

**Maria Belk**  
**Curriculum Vitae**

Department of Mathematics

Bard College

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**Education:**

- **Cornell University, Ph.D.**, Mathematics, August 2005.  
*Applications of Stress Theory: Realizing Graphs and Kneser-Poulsen*  
Advisor: Robert Connelly
- **Cornell University, M.S.**, Mathematics, May 2002.
- **Carleton College, B.A.**, Mathematics, June 1999.  
Magna Cum Laude with distinction in mathematics

**Professional Experience**

- **Bard College**, Director of Quantitative Literacy, January 2009 – Present.
- **Bard College**, Visiting Assistant Professor, Mathematics Program, September 2008 – Present.
- **Texas A&M University**, Visiting Assistant Professor, Department of Mathematics, August 2005 – August 2008.

**Research Interests**

- Discrete Geometry, Computational Geometry, Graph Theory

**Publications and Preprints**

- “Incorporating Technology”, chapter to appear in A Handbook for Directors of Quantitative and Mathematical Support Centers, (M. Schuckers, G. Coulombe, M. O’Neill, eds.).
- Realizability of graphs (with Robert Connelly). *Discrete and Computational Geometry*. 37 (2007), no. 2, 125-137.
- Realizability of graphs in three dimensions. *Discrete and Computational Geometry*. 37 (2007), no. 2, 139-162.

### Teaching at Bard College

- **Courses Taught:** Algebra Workshop ( $\times 11$ ), Precalculus Workshop ( $\times 11$ ), Precalculus ( $\times 6$ ), Calculus I, Calculus II, Proofs and Fundamentals, Combinatorics, Graph Theory ( $\times 4$ ), Game Theory, Operations Research ( $\times 2$ )
- **Senior Projects:** Tina Zhang (Graph Theory), Xinyuan Xu (Actuarial Science), Alexandra Carver (Graph Theory), Stergios Mentesidis (joint with Economics), Anisha Ramnani (Graph Theory), Noah Winslow (Graph Theory)
- **Tutorials:** Algebra tutorial for a student with learning disability (Fall 2009), Graph Theory tutorial (Spring 2011), Geometry Tutorial (Fall 2011), Operations Research Tutorial (Fall 2014)
- **BEOP Workshop:** Instructor for 2-week math workshop for BEOP students in Summer 2009, 2010, 2011, 2012, 2013, 2014.
- **Course Development:** Designed BLC 150 (Algebra Workshop) and BLC 190 (Precalculus Workshop) with the help of the Q-committee.

### Teaching at Texas A&M University

- **Courses Taught:** Graduate Engineering Mathematics (linear algebra and vector calculus,  $\times 3$ ), Differential Equations (used Matlab in class and on tests, 2 sections), Engineering Calculus II (70 students, supervised a TA), Linear Algebra (2 sections), Business Mathematics I (2 sections).

### Teaching at Cornell University

- **Courses Taught:** Calculus II ( $\times 2$ ).

### Undergraduate Research Experience

- Supervisor for six senior projects at Bard college.
- Helped supervise a research group of four undergraduate students at Bard college during the summer of 2009 and a group of three undergraduate students at Bard College during the summer of 2013.

### Service at Bard College

- **Math and Science Tutors:** Coordinated the math and science tutors, Spring 2009 to Present.
- **Math Study Room:** Coordinated the Math Study Room, Fall 2008 to Present.
- **Math Placement Diagnostic:** Designed and implemented the Math Placement Diagnostic for first-year students with the help of the Q-committee.
- **Superadvising:** Advised and registered first-year students, Fall 2009, Fall 2010, Fall 2011, Fall 2012, Fall 2013, and Fall 2014.

### Conferences Organized

- **Mid-Hudson Mathematics Conference for Undergraduates:** Co-organizer, Fall 2009, Fall 2011, and Fall 2013.
- **Discrete Mathematics Day at Bard College:** Co-organizer, Fall 2008 and Spring 2015.

### Outreach

- **Workshop at the Bard Math and Science Day:** Organized and led an activity on the Prisoner's Dilemma for middle school and high school students attending The Bard Math and Science Day (organized by the Bard Math Circles).
- **Co-organizer and facilitator for "Expanding Your Horizons" math workshops:** Organized and led hands-on activities on topology, symmetry, the game of Nim, probability, and minimal surfaces for middle school girls. April 2000-2005 at Cornell University, and October 2006 and December 2007 at Texas A&M University.
- **Graduate Assistant for Math Explorers Club:** Assisted professors in leading modules. Designed and led computer activities for high school students. Fall 2000-Spring 2002.

### Honors and Grants

- AWM Workshop for Women Graduate Students and Recent Ph.D.'s at the Joint Mathematics Meeting, January 2005.
- NSF VIGRE Grant, Spring 2001. Funding to design and lead computer activities for Math Explorers Club, a program run by the Cornell math department for high school students.
- NSF VIGRE Grant, Summer 2000 and 2001, Ph.D. research.

### Conference Talks and Posters

- "Creating Pathways to Math Success at a Liberal Arts College", Joint Mathematics Meetings, Boston, January 2011.
- "Realizability of Graphs"
  - Discrete Math Day, Bard College, November 2008
  - Horizon of Combinatorics, July 2006.
  - Discrete Geometry session, Canadian Mathematical Society Meeting, December 2004
- "Making Your House Safe from Zombie Attacks", Joint Mathematics Meetings, San Diego, January 2008.

- “Realizing Graphs”, Discrete Geometry and Topology in Low Dimensions, Banff International Research Station, April 2007.
- “Realizability of Graphs”, Poster at AWM Workshop for Women Graduate Students and Recent Ph.D.’s, Joint Mathematics Meetings, January 2005.

### **Seminar Talks**

- “Game Theory”, Summer Workshop for Math Teachers, Bard College, Summer 2012, with James Belk.
- “Tensegrities”, Summer Workshop for Math Teachers, Bard College, July 2011, with James Belk.
- “Pythagoras in Spherical and Hyperbolic Geometry”, Summer Workshop for Math Teachers, Bard College, July 2010, with James Belk.
- “Rigidity and Flexibility of Structures”
  - Bard College Lifetime Learning Institute, October 2014.
  - Stockton College Mathematics Seminar, April 2011.
  - Bard College Mathematics Seminar, December 2008.
- “Problems related to the Kneser-Poulsen conjecture”
  - Texas A&M Algebra and Combinatorics seminar, September 2007.
  - Cornell Discrete Geometry and Combinatorics seminar, Fall 2003.
  - University of Calgary summer discrete geometry seminar, July 2003.
- “Making Your House Safe from Zombie Attacks”, Texas A&M Postdoc Colloquium, October 2006.
- “Realizability of Graphs”
  - SMPosium, Carleton College, June 2007.
  - Texas A&M Algebra and Combinatorics seminar November 2005.
  - Texas A&M Postdoc Colloquium, October 2005.
  - Binghamton University Combinatorics Seminar, Fall 2004.
  - Cornell Discrete Geometry and Combinatorics seminar, Fall 2004.
  - Cornell graduate student colloquium, November 2003.