Matthew G. Boylan

CONTACT Information LeConte College Phone: (803) 777-7542 Mathematics Department Fax: (803) 777-3783

University of South Carolina E-mail: boylan@math.sc.edu

Columbia, SC 29208 USA WWW: http://people.math.sc.edu/boylan/

CITIZENSHIP

Born October 9, 1976 in Stevens Point, WI, USA

RESEARCH INTERESTS Number theory, modular forms.

EDUCATION

University of Wisconsin at Madison, Madison, WI USA

Ph.D., Pure Mathematics, August 2002

- Thesis: "Congruences for the Fourier Coefficients of Modular Forms with Applications"
- Advisor: Ken Ono

University of Wisconsin at Madison, Madison, WI USA

B.S., Pure Mathematics, May, 1999

Professional Positions

University of South Carolina, Columbia, SC USA

Professor

Associate Professor

Aug 2009 - Jan 2015

Assistant Professor Aug 2005 - Aug 2009

University of Illinois at Urbana-Champaign, Urbana, IL USA

NSF VIGRE Visiting Research Assistant Professor

Aug 2002 - Aug 2005

Publications

- 1. U_p -operators and congruences for Shimura images, Journal of Number Theory, (2020), doi: https://doi.org/10.1016/j.jnt.2020.08.006.
- 2. Hecke operators on certain subspaces of integral weight modular forms. (with K. Brown). *International Journal of Number Theory*, 10 (2014), no. 7, 1909 1919.
- **3.** Congruences for the partition function modulo prime powers. (with J. Webb) Transactions of the American Mathematical Society, **365** (2013), 2169 2206.
- 4. On the vanishing of Fourier coefficients of certain genus zero newforms. (with S. Garthwaite and
- J. Webb). International Journal of Number Theory, 7 (2011), no. 5, 1229-1245.
- **5.** Quadratic AGM and p-adic limits arising from modular forms. (with S. Garthwaite) Bulletin of the London Mathematical Society **42** (2010), no. 3, 527 537.
- **6.** Arithmetic properties of certain level one mock modular forms. *International Journal of Number Theory* **6** (2010), no. 1, 185-202.

- 7. Odd coefficients of weakly holomorphic modular forms. (with S. Ahlgren) *Mathematics Research Letters* 15 (2008), no. 3, 409-418.
- 8. Central critical values of modular L-functions and coefficients of half-integral weight modular forms modulo ℓ . (with S. Ahlgren) American Journal of Mathematics 129 (2007), no. 2, 429-454.
- **9.** Non-vanishing of the partition function modulo small primes. *International Mathematics Research Notices* (2006), Art. ID 46120, 17 pp.
- 10. 2-adic properties of Hecke traces of singular moduli. *Mathematics Research Letters* 12 (2005), no. 4, 593-609.
- 11. Coefficients of half-integral weight modular forms modulo ℓ^j . (with S. Ahlgren) Mathematische Annalen 331 (2005), no. 1, 219-241.
- **12.** Exceptional congruences for powers of the partition function. *Acta Arithmetica* **111** (2004), no. 2, 187-203.
- **13.** Arithmetic properties of the partition function. (with S. Ahlgren) *Inventiones Mathematicae* **153** (2003), no. 3, 487-502.
- **14.** Exceptional congruences for coefficients of certain eta-product newforms. *Journal of Number Theory* **98** (2003), no. 2, 377-389.
- **15.** Congruences for 2^t -core partition functions. Journal of Number Theory **92** (2002), no. 1, 131-138.
- **16.** Parity of the partition function in arithmetic progressions, II. (with K. Ono) Bulletin of the London Mathematical Society **33** (2001), no. 5, 558-564.
- 17. Swinnerton-Dyer type congruences for certain Eisenstein series. q-Series with Applications to Combinatorics, Number Theory, and Physics (Urbana, IL, 2000), 93-108, Contemporary Mathematics, 291, Amer. Math. Soc., Providence, RI, 2001.
- **18.** Congruences for ${}_{2}F_{1}$ hypergeometric functions over finite fields. Ramanujan Journal 5 (2001), no. 4, 385-390.

Papers in Preparation

- Hecke operators and eta-quotients (with C. Warnock)
- Explicit formulas for the Shimura Correspondence.

| GRANTS I. Personal Grants SC EPSCoR IDeA Scientific Advocate Network 18-SA06, \$10,000 Graduate Recruiting in Mathematics at the University of South Carolina NSF DMS-0901068, Harmonic Maass Forms (PI), \$121,000 NSF DMS-0600400, Modular Forms and Number Theory (PI), \$109,930 II. Conference Grants A. National Science Foundation |
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| Graduate Recruiting in Mathematics at the University of South Carolina NSF DMS-0901068, Harmonic Maass Forms (PI), \$121,000 NSF DMS-0600400, Modular Forms and Number Theory (PI), \$109,930 II. Conference Grants |
| NSF DMS-0901068, <i>Harmonic Maass Forms</i> (PI), \$121,000 2009 - 2012 NSF DMS-0600400, <i>Modular Forms and Number Theory</i> (PI), \$109,930 2006 - 2009 II. Conference Grants |
| II. Conference Grants |
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| A. National Science Foundation |
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| • DMS-2001418, Number Theory Meetings in the Southeast (PI), \$15,316 2020 - 2021 |
| • DMS-1902170, Number Theory Meetings in the Southeast (co-PI), \$15,051 2019 - 2020 |
| • DMS-1802259, Number Theory Meetings in the Southeast (PI), \$14,980 2018 - 2019 |
| • DMS-1701290, Number Theory Meetings in the Southeast (co-PI), \$22,233 2017 - 2018 |
| • DMS-1601239, Number Theory Meetings in the Southeast (PI), \$14,695 2016 - 2017 |
| • DMS-1502293, Number Theory Meetings in the Southeast (co-PI), \$13,695 2015 - 2016 |
| • DMS-1404714, Number Theory Meetings in the Southeast (co-PI), \$13,360 2014 - 2015 |
| • DMS-1303254, Number Theory Meetings in the Southeast (co-PI), \$12,696 2013 - 2014 |
| • DMS-1201126, Number Theory Meetings in the Southeast (co-PI), \$12,012 2012 - 2013 |
| • DMS-1101301, Number Theory Meetings in the Southeast (co-PI), \$11,223 2011 - 2012 |
| • DMS-1001553, Palmetto Number Theory Series (PI), \$13,423 2010 - 2011 |
| • DMS-0901732, Palmetto Number Theory Series (co-PI), \$11,096 2009 - 2010 |
| DMS-0801150, Palmetto Number Theory Series (PI), \$7,950 DMS-0703547, Palmetto Number Theory Series (co-PI), \$7,413 2007 - 2008 |
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| B. National Security Agency |
| • Number Theory Meetings in the Southeast (PI), \$16,828 2020 - 2021 |
| • Number Theory Meetings in the Southeast (PI), \$14,170 2018 - 2019 |
| • Number Theory Meetings in the Southeast (PI), \$14,625 2016 - 2017 |
| • Number Theory Meetings in the Southeast (co-PI), \$14,670 2014 - 2015 |
| • Number Theory Meetings in the Southeast (co-PI), \$14,942 2012 - 2013 |
| • Palmetto Number Theory Series (PI), \$15513 2010 - 2011 |
| • Palmetto Number Theory Series (PI), \$10,070 2008 - 2009 |
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| Invited 1. Arithmetic properties of a distinguished subspace of modular forms, Nov 2014 |
| CONFERENCE AMS Special Session on Connections in Number Theory, Greensboro, NC |
| Presentations 2. Explicit formulas for the Shimura Correspondence, Mar 2014 |
| AMS Special Session on Arithmetic of Algebraic Curves, Knoxville, TN |
| 3. The partition function modulo prime powers, Oct 2012 |
| AMS Special Session on Harmonic Maass Forms and q -series, Tucson, AZ |
| 4. The partition function modulo prime powers, Feb 2012 |
| Automorphic Forms Symposium, Cologne, Germany |
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| 5. The arithmetic-geometric mean and p-adic limits of modular forms, Dec 2009 |
| International Conference on Number Theory, SASTRA Univ., Kumbakonam, India |
| 6. The arithmetic-geometric mean and p-adic limits of modular forms, Oct 2009 |
| AMS Special Session on Modular and Automorphic Forms, Boca Raton, FL |

| 7. Mock modular forms on $SL_2(\mathbb{Z})$, AMS Special Session on Automorphic and Modular Forms, Washington, D.C | Jan 2009 |
|---|--------------|
| 8. Eulerian series and modularity, MAA Special Session on Combinatorial Number Theory, Charleston, SC. | Mar 2008 |
| 9. Mock modular forms on $SL_2(\mathbb{Z})$, Conference on Partitions, q -series, and Modular Forms, Gainesville, FL. | Mar 2008 |
| 10. Odd coefficients of weakly holomorphic modular forms, AMS Special Session on Automorphic Forms and Related Topics, San Diego, CA. | Jan 2008 |
| 11. Odd coefficients of weakly holomorphic modular forms, Integers Conference 2007, Carrollton, GA. | Oct 2007 |
| 12. Non-vanishing of the partition function modulo small primes, 21st Annual Clemson University Mini-Conference on Combinatorics and Optimization, Clemson, SC. | Oct 2006 |
| 13. Non-vanishing of the partition function modulo small primes, AMS Special Session on q-series and Partitions, San Francisco, CA. | Apr 2006 |
| 14. Non-vanishing of the partition function modulo small primes, AMS Special Session on Number Theory, South Bend, IN. | Apr 2006 |
| 15. Non-vanishing of central critical values of modular L-functions modulo ℓ , Special Session on L-functions, Bowling Green, KY. | Mar 2005 AMS |
| 16. Arithmetic properties of the partition function, Conference on Additive Number Theory, Gainesville, FL. | Nov 2004 |
| 17. Coefficients of half-integral weight modular forms modulo ℓ^j , Integers Conference 2003, Carrollton, GA. | Nov 2003 |
| 18. Arithmetic properties of the partition function, AMS Special Session on q-Series and Partitions, San Francisco, CA. | May 2003 |
| 19. Arithmetic properties of the partition function, AMS Special Session on Arithmetic Algebraic Geometry, Madison, WI. | Oct 2002 |
| 20. Exceptional congruences for modular form coefficients, AMS Special Session on Number Theory, Atlanta, GA. | Mar 2002 |

| Colloquiums | 1. Modular forms and partitions, University of Florida | Feb 2010 |
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| | 2. Modular forms and partitions, Georgia Southern University | Sep 2009 |
| | 3. Modular forms and partitions, Bucknell University | Mar 2009 |
| | 4. Modular forms and partitions, Furman University | Feb 2006 |
| | 5. Arithmetic properties of the Fourier coefficients of modular forms, University of Iowa | Feb 2005 |
| | 6. Arithmetic properties of the Fourier coefficients of modular forms, University of Colorado | Feb 2005 |
| | 7. Arithmetic properties of the Fourier coefficients of modular forms, Texas A&M University | Feb 2005 |
| | 8. Arithmetic properties of the Fourier coefficients of modular forms, University of Pittsburgh | Jan 2005 |
| | 9. Arithmetic properties of the Fourier coefficients of modular forms, University of South Carolina | Jan 2005 |
| | 10. Arithmetic properties of the Fourier coefficients of modular forms, University of Oregon | Jan 2005 |
| Invited Seminars | 1. Modular forms and the roots of $x^3 - x - 1 \pmod{p}$, Clemson University | Jun 2012 |
| | 2. The partition function modulo prime powers, Emory University | Aug 2012 |
| | 3. Quadratic AGM and p-adic limits of modular forms, Brigham Young University | Nov 2010 |
| | 4. Quadratic AGM and p-adic limits of modular forms, Emory University | Sep 2010 |
| | 5. The irrationality of $\zeta(3)$ and arithmetic properties of Apéry numbers. Clemson University | Jun 2010 |
| | 6. Quadratic AGM and p-adic limits of modular forms, University of Florida | Feb 2010 |
| | 7. Quadratic AGM and p-adic limits of modular forms, University of Wisconsin | Jun 2009 |

| | 8. Hecke operators in the study of harmonic Maass forms, Bucknell University | Apr 2009 |
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| | 9. Theta cycles in the study of partition functions, University of Wisconsin | Jun 2008 |
| | 10. Mock modular forms on $SL_2(\mathbb{Z})$, Texas A&M University | Mar 2008 |
| | 11. Ramanujan's congruences, Clemson University | Jun 2006 |
| | 12. Ramanujan's congruences, University of Wisconsin | Jun 2006 |
| | 13. Non-vanishing of $p(n)$ modulo 3, Penn State University | Apr 2006 |
| | 14. Arithmetic properties of the partition function, Clemson University | Apr 2006 |
| | 15. Modular forms and partitions, University of Georgia | Oct 2005 |
| | 16. Non-vanishing of central critical values of modular L-functions modulo ℓ , University of Georgia | Oct 2005 |
| | 17. Non-vanishing of central critical values of modular L-functions modulo ℓ , Johns Hopkins University | Apr 2005 |
| | 18. Non-vanishing of central critical values of modular L-functions modulo ℓ , Texas A&M University | Nov 2004 |
| | 19. Non-vanishing of central critical values of modular L-functions modulo ℓ , Purdue University | Oct 2004 |
| | 20. Half-integral weight modular forms with few non-vanishing coefficients modulo ℓ , University of Wisconsin | Oct 2004 |
| | 21. Coefficients of half-integral weight modular forms modulo ℓ^j , University of Wisconsin | Feb 2004 |
| Public Presentations | 1. Counting to infinity: My journey into mathematics, Last Lecture Series, University of South Carolina | Apr 2017 |
| | 2. Slices of Pi, Pi Day Address, Spring Valley High School, Columbia, SC | Mar 2017 |
| | 3. Addition and Counting, Steps to STEM, University of South Carolina | Oct 2011 |

| Contributed Conference Presentations | 1. Quadratic AGM and p-adic limits of modular forms, Palmetto Number Theory Series X, Armstrong Atlantic State University | Sep 2009 |
|--|---|----------|
| | 2. Mock modular forms on $SL_2(\mathbb{Z})$, Southeastern Regional Meeting on Numbers, Clemson University | Apr 2008 |
| | 3. Odd coefficients of weakly holomorphic modular forms, Palmetto Number Theory Series III, Charleston, SC | Oct 2007 |
| | 4. Coefficients of weakly holomorphic modular forms modulo ℓ , Illinois Number Theory Fest, University of Illinois | May 2007 |
| | 5. Non-vanishing of weakly holomorphic modular form coefficients modulo ℓ , Southeastern Regional Meeting on Numbers, Wake Forest University | Apr 2007 |
| | 6. Non-vanishing of the partition function modulo small primes, 9th Meeting of the Canadian Number Theory Association, University of British Columbia | Jul 2006 |
| | 7. Non-vanishing of the partition function modulo small primes, Southeast Regional Meeting on Numbers, Furman University | Mar 2006 |
| | 8. Central critical values of modular L-functions modulo ℓ , West Coast Number Theory Conference, Pacific Grove, CA | Dec 2005 |
| | 9. 2-adic properties of traces of singular moduli, West Coast Number Theory Conference, University of Nevada at Las Vegas | Dec 2004 |
| | 10. 2-adic properties of traces of singular moduli,8th Meeting of the Canadian Number Theory Association,University of Toronto | Jun 2004 |
| | 11. Coefficients of half-integral weight modular forms modulo ℓ^j , Conference in Honor of Morris Newman's 80th Birthday, University of California at Santa Barbara | Apr 2004 |
| | 12. 2-adic properties of traces of singular moduli,18th Annual Workshop on Automorphic Forms and Related Topics,University of California at Santa Barbara | Mar 2004 |
| | 13. Coefficients of half-integral weight modular forms modulo ℓ^j , West Coast Number Theory Conference, Pacific Grove, CA | Dec 2003 |
| | 14. Coefficients of half-integral weight modular forms modulo ℓ^j , Midwest Number Theory Conference, University of Wisconsin | Oct 2003 |
| | 15. Exceptional congruences for modular form coefficients, 7th Meeting of the Canadian Number Theory Association, University of Montreal | May 2002 |
| | 16. Exceptional congruences for modular form coefficients, West Coast Number Theory Conference, Pacific Grove, CA | Dec 2002 |

| Illinois Number Theory Conference, University of Illinois | |
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| 18. Parity of the partition function in arithmetic progressions, West Coast Number Theory Conference, University of San Diego | Dec 2000 |
| 19. Parity of the partition function in arithmetic progressions, q-Series with Applications to Combinatorics, Number Theory, and University of Illinois | Oct 2000 Physics, |
| 20. Congruences for 2^t -core partition functions, Millenial Conference on Number Theory, University of Illinois | May 2000 |
| University of South Carolina Rising Star Award | 201 |
| Project NExT (New Experiences in Teaching) Fellow University of Illinois Incomplete List of Teachers Ranked as Excellent by Their Students | 2005 - 2000 2000 |
| West Coast Number Theory Conference Selfridge Prize for Excellence in Mathematics Presentation University of Wisconsin NSF VIGRE Graduate Student Fellow | 200; 1999 - 200; |
| | |
| Phi Beta Kappa, University of Wisconsin | 1996 |
| I. Undergraduate Courses | 1998 |
| | 1998 |
| Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration | |
| Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science | Fall 200 |
| J. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I | Fall 2000 Fall 2000 Fall 2010, Spring 2010 |
| J. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II | Fall 200 Fall 200 Fall 2010, Spring 201 |
| J. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I | Fall 200 Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 |
| J. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 |
| J. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 |
| J. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 |
| I. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra Math 544, Linear Algebra | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 Spring 2007, Fall 200 |
| I. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra Math 544, Linear Algebra Math 546H, Honors Abstract Algebra I | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 Spring 2007, Fall 200 Fall 200 |
| I. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra Math 546H, Honors Abstract Algebra I Math 546, Abstract Algebra I | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 Spring 2007, Fall 200 Fall 200 Spring 2017, 201 |
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| I. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra Math 546, Abstract Algebra I Math 546, Abstract Algebra II Math 547H, Honors Abstract Algebra II Math 550H, Honors Vector Calculus | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 Spring 2007, Fall 200 Fall 200 Spring 2017, 201 Spring 201 Spring 201 Spring 201 Spring 201 |
| I. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra Math 546, Abstract Algebra I Math 546, Abstract Algebra II Math 550H, Honors Vector Calculus Math 580, Number Theory B. University of Illinois | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 Spring 2007, Fall 200 Fall 200 Spring 2017, 201 Spring 201 Spring 201 Spring 201 Fall 2009; Summer 2013, 201 |
| I. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra Math 544, Linear Algebra Math 546, Abstract Algebra I Math 547H, Honors Abstract Algebra II Math 550H, Honors Vector Calculus Math 580, Number Theory B. University of Illinois | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 Spring 2007, Fall 200 Fall 200 Spring 2017, 201 Spring 201 Spring 201 Spring 201 Spring 201 Spring 201 |
| I. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra Math 544, Linear Algebra Math 546H, Honors Abstract Algebra I Math 547H, Honors Abstract Algebra II Math 550H, Honors Vector Calculus Math 580, Number Theory B. University of Illinois Math 213, Discrete Mathematics | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 Spring 2007, Fall 200 Fall 200 Spring 2017, 201 Spring 201 |
| I. Undergraduate Courses A. University of South Carolina Math 122, Calculus for Business Administration and Social Science Math 141, Calculus I Math 142, Calculus II Math 241H, Honors Calculus III Math 374, Discrete Structures Math 531, Foundations of Geometry Math 544H, Honors Linear Algebra Math 546H, Honors Abstract Algebra I Math 546, Abstract Algebra I Math 547H, Honors Abstract Algebra II Math 550H, Honors Vector Calculus Math 580, Number Theory B. University of Illinois Math 213, Discrete Mathematics Math 285, Differential Equations | Fall 200 Fall 2010, Spring 201 Fall 2011, 2012, 2014 - 2019 Spring 2013 - 2017, 202 Spring 200 Fall 2011, 2014, 2016 - 201 Spring 2006, 2014, 201 Spring 2007, Fall 200 Fall 200 Spring 2017, 201 Spring 2017 Spring 201 Fall 2009; Summer 2013, 201 |

Honors and Awards

Teaching

II. Graduate Courses

University of South Carolina

- Math 701, Algebra I
- Math 702, Algebra II
- Math 780, Elementary Number Theory
- Math 784, Algebraic Number Theory
- Math 788B, Introduction to Modular Forms
- Math 788E, Arithmetic of Elliptic Curves

Fall 2012, 2020 Spring 2013, 2021 Fall 2015 Spring 2008, 2010, 2018 Fall 2006, 2015; Spring 2012 Fall 2008

Mentoring

I. Graduate Students

Ph.D Students

- Cuyler Warnock, 2022 (expected)
- Kenny Brown, 2013
- John Webb, 2011, currently tenured Associate Professor at James Madison University

Masters Students

- Jennifer Larson, 2008
- Jonathan Mason, 2007
- Mohamad Youssef, 2007

II. Undergraduate Students

Honors Theses Advised

- Jacob Folks, 2021 (expected)
- Nicholas Torello, 2019
- Marisa Rank, 2018
- Cathy Hardin, 2012
- Timothy Harper, 2010

Referee work

99 articles refereed in the following 36 journals:

Abhandlungen aus dem Mathematischen Seminar der Universitat Hamburg, Acta Arithmetica, Advances in Mathematics, American Mathematical Monthly, Annals of Combinatorics, Applicable Analysis and Discrete Mathematics, Archiv der Mathematik, Bulletin of the Australian Mathematical Society, Canadian Journal of Mathematics, Colloquium Mathematicum, Discrete Mathematics, Electronic Journal of Combinatorics, European Journal of Combinatorics, Fields Institute Communications Series, Integers, International Journal of Mathematics and Mathematical Sciences, International Journal of Number Theory, International Mathematics Research Notices, Israel Journal of Mathematics, Involve, Journal de Théorie des Nombres Bordeaux, Journal of Combinatorial Theory, Series A, Journal of Computational Mathematics and Optimization, Journal of Number Theory, Monatshefte für Mathematik, Proceedings of the American Mathematical Society, Proceedings of the Edinburgh Mathematical Society, Proceedings of the London Mathematical Society, Proceedings of the National Academy of Sciences, Ramanujan Journal, Research in the Mathematical Sciences, Research in Number Theory, Rocky Mountain Journal of Mathematics, SpringerPlus, Transactions of the American Mathematical Society.

Mathematical Reviews (2002 - 2010): 65 articles

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A. Department Service Fall 2010 - Spring 2011 • Ad Hoc Budget Committee • Ad Hoc Faculty Replenishment Committee Fall 2010, Fall 2011 • Ad Hoc Promotion and Tenure Document Fall 2012 - Spring 2013 Revision Committee • Awards Committee Fall 2019 - present • Colloquium Committee Fall 2011 - Spring 2013, Spring 2014 - Spring 2017, Fall 2019 - present Fall 2015, Spring 2016 • Committee of Full Professors (Chair) • Director of Graduate Studies Fall 2017 - present • Faculty Advisory Committee Fall 2007 - Spring 2009, Fall 2010 - Spring 2012, Fall 2016 - Spring 2018 Fall 2005, Fall 2009 - Spring 2011 • High School Math Contest Committee • Hiring Committee Fall 2006, Spring 2007, Fall 2011 - Spring 2013, Fall 2014, Spring 2015 • Peer Review of Teaching Committee T Spring 2014 Fall 2012, Spring 2013, • Ph.D Algebra Qualifying Exam Co-Author Fall 2013, Spring 2014 • Ph.D Thesis Committees Spring 2003 - present (14 total, including 2 of my own, and 3 at U. Illinois) • Pi Mu Epsilon and Gamecock Math Club Advisor Fall 2005 - Spring 2008 Fall 2016, Spring 2017 • Post-Tenure Review Committee Chair • Self-Study Committee Fall 2017, Spring 2018 • Undergraduate Advising Committee Fall 2005 - Spring 2013 • Undergraduate Advisory Council Fall 2008 - Spring 2011 B. College of Arts and Sciences and University • Academic Planning Council Spring 2014 - Spring 2016 of the College of Arts and Sciences • Faculty Senator Fall 2007 - Spring 2010 • Graduate School Council Fall 2018 - present • McNair Scholar Mentor (mentored 4 students) Fall 2011 - Spring 2018 • Non-Tenure Track Working Group Fall 2016, Spring 2017 of the College of Arts and Sciences • South Carolina Honors College Faculty Fellow Fall 2017 - present • University Faculty Grievance Committee Fall 2018 - present C. Other Service

| c. Other Service | |
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| • American Mathematical Society Southeast Section Program Commit | tee 2010 - 2012 |
| • External Advisor for Senior Thesis | Spring 2006, Fall 2009 |
| of two local high school students | |
| • External Reviewer for 6 Tenure and Promotion Cases | Fall 2010 - Fall 2018 |
| • James L. Solomon Jr. Event Planning Committee | Fall 2018, Spring 2019 |
| • Judge for UofSC Junior Science and Humanities Symposium | 2009 - 2016 |
| • Judge for UofSC Region II Science and Engineering Fail | 2006 - 2010 |
| • Pre-tenure Leave Host for Sharon Garthwaite, Bucknell University | Fall 2009 |
| • Review of 5 grants (NSA, NSF) | 2006 - 2011 |
| • Volunteer for UofSC High School Mathematics Contest | 2006 - present |

Conferences and I. Conferences Organized

SEMINAR ORGANIZATION

A. Palmetto Number Theory Series (PANTS)

2006 - present

• Conference series co-founder

• Local host and grant administrator

Fall 2006 - 2010, Fall 2012, 2014, 2016, 2018

B. Southeastern Regional Meeting on Numbers (SERMON)

Fall 2012 - present

(Grant administrator in even-numbered years)

C. Illinois Number Theory Conference

Spring 2004

Fall 2011

II. Special Sessions of the American Mathematical Society Organized

A. Automorphic Forms and Related Topics, Fall 2014

Southeast Sectional Meeting, UNC-Greensboro

B. Modular Forms in Number Theory,

Southeast Sectional Meeting, Wake Forest University

C. Modular Forms and Analytic Number Theory, Fall 2006

Southeast Sectional Meeting, University of Arkansas

III. Seminars Organized

A. Number Theory Seminar, University of South Carolina
 B. Number Theory Seminars, University of Illinois
 Fall 2005 - Fall 2012
 Fall 2004, Spring 2005

C. Seminar on "Topics in Modular Forms", University of Illinois