjecture,” with D. Herscovici and G. Hurlbert, <http://arxiv.org/abs/0905.3197>, submitted to *SIAM Journal on Discrete Mathematics*.
- “Analysis of Space Shuttle Primary Reaction Control Engine Exhaust Transients,” with Y. Chiu, J. Winick, R. Dressler, L. Bernstein, M. Braunstein, and P. Sydney, *Journal of Spacecraft and Rockets*, **46** (3), May–June 2009, 679–688.

Talks

- “Graph Pebbling and Linear Optimization”: Discrete Math Seminar, Arizona State University, fall 2009.
- “Diameter Bounds on Pebbling Numbers”: Discrete Math Seminar, Arizona State University, spring 2009.
- “Relaxed Graph Pebbling”: Graduate Student Conference in Combinatorics, University of California Davis, spring 2008.
- “Relaxed Graph Pebbling”: Mathematical Association of America Southwest Sectional Conference, Tempe, AZ, spring 2008.
- “Applications of Linear Optimization to Some Graph Pebbling Problems” (poster): Harvey Mudd College Mathematics Conference on Public Sector Operations Research, fall 2007.
- “Is Graham’s Pebbling Conjecture False?” (poster): Harvey Mudd College Mathematics Conference on Enumerative Combinatorics, fall 2006.

Courses

- grader, Advanced Linear Algebra (MAT 442)—fall 2009
- instructor, Calculus for Engineers II (MAT 266)—fall 2009
- instructor, Calculus for Engineers I (MAT 265)—spring 2009
- grader, Introduction to Linear Optimization (MAT 419)—spring 2008
- instructor, Discrete Mathematical Structures (MAT 243)—spring 2008, fall 2008
- instructor, Brief Calculus (MAT 210)—fall 2007, summer 2009
- instructor, Finite Mathematics (MAT 119)—spring 2007
- instructor, College Mathematics (MAT 142)—spring 2006, fall 2006
- instructor, Precalculus (MAT 170)—fall 2005

Conferences Attended

- Graduate Student Conference in Combinatorics, University of California Davis, spring 2008.
- Mathematical Association of America Southwest Sectional Conference, Tempe, AZ, spring 2008.
- Harvey Mudd College Mathematics Conference on Public Sector Operations Research, fall 2007.
- CombinaTexas Conference, Texas A&M University, spring 2007.
- Harvey Mudd College Mathematics Conference on Enumerative Combinatorics, fall 2006.
- Graduate Student Conference in Combinatorics, University of Wisconsin, spring 2006.

Activities and Interests

- Taught seventh grade course “Mathematics in the Real World” at Barrett Summer Scholars Program at Arizona State University, summer 2009.
- Helped plan, organize, and facilitate SUnMaRC (Southwestern Undergraduate Mathematics Research Conference) in Tempe, AZ, spring 2008.
- Helped facilitate and grade high school participants of Scottsdale Community College’s Math Science Field Day, spring 2008.
- Participated in church choir as guitar/mandolin player.

Additional Information

- Experience with Maple, MATLAB, Mathematica, CPLEX, C++, Perl, HTML, Linux.
- Referee for *Ars Combinatoria*.
- Held TS//SCI (Top Secret//Sensitive Compartmented Information) clearance.

Memberships

- American Mathematical Society.
- Mathematical Association of America.

References

- Dr. Glenn Hurlbert: Arizona State University
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- Dr. Andrzej Czygrinow: Arizona State University
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- Dr. Anne Gelb (Teaching): Arizona State University
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- Dr. Katalin Kolossa (Teaching): Arizona State University
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