

# Jenny G. Fuselier

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## Employment

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<b>Associate Professor of Mathematics</b> High Point University	August 2016 - Present
<b>Assistant Professor of Mathematics</b> High Point University	August 2009 - July 2016
<b>Assistant Director, Honors Scholar Program</b> High Point University	January 2013 - May 2016
<b>Assistant Professor of Mathematics</b> United States Military Academy	July 2007 - June 2009

## Education

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<b>Ph.D., Mathematics</b> Texas A&M University Thesis Advisor: <i>Dr. Matthew Papanikolas</i>	August 2007
<b>Bachelor of Science, Mathematics</b> Texas A&M University Magna Cum Laude	August 2002

## Research Interests

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### Number Theory

Hypergeometric functions over finite fields  
Modular forms  
Elliptic curves  
Mahler measure

### Mathematics Education

Flipped classroom pedagogy  
Growth mindset among mathematics students

## Publications

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(with L. Long, R. Ramakrishna, H. Swisher, F.T. Tu) "Hypergeometric series, truncated hypergeometric series, and Gaussian hypergeometric functions," 1-100. Submitted.

(with A. Deines, L. Long, H. Swisher, F.T. Tu) "Hypergeometric series, truncated hypergeometric series, and Gaussian hypergeometric functions," *Directions in Number Theory: Proceedings of the 2014 WIN3* (2016), 125–160.

(with A. Deines, L. Long, H. Swisher, F.T. Tu) “Generalized Legendre curves and quaternionic multiplication,” *Journal of Number Theory* 161 (2016), 175-203.

(with D. McCarthy) “Hypergeometric type identities in the  $p$ -adic setting and modular forms,” *Proceedings of the American Mathematical Society* 144 (2016), 1493-1508.

(with A. Graham-Squire, R. Lamb, K. O’Hara, L. Zack) “Flipping Freshman Mathematics,” *PRIMUS* 25: 9-10 (2015), 803-813.

(with M.J. Bertin, A. Feaver, M. Lalín, M. Manes) “Mahler measure of some singular K3-surfaces,” *Contemporary Mathematics* 606 (2013), 149-169.

“Traces of Hecke operators in level 1 and Gaussian hypergeometric functions,” *Proceedings of the American Mathematical Society* 141 (2013), 1871-1881.

“Hypergeometric functions over  $\mathbb{F}_p$  and relations to elliptic curves and modular forms,” *Proceedings of the American Mathematical Society* 138 (2010), 109-123.

*Hypergeometric functions over finite fields and relations to modular forms and elliptic curves*, Ph.D. Thesis, Texas A&M University, 2007.

## Teaching Experience

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### High Point University Courses

Finite Mathematics	2009-2012
Precalculus	2012, 2016
Business Calculus	2011, 2014-2016
Calculus I	2009-2016
Calculus II	2010, 2012, 2014
Calculus III	2013
Intro to Mathematical Thought	2009, 2015
Linear Algebra	2016
Number Theory	2011, 2014
Abstract Algebra	2010, 2012
First Year Seminar: Mathematics and Music	2012, 2013, 2015

### High Point University Student Projects

<i>Partitions with Particular Summands</i> , Joshua Parsons	2015
<i>Elliptic Curves and Cryptology</i> , Samantha Allen	2012
<i>Optimal Assignment Problems</i> , Kaitlin Brindley	2010

### United States Military Academy Courses

Mathematical Modeling and Introduction to Calculus	2009
Differential Calculus	2008
Integral Calculus	2007
Calculus Bridge for Math/CS Majors	2007
Foundations in Mathematics	2008
Algebraic Number Theory (Independent Study)	2009
Number Theory (Independent Study)	2008
Senior Thesis II (Coordinator)	2009

### Texas A&M University Courses

Finite Mathematics	2004
Integral Calculus (TA)	2004-2006
Differential Calculus (TA)	2003

## Workshops

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<b>re:boot Number Theory</b> Duke University	April 2016
<b>Women in Numbers 3</b> Banff International Research Center Invited Participant	April 2014
<b>Summer Teaching Institute</b> NC A&T University	May 2013
<b>SCALE-UP and Flipped Classrooms</b> UNC Pembroke	April 2013
<b>Women in Numbers 2</b> Banff International Research Center Invited Participant	November 2011
<b>MAA PREP Workshop on Algebraic Number Theory</b> Williams College	June 2010

## Conference Presentations

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<b>MAA Session on Using Flipping Pedagogy to Engage Students in Learning Mathematics</b> Joint Mathematics Meetings <i>Flipping freshman mathematics: discouraging results and how to adapt for the future</i>	January 2015
<b>North Carolina Council of Teachers of Mathematics Annual Meeting</b> Greensboro, NC <i>Flipping freshman mathematics</i>	October 2014
<b>Western Section Meeting of the AMS*</b> Special Session on Number Theory Texas Tech University <i>Traces of Hecke operators in level 1 and Gaussian hypergeometric functions</i>	April 2014
<b>Mathematical Congress of the Americas*</b> Special Session on Number Theory Guanajuato, Mexico <i>Traces of Hecke operators in level 1 and Gaussian hypergeometric functions</i>	August 2013
<b>Southeastern Regional Meeting on Numbers</b> Western Carolina University <i>Mahler measures of some K3-surfaces</i>	March 2012
<b>Southeastern Section Meeting of the AMS*</b> Special Session on Modular Forms, Elliptic Curves, and Related Topics Wake Forest University <i>An update on traces of Hecke operators in level 1 and Gaussian hypergeometric functions</i>	September 2011

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\*Denotes invited presentation

<b>Southeastern Regional Meeting on Numbers</b> Armstrong Atlantic State University <i>Traces of Hecke operators in level 1 and Gaussian hypergeometric functions</i>	April 2011
<b>Southeastern Regional Meeting on Numbers</b> Davidson College <i>Hypergeometric functions over <math>\mathbb{F}_p</math> and counting points</i>	April 2010
<b>MAA Southeastern Sectional Meeting</b> Elon University <i>Patterns and integer valued polynomials</i>	March 2010
<b>AMS Special Session on Automorphic and Modular Forms*</b> Joint Mathematics Meetings <i>Traces of Hecke operators in level 1 and Gaussian hypergeometric functions</i>	January 2009
<b>Annual Workshop on Automorphic Forms and Related Topics</b> Texas A&M University <i>Traces of Hecke operators in level 1 and hypergeometric functions over <math>\mathbb{F}_p</math></i>	March 2008
<b>AWM Workshop for Graduate Students and Recent PhDs</b> Joint Mathematics Meetings <i>On hypergeometric functions over <math>\mathbb{F}_p</math> and Ramanujan's <math>\tau</math>-function</i>	January 2008
<b>Summer Program for Women in Mathematics Reunion</b> Joint Mathematics Meetings <i>Ramanujan's <math>\tau</math>-function and counting points on elliptic curves</i>	January 2008
<b>Illinois Number Theory Fest</b> University of Illinois at Urbana-Champaign <i>Hypergeometric functions over <math>\mathbb{F}_p</math> and Ramanujan's <math>\tau</math>-function</i>	May 2007

#### Colloquium Talks

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<b>Mathematics Seminar</b> High Point University <i>Integer valued polynomials</i>	September 2012
<b>Research Experiences for Undergraduates</b> Clemson University <i>Patterns and integer valued polynomials</i>	June 2012
<b>Computational Mathematics Seminar</b> University of North Carolina at Greensboro <i>What are Gaussian hypergeometric functions?</i>	April 2011
<b>Center for Faculty Development</b> United States Military Academy <i>Ramanujan's <math>\tau</math>-function and elliptic curves</i>	February 2008
<b>Faculty Seminar</b> United States Military Academy <i>Elliptic curves and the congruent number problem</i>	September 2007
<b>Number Theory Seminar</b> Texas A&M University <i>Hypergeometric functions over finite fields and relations to elliptic curves</i>	February 2007

## Funding Received

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<b>Growth Mindset Scholar, High Point University:</b> \$6500	2016-2018
<b>Think Big Grant, High Point University</b> Project: Flipped Classroom Experiment: \$15,000	2013
<b>American Mathematical Society Travel Grant:</b> \$1800	2013

## Professional Service

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### Organizer

Southeastern Conference for Undergraduate Women in Mathematics	November 2017
re:boot Number Theory	June 2017
Association for Women in Mathematics Research Symposium, Special Session on Number Theory	April 2015
Southeastern Regional Meeting on Numbers	April 2013

### Referee (9 articles)

*Archiv der Mathematik*  
*PRIMUS*  
*Proceedings of the American Mathematical Society*  
*Ramanujan Journal*

**Reviewer, *Mathematical Reviews* (15 articles)** 2010 - Present

### High Point University, General

College of Arts & Sciences Curriculum Committee (Chair)	2015-Present
Employee Wellness Committee	2015-Present
Honors Scholar Committee (Co-Chair)	2013-2016
Honors Scholar Committee	2010-2016
Undergraduate Research and Creative Works Committee	2012-2013
Student Life Committee	2010-2012

### High Point University, Departmental

Departmental Awards Committee	2014-2016
Independent Reader: Honors Senior Thesis	2013-2016
Departmental Awards Committee (Chair)	2012-2013
Mathematics Search Committee (Chair)	2011-2012
Mathematics Search Committee	2009-2010

### United States Military Academy

Departmental Awards Committee (Chair)	2009
Department Academic Counselor	2008-2009
Independent Reader: Honors Senior Thesis	2008
Fundamental Concepts Mentor	2008

## Selected Honors and Awards

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NSF VIGRE Fellowship	2004-2005
	2002-2003
Outstanding Teaching Assistant Award	2004
AUF Tuition Award	2003-2004
Outstanding Mathematics Graduate	2002

## **Memberships**

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American Mathematical Society  
Mathematical Association of America  
Association for Women in Mathematics

## **Computer Skills**

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Maple, Mathematica, Sage, Pari/GP, L<sup>A</sup>T<sub>E</sub>X, HTML