

# EVA G. GOEDHART

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## EDUCATION

- Ph.D., Mathematics, Bryn Mawr College, (expected) May 2015  
Dissertation: The Nonexistence of Solutions to Certain Families of  
Diophantine Equations  
Advisor: Helen G. Grundman
- M.A., Mathematics, Wake Forest University, May 2005  
Thesis: Explicit Bounds for Linear Difference Equations  
Advisor: Kenneth S. Berenhaut
- B.S., Mathematics, James Madison University, May 2003  
Concentration: Pure Mathematics

## TEACHING EXPERIENCE AND TRAINING

- Teaching Assistant, Bryn Mawr College (BMC)  
Multivariable Calculus, Fall 2005  
Elementary Number Theory, Spring 2007  
Transitions to Higher Mathematics, Spring 2006  
Abstract Algebra I, Fall 2006 & Fall 2008  
Abstract Algebra II, Spring 2009 & Spring 2011  
Real Analysis I, Fall 2007  
Algebraic Number Theory, Spring 2008
- Certification, Bryn Mawr College  
Dean's Certificate in Pedagogy, Spring 2006
- Educational Training, Bryn Mawr College  
Perspectives in Math Pedagogy, Fall 2005
- Teaching Assistant, Wake Forest Univ. (WFU), Fall 2002–Fall 2003  
Tutor, Science and Math Learning Center, James Madison Univ. (JMU),  
Fall 2001

## FELLOWSHIPS

- Dean's Dissertation Fellowship, BMC, 2014–15  
Doris Sill Carland Prize for Excellence in Teaching, BMC, 2009–10  
Research Assistantship, WFU, Spring 2004

## ADDITIONAL AWARDS

- Doris Sill Carland Award for Excellence in Teaching, BMC, Apr. 2012  
Mary Patterson McPherson Award for Excellence, BMC, Apr. 2009  
Pi Mu Epsilon Induction, North Carolina Lambda Chapter, WFU, Apr. 2005

#### RESEARCH WORKSHOPS

- Banff International Research Station, Summer School on Contemporary Methods for Solving Diophantine Equations, Banff, AB, Canada, Jun. 2012
- Park City Mathematics Institute, Graduate Summer School: Arithmetic of L-functions, Park City, UT, Jun. 2009

#### PROFESSIONAL SERVICE

- Student Director, Graduate Group in Science and Mathematics, BMC, 2008–09
- Student Rep., Graduate Council of Arts & Sciences, BMC, 2008–09
- Coordinator, Graduate Student Research Symposium, BMC, 2007–09
- Graduate Student Rep., College Budget Committee, BMC, 2007–09
- Math Dept. Rep., Graduate Student Association, BMC, 2007–09
- President, Association for Women in Science, Blue Ridge Chapter, JMU, 2002–03
- Treasurer, Association for Women in Science, Blue Ridge Chapter, JMU, 2001–02

#### PRESENTATIONS FOR UNDERGRADUATES

Guest Lecturer in Courses, BMC

*Algebraic Number Theory:*

- Fermat's Last Theorem I, Apr. 2008
- Fermat's Last Theorem II, Apr. 2008

*Abstract Algebra I:*

- Symmetric and Alternating Groups, Oct. 2014
- Cosets, Sept. 2013
- Group Homomorphisms, Sept. 2013
- Subgroups, Nov. 2008
- Homomorphism Theorems, Nov. 2008

*Abstract Algebra II:*

- Free Abelian Groups, Apr. 2009
- Automorphisms and Galois Theory, Apr. 2009

Distressing Math Collective, BMC

- News Flash: No Solutions to Diophantine Equations!*, Mar. 2012
- A Little Fun with Numbers and a Couple of Fun Math Tricks*, Jan. 2010
- The Hyperbolic Distance on the Upper Half Plane*, Nov. 2009
- Showing that the Square-Root of 2 is Irrational Again and Again*, Jan. 2009
- Elliptic Curves*, Apr. 2008
- A Special Case of Fermat's Last Theorem*, Feb. 2008
- Positively Algebraic Numbers and their Nonnegative Conjugates*, Nov. 2007
- The Perfect Numbers*, Oct. 2006
- Second-Order Linear Recurrences with Restricted Coefficients and the Constant  $(1/3)^{1/3}$* , Apr. 2006

Shenandoah Undergraduate Mathematics and Statistics Conference, JMU  
*Graduate School and Industry Careers Panel*, Nov. 2005

PRESENTATIONS FOR YOUNGER STUDENTS

CATALYST Conference, Swarthmore College, PA  
*Patterns in Pascal's Triangle*, Mar. 2013

CONFERENCE AND SEMINAR TALKS

- *New Results in Diophantine Equations*, 1105th Meeting of the American Mathematical Society, Greensboro, NC, Oct. 2014
- *Diophantine Equations II: New Results via Diophantine Approximation*, Philadelphia Area Number Theory Seminar, Bryn Mawr College, PA, Oct. 2014
- *Diophantine Equations I: New Results via the Modular Approach*, Philadelphia Area Number Theory Seminar, Bryn Mawr College, PA, Oct. 2014
- *On the Diophantine Equation  $x^{2n} + 2^{2\ell}p^{2m} = z^5$* , West Coast Number Theory Conference, Asilomar Conference Center, CA, Dec. 2013
- *The Complete Solution of  $NX^2 + 2^L3^M = Y^N$* , 1093rd Meeting of the American Mathematical Society, Philadelphia, PA, Oct. 2013
- *Solving the Diophantine Equation  $NX^2 + 2^L3^M = Y^N$* , Joint Mathematics Meetings, San Diego, CA, Jan. 2013
- *The Odd Cases of  $NX^2 + 2^L3^M = Y^N$* , West Coast Number Theory Conference, Asilomar Conference Center, CA, Dec. 2012
- *On the Diophantine Equation  $nx^2 + 2^m3^{m'} = y^n$* , Temple Number Theory Seminar, Temple Univ., PA, Mar. 2012
- *On the Diophantine Equation  $nx^2 + 2^{2m}3^{2m'} = y^n$* , West Coast Number Theory Conference, Asilomar Conference Center, CA, Dec. 2011
- *Elliptic curves over rings*, Temple/Bryn Mawr Number Theory Seminar, Bryn Mawr College, PA, Jul. 2008
- *Explicit Bounds for Second-Order Linear Recurrences with Non-Constant Coefficients*, Temple/Bryn Mawr Number Theory Seminar, Bryn Mawr College, PA, Jul. 2007
- *Second-Order Linear Recurrences with Restricted Coefficients and the Constant  $(1/3)^{1/3}$* , Twelfth International Conference on Fibonacci Numbers and Their Applications, San Francisco, CA, Jul. 2006
- *Explicit Bounds for Some Linear Recurrences*, SouthEast Regional Meeting On Numbers, Univ. of South Carolina, SC, Apr. 2005
- *Explicit Bounds for Linear Difference Equations*, Fifth Annual Graduate Student Research Day, Wake Forest Univ., NC, Mar. 2005
- *Explicit Bounds for Second-Order Difference Equations*, Joint Mathematics Meetings, Atlanta, GA, Jan. 2005

#### ADDITIONAL CONFERENCES ATTENDED

- Joint Mathematics Meetings, San Francisco, CA, Jan. 2010
- Joint Mathematics Meetings, Washington, D.C., Jan. 2009
- EPaDel Section of the Mathematical Association of America Meeting,  
Villanova Univ., PA, Nov. 2006
- Joint Mathematics Meetings, San Antonio, TX, Jan. 2006
- Nineteenth Clemson Mini-Conference on Discrete Mathematics and Algorithms,  
Clemson Univ., SC, Oct. 2004
- Eleventh International Conference on Fibonacci Numbers and Their Applications,  
Braunschweig, Germany, Jul. 2004

#### PROFESSIONAL MEMBERSHIPS

- American Mathematical Society
- Association for Women in Mathematics
- Pi Mu Epsilon

#### PUBLICATIONS

- “Explicit bounds for second-order difference equations and a solution to a question of Stević,” with K. Berenhaut, *J. Math. Anal. Appl.* **305** (2005), no. 1, 1–10.
- “Second-order linear recurrences with restricted coefficients and the constant  $(1/3)^{1/3}$ ,” with K. Berenhaut, *Math. Inequal. Appl.* **9** (2006), no. 3, 445–452.
- “Explicit bounds for third-order difference equations,” with K. Berenhaut and S. Stević, *ANZIAM J.* **47** (2006), no. 3, 359–366.
- “On the Diophantine equation  $NX^2 + 2^L 3^M = Y^N$ ,” with H. G. Grundman, *J. Number Theory* **141** (2014), 214–224.
- “On the Diophantine equation  $X^{2N} + 2^{2\alpha} 5^{2\beta} p^{2\gamma} = Z^5$ ,” with H. G. Grundman, submitted.
- “Diophantine approximation and the equation  $(a^2 cx^k - 1)(b^2 cy^k - 1) = (abcz^k - 1)^2$ ,” with H. G. Grundman, preprint.
- “The Nonexistence of Solutions to Certain Families of Diophantine Equations,” Ph.D. dissertation, Bryn Mawr College, in preparation.