

Jim L. Brown

Work Address:

Department of Mathematics

Occidental College

Los Angeles, CA 90041

Phone TBD

jimlb@oxy.edu

<http://jim-brown.oxycreates.org>

ACADEMIC POSITIONS

- | | |
|-------------|---|
| 2018 - | Professor and Chair, Occidental College, Los Angeles, CA. |
| 2017 - 2018 | Professor, Clemson University, Clemson, SC. |
| 2012 - 2017 | Associate Professor, Clemson University, Clemson, SC. |
| 2015-2016 | Gorenstein Visiting Associate Professor of Mathematics, City University of New York - Queens College, Queens, NY. |
| 2008-2012 | Assistant Professor, Clemson University, Clemson, SC. |
| 2007-2008 | Olga Taussky - John Todd Instructor, California Institute of Technology, Pasadena, CA. |
| 2005-2007 | VIGRE Arnold Ross Assistant Professor, The Ohio State University, Columbus, OH. |

EDUCATION

- | | |
|-----------|---|
| 1999-2005 | University of Michigan, Ann Arbor, Michigan. Ph.D. in Mathematics, July 2005. Dissertation: <i>Saito-Kurokawa Lifts, L-Values for $GL(2)$, and Congruences Between Siegel Modular forms</i> Advisor: Prof. Christopher Skinner |
| 1995-1999 | Michigan State University, East Lansing, Michigan. B.S. with High Honors in Mathematics, December, 1998. |

CITIZENSHIP

United States of America.

RESEARCH

Current Interests

Algebraic number theory, applications of algebraic geometry and number theory to coding theory, automorphic forms, Galois representations, Iwasawa theory

HONORS AND AWARDS

- | | |
|-----------|--|
| 2018 | Mathematical Sciences Outstanding Service to Graduate Students Award |
| 2013 | Mathematical Sciences Faculty Teaching Award Clemson University, Clemson, SC. |
| 2004-2005 | Graduate Student Instructor of the Year University of Michigan, Ann Arbor, MI. |
| 2000-2004 | VIGRE Fellowship , University of Michigan, Ann Arbor, MI. |

RESEARCH PAPERS

1. J. Brown and H. Li, *Congruence primes for automorphic forms on symplectic groups*, in preparation.
2. J. Brown, *Pullbacks of Eisenstein series on $U(3,3)$ and congruence primes for Siegel modular forms*, preprint, 44 pages.
3. J. Brown and K. Klosin, *Congruence primes for automorphic forms on unitary groups and applications to the arithmetic of Ikeda lifts*, Kyoto J. Math., to appear , 37 pages, 2017.
4. J. Brown and K. Klosin, *On the action of the U_p operator on Siegel modular forms*, Rama. J., 19 pages, 2016, <https://doi.org/10.1007/s11139-016-9833-x>.
5. J. Brown, D. Heras, K. James, R. Keaton, A. Qian, *Amicable pairs and aliquot cycles for elliptic curves over number fields*, Rocky Mountain Math. J., **46**(6), 1853-1866, 2016.
6. J. Brown, R. Cass, K. James, R. Keaton, S. Parenti, D. Shankman, *Counting tamely ramified extensions of local fields up to isomorphism*, Integers, #A53, **16**, 1-12, 2016.
7. J. Brown and D. Zantout, *Mixed level Saito-Kurokawa lifts*, Rama. J., **39**, 247-257, 2016.

8. M. Agarwal and J. Brown, *Saito-Kurokawa lifts of odd square-free level*, Kyoto J. Math, **55**(3), 641-662, 2015.
9. J. Brown and R. Keaton, *Congruence Primes for Ikeda Lifts and the Ikeda ideal*, Pacific J. Math, **274**(1), 27-52, 2015.
10. J. Brown, A. Hasmani, L. Hiltner, A. Kraft, D. Scofield, K. Wash, *Classifying extensions of the field of formal Laurent series over \mathbb{F}_p* , Rocky Mountain Math. J., **45**(1), 115-130, 2015.
11. J. Brown, R. Cass, R. Keaton, S. Parenti, D. Shankman, *Degree 14 extensions of \mathbb{Q}_7* , Int. J. of Pure and Appl. Math., **100**(2), 337-345, 2015.
12. M. Agarwal and J. Brown, *On the Bloch-Kato conjecture for elliptic modular forms of square-free level*, Math. Z., **276**(3), 889-924, 2014.
13. J. Brown and A. Pitale, *Special values of L-functions for Saito-Kurokawa lifts with square-free level*, Math. Proc. Cambr. Phil. Soc., **155**(2), 237-255, 2013.
14. J. Brown and R. Keaton, *Level stripping for Siegel modular forms with reducible Galois representations*, J. Number Theory, **133** (5), 1492-1501, 2013.
15. N. Amersi, J. Beyerl, J. Brown, A. Proffer, L. Rolén, *Pullbacks of Siegel Eisenstein series and associated critical L-values*, Rama. J., **27**(2), 151-162, 2012.
16. J. Brown, *On the cuspidality of pullbacks of Siegel Eisenstein series to $\mathrm{Sp}(2m) \times \mathrm{Sp}(2n)$* , J. Number Theory, **131**, 106-119, 2011.
17. J. Brown, *On the cuspidality of pullbacks of Siegel Eisenstein series and applications to the Bloch-Kato conjecture*, Int. Math. Res. Not., **7**, 1706-1756, 2011.
18. J. Brown, *Special Values of L-functions on $\mathrm{GSp}_4 \times \mathrm{GL}_2$ and the Non-Vanishing of Selmer Groups*, Int. J. Number Theory, **6**(8), 1901-1926, 2010.
19. J. Brown, *On the congruence primes of Saito-Kurokawa lifts of odd square-free level*, Math. Res. Lett., **17**(5), 977-991, 2010.
20. J. Brown and Y. Li, *Level lowering for half-integral weight modular forms*, Proc. Amer. Math. Soc., **138**, 1171-1173, 2010.
21. J. Brown, *The first negative Hecke eigenvalue of genus 2 Siegel cuspforms with level $N \geq 1$* , Int. J. Number Theory, **6**(4), 857-867, 2010.
22. J. Brown and Y. Li, *Distribution of powers of the partition function modulo ℓ^j* , J. Number Theory, **129**, 2557-2568, 2009.
23. J. Brown, *Residually reducible representations of algebras over local Artinian rings*, Proc. Amer. Math. Soc., **136**, 3409-3414, 2008.

24. J. Brown, *Saito-Kurokawa lifts and applications to arithmetic*, Conference Proceedings of the 9th Autumn Workshop on Number Theory, Hakuba, Japan, 1-11, 2007.
25. J. Brown, *An inner product relation on Saito-Kurokawa lifts*, *Rama. J.*, **14**(1), 89-105, 2007.
26. J. Brown, *Saito-Kurokawa lifts and applications to the Bloch-Kato conjecture*, *Compos. Math.*, **143**(2), 290-322, 2007.

| |
|---|
| GRANTS (Total funding = \$2,555,540) |
|---|

1. *Number theory meetings in the southeast*, National Science Foundation, PI, 2017-2018, \$22,233.
2. *RTG: Coding theory, Cryptography, and Number Theory*, National Science Foundation, PI, 2016-2021, \$2,126,971.
3. *Southeast Number Theory Meetings*, National Science Foundation, Co-PI, 2015-16, \$13,615.
4. *Southeast Number Theory Meetings*, National Security Agency, Co-PI, 2015-16, \$15,675.
5. *p-adic methods for Jacobi modular forms and global points on elliptic curves*, Clemson University Research Grant Committee, PI, 2014-15, \$2,880.
6. *Southeastern conference for undergraduate women in mathematics*, TENSOR Women and Mathematics Grants, MAA, PI, 2014-15, \$3,000.
7. *Southeastern conference for undergraduate women in mathematics*, TENSOR Women and Mathematics Grants, MAA, PI, 2013-14, \$5,998.
8. *Southeastern number theory meetings*, National Science Foundation, Co-PI, 2013-14, \$12,696.
9. *PANTS and SERMON meetings in the Southeast*, National Security Agency, Co-PI, 2013-14, \$15,926.
10. *Collaborative Research: Research Experience for Undergraduates: Algebraic geometry, combinatorics, and number theory*, National Science Foundation, PI, 2012-14, \$240,789.
11. *Southeastern Number Theory Meetings*, National Science Foundation, Co-PI, 2012-13, \$12,012.
12. *Palmetto Number Theory Series/SouthEast Regional Meeting on Numbers*, National Security Agency, PI, 2011-12, \$14,483.
13. *Palmetto Number Theory Series/SouthEast Regional Meeting on Numbers*, National Science Foundation, Co-PI, 2011-12, \$11,223.
14. *The arithmetic of Siegel modular forms*, Young Investigator Grant, National Security Agency, PI, 2011-13, \$30,000.

15. *Palmetto Number Theory Series*, National Science Foundation, Co-PI, 2010-11, \$13,423.
16. *Palmetto Number Theory Series*, National Security Agency, PI, 2009-10, \$13,507.
17. *Palmetto Number Theory Series*, National Science Foundation, Co-PI, 2009-10, \$11,096.

| |
|----------------------------------|
| GRADUATE STUDENT ADVISING |
|----------------------------------|

Current Students

- Huixi Li (Ph.D. Clemson 2018)
- Hugh Geller (Ph.D. Clemson TBD)

Former Students

- Hugh Geller, “*Ramanujan type congruences for the Klingen-Eisenstein series*”, 77 pages, (M.S. Clemson '16)
- Rodney Keaton, “*Level stripping of genus 2 Siegel modular forms*,” 136 pages, (Ph.D. Clemson '14)
 - Initial employment: Three year postdoc at the University of Oklahoma
- Dania Zantout, “*On the cuspidality of Maass-Gritsenko and mixed level lifts*,” 247 pages, (Ph.D. Clemson '13)
 - Initial employment: Visiting assistant professor at Clemson University
- Sevasti (Cindy) Tagaris, (Job at NSA before completing M.S., '13)
- Rodney Keaton, “*Explicit level-lowering for 2-dimensional modular Galois representations*,” (M.S. Clemson '10, Advised jointly with Kevin James)

Graduate Student Research Papers: (co-authored are also listed under research papers above)

1. J. Brown, D. Heras (ugrad), K. James, R. Keaton (grad), A. Qian (ugrad), *Amicable pairs and aliquot cycles for elliptic curves over number fields*, Rocky Mountain Math. J. , **46**(6), 1853-1866, 2016.
2. J. Brown, R. Cass (ugrad), K. James, R. Keaton (grad), S. Parenti (ugrad), D. Shankman (ugrad), *Counting tamely ramified extensions of local fields up to isomorphism*, Integers, #A53, **16**, 1-12, 2016.
3. J. Brown and D. Zantout, *Mixed level Saito-Kurokawa lifts*, Rama. J., **39**, 247-257, 2016.

4. J. Brown and R. Keaton (grad), *Congruence Primes for Ikeda Lifts and the Ikeda ideal*, Pacific J. Math, **274**(1), 27-52, 2015.
5. J. Brown, A. Hasmani (ugrad), L. Hiltner (ugrad), A. Kraft (ugrad), D. Scofield (ugrad), K. Wash (grad), *Classifying extensions of the field of formal Laurent series over \mathbb{F}_p* , Rocky Mountain Math. J., **45**(1), 115-130, 2015.
6. J. Brown, R. Cass (ugrad), K. James, R. Keaton (grad), S. Parenti (ugrad), D. Shankman (ugrad), *Degree 14 extensions of \mathbb{Q}_7* , Int. J. Pure and Appl. Math., **100**(2), 337-345, 2015.
7. J. Brown and R. Keaton (grad), *Level stripping for Siegel modular forms with reducible Galois representations*, J. Number Theory, **133**(5), 1492-1501, 2013.
8. N. Amersi (ugrad), J. Beyerl (grad), J. Brown, A. Proffer (ugrad), L. Rolén (ugrad), *Pullbacks of Siegel Eisenstein series and associated critical L-values*, Rama. J., **27**(2), 151-162, 2012.

Doctoral Committee Member

- Aliekber Gürel (Caltech '07)
- Jeff Beyerl (Clemson '12)
- Luke Giberson (Clemson '17)
- Catherine Trentacoste (Clemson '12)
- Chris Johnson (Clemson '13)
- Kirsti Wash (Clemson '14)
- Sarah Anderson (Clemson '15)

Masters Committee Member

- Jeff Beyerl (Clemson '09)
- Catherine Trentacoste (Clemson '09)
- Jeannie Friedel (Clemson '10)
- Jason Hedetniemi (Clemson '12)
- Trevor Vildari (Clemson '13)
- Luke Giberson (Clemson '14)

| |
|---------------------------------------|
| UNDERGRADUATE STUDENT ADVISING |
|---------------------------------------|

Undergraduate Research Mentoring:

1. Clemson University

- Jarryd Boyle, Luna Bozeman, Catherine Kenyon, Sloan Neitert, Trevor Squires, Bo Sun
 - (a) 2016-17 Creative Inquiry: “Counting sums of squares using modular forms”
- Patrick Dynes (co-advised with Kevin James)
 - (a) 2015-17 Honors Thesis: “Lang-Trotter conjecture for Siegel modular forms”
- Patrick Dynes, Rivers Jenkins, Dalton Randall (co-advised with Felice Manganiello)
 - (a) 2015 Creative Inquiry: “Coding theory”
- Sam Mixon, Kristen Savary, Ashley Stanziola (co-advised with Felice Manganiello)
 - (a) 2015 Creative Inquiry: “Cryptography”
- Andrew Bell, Patrick Dynes, Debra Parmentola, Brittany Rosener
 - (a) 2013-14 Creative Inquiry: “Public key cryptography”
- Joel Clingempeel
 - (a) 2011-12 “Siegel modular forms”
 - (b) 2012-13 Honors Thesis: “Averages of standard L -values of genus 2 Siegel modular forms”

2. Program Director: Clemson REU in Combinatorics, Computational Algebraic Geometry, and Number Theory: Summer 2013

- “Degree 14 extensions of \mathbb{Q}_7 ”
 - Robert Cass (University of Kentucky)
 - Salvatore Parenti (University of Michigan)
 - Daniel Shankman (University of Tennessee - Knoxville)
- “Eta quotients” (Jointly advised with Kevin James)
 - Allison Arnold-Roksandich (Harvey Mudd College)
 - Kimberly Stubbs (University of North Carolina - Asheville)

3. City University of New York - Queens College

- Palak Bhasin
 - (a) 2015-16 Honors Thesis: “Elliptic curves and applications to cryptography”

4. Program Director: Clemson REU in Combinatorics, Computational Algebraic Geometry, and Number Theory: Summer 2012

- “Classifying local fields of characteristic p ”
 - Alfeen Hasmani (Molloy College)
 - Lindsey Hiltner (University of North Dakota)
 - Angela Kraft (Bethany Lutheran College)
 - Daniel Scofield (Grove City College)
 - “Amicable pairs for elliptic curves over number fields” (Jointly advised with Kevin James)
 - David Heras (Radford University)
 - Andrew Qian (University of California at Berkeley)
 - “Champion primes for elliptic curves” (Jointly advised with Kevin James)
 - Brandon Tran (Massachusetts Institute of Technology)
 - Minh-Tam Trinh (Princeton University)
 - Philip Wertheimer (Johns Hopkins University)
5. Faculty research advisor: Clemson REU in Combinatorics and Computational Number Theory: Summer 2010
- “Average values for L -functions on $GL(2)$ ”
 - Nadine Amersi (University College London)
 - Allison Proffer (Virginia Commonwealth University)
 - Larry Rolen (University of Wisconsin-Madison)
6. California Institute of Technology (Summer Undergraduate Research Fellowship)
- Yingkun Li (Caltech)
 - (a) Summer 2008 “Distribution of powers of the partition function modulo ℓ^j ”

Undergraduate Research Papers: (also listed under research papers above)

1. J. Brown, D. Heras (ugrad), K. James, R. Keaton (grad), A. Qian (ugrad), *Amicable pairs and aliquot cycles for elliptic curves over number fields*, Rocky Mountain Math. J., **46**(6), 1853-1866, 2016.
2. J. Brown, R. Cass (ugrad), K. James, R. Keaton (grad), S. Parenti (ugrad), D. Shankman (ugrad), *Counting tamely ramified extensions of local fields up to isomorphism*, Integers, #A53, **16**, 1-12, 2016.
3. J. Brown, A. Hasmani (ugrad), L. Hiltner (ugrad), A. Kraft (ugrad), D. Scofield (ugrad), K. Wash (grad), *Classifying extensions of the field of formal Laurent series over \mathbb{F}_p* , Rocky Mountain Math. J., **45**(1), 115-130, 2015.

4. J. Brown, R. Cass (ugrad), K. James, R. Keaton (grad), S. Parenti (ugrad), D. Shankman (ugrad), *Degree 14 extensions of \mathbb{Q}_7* , Int. J. Pure and Appl. Math., **100**(2), 337-345, 2015.
5. N. Amersi (ugrad), J. Beyerl (grad), J. Brown, A. Proffer (ugrad), L. Rolén (ugrad), *Pullbacks of Siegel Eisenstein series and associated critical L-values*, Rama. J., **27**(2), 151-162, 2012.
6. J. Brown and Y. Li (ugrad), *Level lowering for half-integral weight modular forms*, Proc. Amer. Math. Soc., **138**, 1171-1173, 2010.
7. J. Brown and Y. Li (ugrad), *Distribution of powers of the partition function modulo ℓ^j* , J. Number Theory, **129**, 2557-2568, 2009.

| |
|---------------------------|
| EXPOSITORY WRITING |
|---------------------------|

1. J. Brown, Graduate Linear Algebra, (209 pages, 2015)
2. J. Brown and K. Klosin with an appendix by K. Conrad, *On the norm of p -stabilized elliptic newforms*, 18 pages.
3. J. Brown, Introductory Topology, (271 pages, 2010)
4. J. Brown, Local class field theory, (97 pages, 2008)
5. J. Brown, *Alex, I will take congruent numbers for one million dollars please*, (14 pages, 2007)
6. J. Brown, *Congruent numbers and elliptic curves*, (26 pages, 2007)
7. J. Brown, An introduction to Iwasawa theory, (102 pages, 2006)
8. J. Brown, *Abel and the insolvability of the quintic*, (13 pages, 2005)
9. J. Brown, *Complex theory of abelian varieties*, (16 pages, 2004)
10. J. Brown, *An introduction to algebraic number theory*, (120 pages, 2001)

| |
|--------------------------|
| PLENARY ADDRESSES |
|--------------------------|

1. *Congruence primes for automorphic forms on unitary groups and applications to the arithmetic of Ikeda lifts*, Galois Representation and Automorphic Forms, Polish Academy of Sciences Conference Center, Bedlewo, Poland (August 18, 2016)
2. *Ikeda lifts, the Ikeda ideal, and a conjecture of Katsurada*, Workshop on Bianchi and Siegel modular forms, University of Sheffield, Sheffield, UK (July 16, 2014)
3. *Applications of Saito-Kurokawa lifts to arithmetic*, 9th Autumn Workshop on Number Theory (focusing on GSp(4)), Hakuba, Japan. (November 6, 2006)

4. *Saito-Kurokawa lifts and the Bloch-Kato conjecture*, Midwest Number Theory Day, University of Wisconsin, Madison, WI. (November 4, 2005)

| |
|-------------------------|
| COLLOQUIUM TALKS |
|-------------------------|

1. *Prime factorization, class groups, and generalizations*, University of Idaho, Moscow, ID. (November 9, 2017)
2. *Right triangles and a problem worth a million dollars*, City University of New York - Queens College. (March 30, 2016)
3. *Sums of squares, generating functions, and other applications of modular forms*, City University of New York - Queens College. (March 13, 2016)
4. *Sums of squares, generating functions, and other applications of modular forms*, Colby College, Waterville, ME. (January 28, 2016)
5. *Sums of squares, generating functions, and other applications of modular forms*, Hofstra University, Hempstead, NY. (January 27, 2016)
6. *Sum of squares and other applications of modular forms*, Fordham University, Bronx, NY. (December 1, 2015)
7. *Right triangles and a million dollars*, San Jose State University, San Jose, CA. (February 20, 2015)
8. *The interplay of complex analysis and arithmetic in number theory*, California Polytechnic State University, San Luis Obispo, CA. (February 6, 2015)
9. *Right triangles and a million dollars*, Elon University, Elon, NC. (October 29, 2014)
10. *Right triangles and a million dollars*, High Point University, High Point, NC. (October 28, 2014)
11. *Right triangles and a million dollars*, Fordham University, Bronx, NY. (January 29, 2014)
12. *Prime factorization, complex analysis, and arithmetic geometry*, Dartmouth College, Hanover, NH (September 26, 2013)
13. *Prime factorization, complex analysis, and arithmetic geometry*, Fordham University, Bronx, NY. (April 18, 2013)
14. *Rational right triangles and a million dollar problem*, University of San Diego, San Diego, CA. (February 16, 2012)

15. *Rational right triangles and a million dollar problem*, Haverford College, Haverford, PA. (January 30, 2012).
16. *Dirichlet's class number formula and generalizations*, Clemson University, Clemson, SC. (February 21, 2008)
17. *Dirichlet's class number formula and generalizations*, Florida State University, Tallahassee, FL. (January 18, 2008)
18. *Dirichlet's class number formula and generalizations*, Oregon State University, Corvallis, OR. (November 16, 2007)
19. *The congruent number problem and elliptic curves*, Math Coffees, Davidson College, Davidson, NC. (February 5, 2007)
20. *Automorphy, L-functions, and problems in arithmetic*, Bucknell University, Lewisburg, PA. (January 25, 2007)
21. *L-functions and arithmetic*, Arizona State University, Phoenix, AZ. (April 5, 2006)
22. *L-functions and arithmetic*, Armstrong Atlantic State University, Savannah, GA. (February 2, 2005)
23. *L-functions and arithmetic*, Stephen F. Austin University, Nacogdoches, TX. (January 26, 2005)

| |
|---------------------------------|
| INVITED CONFERENCE TALKS |
|---------------------------------|

1. *Increasing diversity in mathematics*, (Panel Member) Building Bridges: 2nd EU/US Workshop on Automorphic Forms and Related Topics, University of Bristol, Bristol, UK (July 9, 2014)
2. *Congruence Primes for Ikeda Lifts and the Ikeda ideal*, 27th Automorphic Forms Workshop, University College Dublin, Dublin, Ireland (March 11, 2013)
3. *The CAP ideal and applications*, Special Session on Automorphic and Modular Forms, AMS Sectional Meeting: 2012 Spring Western Meeting, Honolulu, HI (March 3-4, 2012)
4. *Eisenstein series on $GU(3,3)$ and non-trivial torsion in Shafarevich-Tate groups*, Special Session on Elliptic Curves, Modular Forms, and Related Topics, AMS Sectional Meeting: 2011 Fall Southeastern Meeting, Winston-Salem, NC (September 24, 2011)
5. *Research with Students: from attracting students to publishing*, (Panel Member) 25th Automorphic Forms Workshop, Oregon State University, Corvallis, OR. (March 24, 2011)

6. *Congruence primes of Saito-Kurokawa lifts*, Special Session on Automorphic forms, L-functions and applications, AMS Sectional Meeting: 2010 Spring Eastern Sectional Meeting, Newark, NJ. (May 22, 2010)
7. *Giving an effective talk*, (Panel Member), Midwest Number Theory Conference for Graduate Students III, University of Wisconsin, Madison, WI. (November 5, 2005)

| |
|----------------------------------|
| INVITED RESEARCH SEMINARS |
|----------------------------------|

1. *Congruence primes for automorphic forms on unitary groups and applications to the arithmetic of Ikeda lifts*, Collaborative Number Theory Seminar at the CUNY Graduate Center, NYC, NY. (February 3, 2016)
2. *L-functions, modular forms, and arithmetic*, Dartmouth College, Hanover, NH. (September 26, 2013)
3. *Congruence Primes for Ikeda Lifts and the Ikeda ideal*, Number Theory Seminar, University of North Carolina - Chapel Hill, Chapel Hill, NC. (September 10, 2013)
4. *On the Bloch-Kato conjecture for elliptic modular forms of square-free level*, Collaborative Number Theory Seminar at the CUNY Graduate Center, NYC, NY. (April 19, 2013)
5. *L-functions and arithmetic*, Michigan State University, East Lansing, MI. (November 19, 2012)
6. *L-functions and arithmetic*, Research Seminar, University of San Diego, San Diego, CA. (February 16, 2012)
7. *Congruences of automorphic forms and torsion in the Bloch-Kato conjecture*, Number Theory Seminar, Texas A&M University, College Station, TX. (February 9, 2011)
8. *The Eisenstein ideal and generalizations*, Number Theory Seminar, University of South Carolina, Columbia, SC. (November 11, 2008)
9. *Saito-Kurokawa lifts and lower bounds on Selmer groups*, Number Theory Seminar, UCLA, Los Angeles, CA. (March 10, 2008)
10. *Congruences between automorphic forms and applications to arithmetic*, Algebra Seminar, Florida State University, Tallahassee, FL. (January 17, 2008)
11. *Saito-Kurokawa lifts, L-values for $GL(2)$, and congruences between Siegel modular forms*, Algebra Seminar, Boston University, Boston, MA. (February 7, 2005)

| |
|--|
| CONTRIBUTED TALKS AND PRESENTATIONS |
|--|

1. *Congruences for paramodular Saito-Kurokawa lifts and applications*, 32nd Automorphic Forms Workshop, Tufts University, Boston, MA, (March 21, 2018)
2. *Congruences for paramodular Saito-Kurokawa lifts and applications*, Southeast Regional Meeting on Numbers, East Tennessee State University, Johnson City, TN (March 10, 2018).
3. *A (somewhat) gentle introduction to Hida theory*, Algebraic Geometry and Number Theory Seminar, Clemson University, Clemson, SC (April 14, 2015).
4. *Southeastern Conference for Undergraduate Women in Mathematics*, Poster presentation Mathematical Outreach Programs, Joint AMS-MAA Mathematics Meetings, San Antonio, TX. (January 11, 2015).
5. *Combing a hairy coconut (or fun facts in topology)*, Math Club Talk, Clemson University, Clemson, SC. (September 12, 2014).
6. *Aliquot cycles for elliptic curves over number fields*, Building Bridges: 2nd EU/US Workshop on Automorphic Forms and Related Topics, University of Bristol, Bristol, UK (July 10, 2014).
7. *The U_p operator and some applications*, Algebraic Geometry and Number Theory Seminar, Clemson University, Clemson, SC (February 19, 2014)
8. *L-functions, modular forms, and arithmetic geometry*, Algebra and Discrete Mathematics Seminar, Clemson University, Clemson, SC (October 17, 2013)
9. *Right triangles and a million dollars*, Math Club Talk, Clemson University, Clemson, SC (September 17, 2013).
10. *Number theory projects from the 2013 Clemson REU*, Algebraic Geometry and Number Theory Seminar, Clemson University, Clemson, SC (August 28, 2013).
11. *What is ... the BSD conjecture?* Algebra and Discrete Mathematics Seminar, Clemson University, Clemson, SC. (November 8, 2012).
12. *What is a .. p -adic L -function?* Number Theory Seminar, Clemson University, Clemson, SC. (September 19, 2012).
13. *The Bloch-Kato conjecture for modular forms of square-free level*, Building Bridges: 1st EU-US conference on automorphic forms and related topics, RWTH Aachen University, Aachen, Germany. (August 9, 2012).
14. *Congruences of automorphic forms and torsion in the Bloch-Kato conjecture*, PANTS XV, Clemson University, Clemson, SC. (February 19, 2011)
15. *2010 Clemson REU in Combinatorics and Computational Number Theory*, Algebra and Discrete Math Seminar, Clemson University, Clemson, SC. (September 2, 2010)

16. *Some background on elliptic curves and Galois cohomology*, PANTS X, Armstrong Atlantic State University, Savannah, GA. (September 20, 2009)
17. *A survey of the Hodge conjecture*, Clemson REU, Clemson University, Clemson, SC. (June 6, 2009)
18. *A survey of the Birch and Swinnerton-Dyer conjecture*, Clemson REU, Clemson University, Clemson, SC. (May 28, 2009)
19. *An introduction to p -adic L -functions*, PANTS IX, Clemson University, Clemson, SC. (February 8, 2009)
20. *Number Theory at Clemson*, 1st Year Graduate Student Seminar, Clemson University, Clemson, SC. (February 3, 2009)
21. *An introduction to Iwasawa theory*, Number Theory Seminar, Clemson University, Clemson, SC. (January 13, 20, 27, 2009)
22. *Modular forms and partitions*, Algebra, Discrete Mathematics, and Number Theory Seminar, Clemson University, Clemson, SC. (October 3, 2008)
23. *Saito-Kurokawa lifts and lower bounds on Selmer groups*, Number Theory Seminar, Caltech, Pasadena, CA. (April 3, 2008)
24. *Attaching Galois representations to modular forms*, Graduate student number theory seminar, The Ohio State University, Columbus, OH. (April 25, May 2, 2007)
25. *L -functions on $GSp(4) \times GL(2)$ and the Bloch-Kato conjecture*, Canadian Number Theory Association IX Meeting, University of British Columbia, Vancouver, BC, Canada. (July 12, 2006)
26. *L -functions on $GSp(4) \times GL(2)$ and the Bloch-Kato conjecture*, The 20th Annual Workshop on Automorphic Forms and Related Topics, University of Colorado, Boulder, CO. (March 30, 2006)
27. *Mathematics and internet security*, Mathematics Undergraduate Awards Ceremony, The Ohio State University, Columbus, OH. (May 5, 2006)
28. *The congruent number problem and elliptic curves*, Radical Pi (undergraduate math club) The Ohio State University, Columbus, OH. (February 1, 2006)
29. *Number Theory: A couple of "simple" problems*, Invitation to Research (Incoming graduate students are exposed to current research areas in various topics.) The Ohio State University, Columbus, OH. (January 23,30, 2006)
30. *Abel and the insolvability of the quintic*, VIGRE Reading Classics Working Group, The Ohio State University, Columbus, OH. (November 1, 2005)

31. *Saito-Kurokawa lifts and applications to the Bloch-Kato conjecture*, Number Theory Seminar, The Ohio State University, Columbus, OH. (October 3, 10, 2005)
32. *Saito-Kurokawa lifts, L -values for GL_2 , and congruences between Siegel modular forms*, The 19th Annual Workshop on Automorphic Forms and Related Topics, University of North Texas, Denton, TX. (March 20, 2005)
33. *Saito-Kurokawa lifts, L -values for GL_2 , and congruences between Siegel modular forms*, AMS-MAA Joint Meeting, Atlanta, GA. (January 06, 2005)
34. *Saito-Kurokawa lifts, L -values for GL_2 , and congruences between Siegel modular forms*, West Coast Number Theory Conference, UNLV, Las Vegas, NV. (December 18, 2004)
35. *Saito-Kurokawa Lifts and Congruences Among Siegel Modular Forms*, Midwest Number Theory Conference for Graduate Students and Recent PhDs, University of Wisconsin, Madison, WI. (October 25, 2003)
36. *Variation of Hodge Structures: Some Examples*, Arizona Winter School, Southwestern Center for Arithmetic Algebraic Geometry. University of Arizona, Tucson, AZ. (March 18, 2002) This was done as a group projection under the direction of Johan de Jong.

| |
|-----------------|
| TEACHING |
|-----------------|

Clemson University:

- Calculus I (Su '15, F '16)
- Honors Calculus I (F '09, F '11)
- Honors Calculus II (S '10, F '13, F'14)
- Multivariable Calculus (F '08, S '09, Su '15, Su '17)
- Honors Multivariable Calculus (F '10, S '14, S '15, F '16, F 17)
- Linear Algebra (S '13)
- Complex Analysis (F '12)
- Advanced Calculus I (S '12)
- Advanced Calculus II (Su '10, Su '13)
- Graduate Linear Algebra (F '12, Su '13, Su '14, F '14)
- Graduate Abstract Algebra I (F '10)

- Graduate Abstract Algebra II (S '11, S '15)
- Graduate Number Theory (F '17)
- Graduate Introductory Topology (F '09)
- Graduate Algebraic Topology (S '10)
- Commutative Algebra (Su '10)
- Elliptic Curves (F '11)
- Further Topics in Elliptic Curves (S '12)
- Introduction to Lie Groups and Lie Algebras (F '11)
- Riemann surfaces and algebraic curves (S '13)
- Algebraic Geometry I (F '13)
- Algebraic Geometry II (S '14)

Queens College:

- Calculus II (S '16)
- Introduction to Algebraic Structures (S '16)
- Number Theory (F '15)

Caltech:

- Local Class Field Theory (W '08)
- Global Class Field Theory (S '08)

The Ohio State University:

- Multivariable Calculus (F '05)
- Discrete Mathematical Structures II (W '07)
- Introductory Number Theory (S '07)
- Undergraduate Abstract Algebra I (W '06)
- Undergraduate Abstract Algebra II (S '06)
- Introduction to Iwasawa Theory (F '06)

The Ross Program: (Seminar Instructor)

A program for gifted middle/high school students to learn basic number theory through exploration. (Su '06, '07)

The University of Michigan:

- Calculus I Assistant Course Coordinator with Karen Rhea (W '04, F '04)
- Calculus II Assistant Course Coordinator with Bob Megginson (F' 01) and with Al Taylor (F '03)
- Data, Functions, and Graphs (F '99)
- Calculus II (W '00 - W '02)
- Mathematics Help Lab Graduate Student Supervisor (F '00)

Michigan Mentorship Program: (Mentor)

Worked with a gifted high school student teaching him abstract algebra and number theory. Ann Arbor, MI. (Su '00, '01, '02)

Michigan State University:

- College Algebra (S '99)
- Intermediate Algebra (Su '98, '99)
- Calculus II and Calculus III Teaching Assistant ('97-'98)

| |
|---|
| EDUCATION SEMINARS AND WORKSHOPS |
|---|

1. *MAA Minicourse on Java Applets in Mathematics Participant and MAA Minicourse on Teaching Galois Theory to Undergraduates*, AMS-MAA Joint Meetings, Atlanta, GA. (January, 2005)
2. *VIGRE Mathematics Education Seminar Participant*, University of Michigan, Ann Arbor, MI. (2001-2004)
3. *VIGRE Mathematics Education Seminar Research Assistant*, University of Michigan, Ann Arbor, MI. Helped analyze videos of calculus students attempting to explain the concept of a derivative. (Fall 2003)
4. *The Engaged Classroom: Getting Students Involved in the Learning Process*, Center for Research on Learning and Teaching, University of Michigan, Ann Arbor, MI. Attended seminar. (Fall 2003)

| |
|-----------------|
| SERVICES |
|-----------------|

1. *External Expert*, Senior Research Project of Ray Wang at Heathwood Hall High School, Columbia, SC. (Fall 2017-18)
2. *Conference Organizer*, PANTS XXIX, Clemson University, Clemson, SC. (December 2-3, 2017)
3. *Conference co-organizer*, PANTS XXV, Clemson University, Clemson, SC. (December 5-6, 2015)
4. *Co-founder and director*, Program to assign teaching mentors to incoming graduate students, Clemson University, Clemson, SC (Fall 2014 - 2015)
5. *Co-founder*, Graduate teaching assistant training program, Clemson University, Clemson, SC (Fall 2014)
6. *Faculty Advisor*, AMS student chapter at Clemson University, Clemson University, Clemson, SC (Fall 2013 - present)
7. *Elected Representative*, College of Engineering and Science Representative, Calhoun Honors College Committee, Clemson University, Clemson, SC (Fall 2013 - 2016)
8. *Elected Representative*, College of Engineering and Science Representative, Athletic Advisory Council, Clemson University, Clemson, SC (Fall 2013 - 2016)
9. *Affiliated Faculty* AWM Student Chapter, Clemson University, Clemson, SC (2013-present)
10. *Volunteer* Clemson FIRST program, Clemson University, Clemson, SC. (2013-present)
11. *Committee member*, Algebra preliminary examination committee, Clemson University, Clemson, SC. (Spring 2011 - present).
12. *Department representative*, Graduate student recruitment fair, Joint Mathematics Meetings. (2010 - 2015)
13. *Committee member*, Graduate Affairs, Department of Mathematical Sciences, Clemson University, Clemson, SC (2014 - 2015)
14. *Co-organizer*, Southeastern Regional Meeting on Numbers, Winthrop University, Rock Hill, SC (March 28-29, 2015)
15. *Conference founder and organizer*, Southeastern Conference for Undergraduate Women in Mathematics, Clemson University, Clemson, SC (2013, 2014)
16. *Chair*, Calculus Committee (committee to evaluate effectiveness of calculus instruction at Clemson), Department of Mathematical Sciences, Clemson University, Clemson, SC (2013-14)

17. *Conference organizer*, PANTS XXI, Clemson University, Clemson, SC. (December 7-8, 2013)
18. *Conference organizer*, 4th Annual Southeastern REU Symposium, Clemson University, Clemson, SC (July 9, 2013)
19. *Committee member*, Undergraduate Affairs, Department of Mathematical Sciences, Clemson University, Clemson, SC (Fall 2013)
20. *Judge* Undergraduate Creative Inquiry Posters, Clemson University, Clemson, SC (April 9, 2013)
21. *Judge* MAA Undergraduate Student Poster Session, Joint Mathematics Meetings. (2013-2014)
22. *Algebra and Discrete Mathematics subfaculty representative*, Graduate student open house recruitment, Clemson University, Clemson, SC. (2009, 2013)
23. *Volunteer*, Clemson Calculus Challenge, Clemson University, Clemson, SC. (2012, 2013)
24. *Conference organizer*, PANTS XVII, Clemson University, Clemson, SC. (December 3-4, 2011)
25. *Conference organizer*, PANTS XV, Clemson University, Clemson, SC. (February 19-20, 2011)
26. *Referee*, Comp. Math., IJNT, J. of Comm. Alg., JNT, Math. Res. Lett., Rocky Mount. Math.
27. *Algebra and Discrete Mathematics Subfaculty Coordinator*, Clemson University, Clemson, SC. (2010 - 2015)
28. *Research Mentor*, Clemson REU in Combinatorics and Computational Number Theory, Clemson University, Clemson, SC. (Summer 2010)
29. *Member*, Clemson Calculus Textbook Committee, Clemson University, Clemson, SC. (Spring 2010)
30. *Conference organizer*, PANTS XII, Clemson University, Clemson, SC. (February 20-21, 2010)
31. *Conference co-organizer*, PANTS X, Armstrong Atlantic State University, Savannah, GA. (September 19-20, 2009)
32. *Conference organizer*, PANTS IX, Clemson University, Clemson, SC. (February 7-8, 2009)
33. *Member*, Clemson Research Committee, Clemson University, Clemson, SC. (Fall 2008 - Fall 2010)
34. *Reviewer*, Mathematical Reviews, 10 reviews, (Fall 2007 - present)
35. *Conference co-organizer*, PANTS IV, Clemson University, Clemson, SC. (February 7-8, 2009)

36. *Seminar Organizer*, Algebraic Geometry and Number Theory Seminar, Clemson University, Clemson, SC. (2008 - 2015)
37. *Conference co-organizer*, Southern California Number Theory Day, Caltech, Pasadena, CA. (March 8, 2008)
38. *Reading Course Instructor*, Supervised a student in a reading course of algebraic number theory at The Ohio State University. (Summer 2006)
39. *Seminar Organizer*, Number Theory Seminar, The Ohio State University, Columbus, OH. (2006-2007)
40. *Chair Number Theory Session III*, AMS-MAA Joint Meetings, Atlanta, GA. (January 6, 2005)
41. *Freshmen/Sophomore Mathematics Program Committee*, Mathematics Department, University of Michigan, Ann Arbor, MI. (2004-2005)
42. *King-Chavez-Parks Program Host*, Gave talk to area high school students entitled “Clocks, Doughnuts, Paper-twisting, and Snowflakes and How They Relate to Modern Mathematics,” Office of Academic Multicultural Initiatives, University of Michigan, Ann Arbor, MI. (November 13, 2003)
43. *Seminar Organizer*, Student Number Theory Seminar, University of Michigan, Ann Arbor, MI. (2000-2001, 2002-2003)