

Zach Teitler

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Degrees

Ph.D. (Mathematics), University of Michigan, 2005
Dissertation: Multiplier ideals of line arrangements
Advisor: Robert Lazarsfeld

B.S. (Creative Studies–Mathematics), University of California–Santa Barbara, 2000

Employment History

Professor of Mathematics, Boise State University, 2021–Present

Associate Professor of Mathematics, Boise State University, 2014–2021

Assistant Professor of Mathematics, Boise State University, 2010–2014

Visiting Assistant Professor of Mathematics, Texas A&M University, 2007–2010

Assistant Professor of Mathematics, Southeastern Louisiana University, 2005–2008

Publications

31. Garritt Johns, Zach Teitler, *An improved upper bound for the Waring rank of the determinant*, J. Commut. Algebra, 2022
30. Mats Boij, Zach Teitler, *A bound for the Waring rank of the determinant via syzygies*, Linear Alg. Appl., 2020
29. Brian Harbourne, Juan Migliore, Uwe Nagel, Zach Teitler, *Unexpected hypersurfaces and where to find them*, Michigan Math. J., 2021
28. Jarosław Buczyński, Kangjin Han, Massimiliano Mella, Zach Teitler, *On the locus of points of high rank*, European Journal of Mathematics, 2018
27. Theodosios Douvropoulos, Joachim Jelisiejew, Bernt Ivar Utstøl Nødland, Zach Teitler, *The Hilbert scheme of 11 points in \mathbb{A}^3 is irreducible*, in *Combinatorial Algebraic Geometry*, Gregory G. Smith, Bernd Sturmfels, eds., 2017, Springer
26. Zach Teitler, *Sufficient conditions for Strassen’s additivity conjecture*, Illinois J. Math., 2015
25. Jarosław Buczyński and Zach Teitler, *Some examples of forms of high rank*, Collect. Math., 2016
24. Nathan Ilten and Zach Teitler, *Product ranks of the 3×3 determinant and permanent*, Canad. Math. Bull., 2016

23. Harm Derksen and Zach Teitler, *Lower bound for ranks of invariant forms*, JPAA, 2015
22. Kent M. Neuerburg and Zach Teitler, *Decompositions of ideals of minors meeting a submatrix*, Comm. Alg., 2016
21. Nickolas Hein, Christopher J. Hillar, Abraham Martín del Campo, Frank Sottile, Zach Teitler, *The monotone secant conjecture in the real Schubert calculus* Exp. Math., 2015 (Extended version of abstract presented at MEGA 2011.)
20. Grigoriy Blekherman, Zach Teitler, *On maximum, typical, and generic ranks*, Math. Ann., 2015
19. Erik Holmes*, Paul Plummer*, Jeremy Siegert*, Zach Teitler, *Maximum Waring ranks of monomials and sums of coprime monomials*, Comm. Alg., 2016
* undergraduate co-author
18. Weronika Buczyńska, Jarosław Buczyński, Johannes Kleppe, and Zach Teitler, *Apolarity and direct sum decomposability of polynomials*, Michigan Math. J., 2015
17. Zach Teitler, *Software for multiplier ideals*, JSAG, 2015
16. Zach Teitler and Alexander Woo, *Power sum decompositions of defining equations of reflection arrangements*, J. Alg. Comb., 2015
15. Zach Teitler and Douglas A. Torrance, *Castelnuovo–Mumford regularity and arithmetic Cohen–Macaulayness of complete bipartite subspace arrangements*, JPAA, 2015
14. Weronika Buczyńska, Jarosław Buczyński, and Zach Teitler, *Waring decompositions of monomials*, J. Algebra, 2013
13. Zach Teitler, *Topological criteria for schlichtness*, Proc. Edinb. Math. Soc. (2), 2013
12. Javier Elizondo, Paulo Lima-Filho, Frank Sottile, and Zach Teitler, *Arithmetic toric varieties*, Math. Nach., 2014
11. Luis García-Puente, Nickolas Hein, Christopher J. Hillar, Abraham Martín del Campo, James Ruffo, Frank Sottile, and Zach Teitler, *The Secant Conjecture in the real Schubert calculus*, Experimental Math., 2012
10. Thomas Bauer, Cristiano Bocci, Susan Cooper, Sandra Di Rocco, Marcin Dumnicki, Brian Harbourne, Kelly Jabbusch, Andreas Leopold Knutsen, Alex Küronya, Rick Miranda, Joaquim Roé, Hal Schenck, Tomasz Szemberg, Zach Teitler, *Recent developments and open problems in linear series*, in *Contributions to Algebraic Geometry*, IMPANGA Lecture Notes, August 2012
9. Susan Cooper, Brian Harbourne, and Zach Teitler, *Combinatorial bounds on Hilbert functions of fat points in projective space*, J. Pure Appl. Algebra, 2011
8. Nero Budur, Mircea Mustață, and Zach Teitler, *The Monodromy Conjecture for hyperplane arrangements*, Geom. Dedicata, 2011

7. Christopher Hillar, Luis García-Puente, Abraham Martín del Campo, James Ruffo, Zach Teitler, Stephen L. Johnson, and Frank Sottile, *Experimentation at the Frontiers of Reality in Schubert Calculus*, Contemp. Math., 2010
6. J.M. Landsberg and Zach Teitler, *On the ranks and border ranks of tensors and symmetric tensors*, Found. Comput. Math., 2010
5. Zach Teitler, *Bounding symbolic powers via asymptotic multiplier ideals*, Ann. Univ. Pedagog. Crac. Stud. Math., 2009
4. Ulrich Derenthal, Michael Joyce, and Zach Teitler, *The nef cone volume of generalized Del Pezzo surfaces*, Algebra & Number Theory, 2008
3. Zach Teitler, *A note on Mustaǎ's computation of multiplier ideals of hyperplane arrangements*, Proc. Amer. Math. Soc., 2008
2. Zachariah C. Teitler, *On the intersection of the curves through a set of points in \mathbb{P}^2* , J. Pure Appl. Algebra, 2007
1. Zachariah C. Teitler, *Multiplier ideals of general line arrangements in \mathbb{C}^3* , Comm. Alg., 2007

Unpublished

1. Zach Teitler, *Geometric lower bounds for generalized ranks* (arXiv:1406.5145 [math.AG])

Software

3. MultiplierIdeals: a Macaulay2 package for computing multiplier ideals of special ideals including monomial ideals, monomial curves, and generic determinantal ideals.
2. ApolarIdeal: a Macaulay2 package for computing apolar ideals
1. CombinatorialIteration: a Macaulay2 package providing iterators for several common combinatorial structures

Grants and Awards

11. Simons Foundation Collaboration Grants for Mathematicians (award #354574, 2015–2020, \$35,000)
10. COAS Travel Grant, for travel to CMS Winter Meeting, Hamilton, Ontario, December 2014 (\$500)
9. COAS Travel Grant, for travel to Institute of Mathematics of the Polish Academy of Sciences, Warsaw, January 2013 (\$500)
8. Boise State University College Of Arts and Sciences (COAS) Travel Grant, for travel to AMS Sectional Meeting at University of Iowa, March 2011 (\$300)
7. (with W. Bangerth, R. Carroll, and F. Sottile) NSF SCREMS Grant “Cluster Computing for the Mathematical Sciences at Texas A&M University” (DMS-0922866, 2009–2010, \$59,480)

6. (with Kent Neuerburg) Louisiana University Board of Regents Research Competitiveness Subprogram (RCS) grant, “Geometry and Algebra of Ideals Generated by Determinants” (LEQSF(2007-10)-RD-A-28, 2007–2010, \$59,892)
5. Southeastern Louisiana University Center for Faculty Excellence, Travel Grant for travel to University of Nebraska–Lincoln, October, 2006
4. Southeastern Louisiana University Center for Faculty Excellence, Center’s Innovative Teaching Initiative (CITI) grant for travel to Project NExT, 2006–7
3. Travel Grant for Emerging Faculty, Louisiana Board of Regents/NSF, March–April 2005
2. Regents-VIGRE Graduate Fellow, University of Michigan, September 2000–April 2005
1. Raymond L. Wilder Award, University of California–Santa Barbara, Department of Mathematics, June 2000

Selected Invited Conference Presentations

18. *Apolar ideals of powers of power sums and of general hyperplane arrangements*, AMS 2023 Fall Central Sectional Meeting, Omaha (Special Session on Varieties with unexpected hypersurfaces, geproci sets, and their interactions), October 7–8, 2023
17. *An upper bound for the Waring rank of the determinant*, AMS 2021 Spring Western Sectional Meeting, San Francisco (virtual) (Special Session on Quivers, Tensors, and their Applications), May 1–2, 2021
16. *A bound for the Waring rank of the determinant via syzygies*, SIAM Pacific Northwest Section Biennial Meeting, Seattle University (Thematic Session on Algebra, Geometry, and Applications), October 18–20, 2019
15. *A bound for the Waring rank of the determinant via syzygies*, SIAM Conference on Applied Algebraic Geometry, Bern, Switzerland (Session: The algebra and geometry of tensors 2: structured tensors), July 9–13, 2019
14. *A bound for the Waring rank of the determinant via syzygies*, AMS 2018 Fall Central Sectional Meeting, Ann Arbor, MI (Special Session on Commutative Algebra and Complexity), October 20–21, 2018
13. *Waring ranks*, three plenary lectures and problem session, for the *Varieties and Group Actions* workshop of the *Varieties: Arithmetic and Transformations* semester of the IMPAN (Institute of Mathematics of the Polish National Academy of Sciences), Warsaw, Poland, September 23–29, 2018
12. *Geometry of high rank loci*, Spring 2017 AMS Western Sectional, Pullman, WA (Special Session on Combinatorial and Computational Commutative Algebra and Algebraic Geometry), April 22–23, 2017
11. *Direct sum decomposability of forms*, Spring 2017 AMS Western Sectional, Pullman, WA (Special Session on Commutative Algebra), April 22–23, 2017
10. *Lower bound for ranks of invariant forms*, CMS Winter Meeting, Hamilton, Ontario, December 5–8, 2014

9. *On maximum, typical, and generic ranks*, Spring 2014 AMS Central Sectional, Lubbock, TX, April 11–13, 2014
8. *Direct sum decomposability of polynomials*, Interactions between Commutative Algebra and Algebraic Geometry II, Tulane, September 28–29, 2013
7. *Software for computing multiplier ideals*, SIAM Conference on Applied Algebraic Geometry, Colorado State University, August 1–4, 2013
6. *Direct sum decomposability of polynomials*, SIAM Conference on Applied Algebraic Geometry, Colorado State University, August 1–4, 2013
5. *Experimentation at the Frontiers of Reality in Schubert Calculus*, AAAS Pacific Division 2012 Meeting, Boise, ID, June 27, 2012
4. *Software for computing multiplier ideals*, Michigan Computational Algebraic Geometry 2012, Oakland University, May 13, 2012
3. *Ranks and Generalized Ranks*, 2011 SIAM Conference on Applied Algebraic Geometry, NCSU, October 7, 2011
2. *Software for the computation of multiplier ideals*, MEGA (Effective Methods in Algebraic Geometry), Stockholm, Sweden, June 1, 2011
1. *Ranks and generalized ranks*, Toric geometry and applications, Leuven, Belgium, June 6, 2011

Selected Invited Seminar and Colloquium Presentations

13. *Invitation to Waring rank*, New Mexico State University, Algebra Seminar, November 13, 2023
12. *Waring ranks of homogeneous forms*, University of Washington, Algebra and Algebraic Geometry Seminar, November 21, 2017
11. *Waring ranks of homogeneous forms*, York University, Combinatorics Seminar, November 7, 2016
10. *Waring ranks of homogeneous forms*, Fields Institute, University of Toronto, October 18, 2016
9. *Bounds for Waring rank*, McMaster University, Algebra Seminar, September 19, 2016
8. *Bounds for Waring rank*, University of Minnesota, Commutative Algebra Seminar, February 18, 2016
7. *Bounds for Waring rank*, Central Michigan University, Colloquium, November 16, 2015
6. *Bounds for Waring rank*, University of Utah, Commutative Algebra Seminar, October 6, 2015
5. *Geometric lower and upper bounds for Waring rank*, University of Arkansas, Colloquium, January 6, 2015
4. *Ranks of polynomials*, University of Idaho, Colloquium, March 27, 2014

3. *Apolarity, Waring ranks, and direct sum decomposability of polynomials*, Queen's University, Algebraic Geometry Seminar, January 13, 2014
2. *A geometric lower bound for rank*, IMPANGA, Warsaw, Poland, January 11, 2013
1. *Direct sum decomposability and apolarity*, MIMUW Algebraic Geometry Seminar, Warsaw, Poland, January 10, 2013

Selected Local Seminar Presentations

13. *Alese's two cut theorem*, TATERS, Boise State University, February 21, 2020
12. *Power sum decomposition of determinant*, TATERS (Topics in Algebra, Topology, Etc. Research Seminar), Boise State University, February 14, 2020
11. *Frobenius's Theorem on Linear Preservers of Determinant*, Mathematics Seminar, Boise State University, January 24, 2020
10. *Lucas's theorem and MathOverflow 10*, AGC Seminar, Boise State University, October 11, 2019
9. *Huang's proof of the sensitivity conjecture*, AGC Seminar, Boise State University, September 27, 2019
8. *Hurwitz's 1,2,4,8 theorem via linear algebra*, AGC Seminar, Boise State University, February 8, 2019
7. *A theorem of Polya on polynomials*, AGC Seminar, Boise State University, October 5, 2018
6. *A bound for the Waring rank of the determinant via syzygies*, AGC Seminar, Boise State University, September 14, 2018
5. *Sperner's Theorem and the Erdos-Ko-Rado Theorem*, AGC Seminar, Boise State University, March 9, 2018
4. *High-rank and maximum-rank geometry*, AGC Seminar, Boise State University, October 6, 2017
3. *Recent* advances in Waring rank and apolarity*, AGC Seminar, Boise State University, September 22, 2017
2. *The Gessel-Viennot theorem*, AGC Seminar, Boise State University, April 7, 2017
1. *Lefschetz properties, hyperplane arrangements, inclusion matrices*, AGC Seminar, Boise State University, March 3, 2017

Conference, Session, and Seminar Organization See <https://sites.google.com/site/zteitler/home/events>.

11. *Special Session on Combinatorial and Computational Commutative Algebra and Algebraic Geometry* at the Spring 2016 Western Sectional AMS Meeting, April 9-10, 2016, Salt Lake City (co-organizer)
21 speakers

10. *AMS Special Session on Tensor Decompositions and Secant Varieties* at the Joint Mathematics Meetings, Seattle, January, 2016 (organizer)
6 speakers
9. Macaulay2 Workshop, Boise State University, May 27-30, 2015 (local co-organizer)
37 participants. Supported by NSF DMS 10-02171 / NSF DMS 10-02210.
8. Western Algebraic Geometry Symposium, University of Idaho, October 11–12, 2014 (local co-organizer)
6 speakers, 58 registered participants. Partially supported by NSF.
7. *Special Session on Combinatorial and Computational Commutative Algebra and Algebraic Geometry* at the Spring 2013 Western Sectional AMS Meeting, April 13-14, 2013, Boulder, Colorado (co-organizer)
19 speakers
6. *Special Session on Computational and Algorithmic Algebraic Geometry* at the AMS 2011 Fall Western Section Meeting, Salt Lake City, October 22-23, 2011 (co-organizer)
20 speakers
5. Algebra, Geometry, Cryptology (AGC) Seminar at Boise State, 2010–Present (co-organizer)
<http://math.boisestate.edu/seminars/agc/>
4. Algebraic Geometry Seminar at Texas A&M, 2007–2010 (co-organizer)
3. *AMS Special Session on Computational Algebra and Convexity* at the Joint Mathematics Meetings, Washington, DC, January, 2009 (co-organizer)
16 speakers
2. *Special Session on Algebraic Geometry of Matrices and Determinants* at the AMS 2008 Spring Southeastern Meeting, Baton Rouge, March 28-30, 2008 (co-organizer)
14 speakers
1. Regional conference AGIL: Algebraic Geometry In Louisiana, 2006, 2007 (co-organizer)
3 speakers at each event

Selected Conferences and Workshops Attended

8. Bruce Reznick 66 fest: A mensch of Combinatorial-Algebraic Mathematics, Bern, Switzerland, July 8, 2019
7. Tensors in Computer Science and Geometry, Simons Institute for the Theory of Computing, Berkeley, CA, November 10–14, 2014
6. Recent Advances in Algebraic Geometry: a conference in honor of Robert Lazarsfeld’s 60th birthday, University of Michigan, May 16–19, 2013
5. Western Algebraic Geometry Symposium, University of Utah, October 20–21, 2012
4. Macaulay2 workshop, Wake Forest, NC, Aug. 4–10, 2012
3. Western Algebraic Geometry Symposium, University of Washington, Seattle, April 14–15, 2012

2. IMA (Institute for Mathematics and its Applications) Special Workshop on Macaulay2, Minneapolis, July 2011
1. AMS Math Research Communities program on “Computational Algebra & Convexity”, June 2008

Conference Presentations and Attendance Canceled due to COVID

Plans to attend and/or speak at the following conferences in Spring 2020 were canceled due to COVID. These meetings fell early in the pandemic and there was not enough time for them to transition to online formats.

4. BrianFest (60th birthday celebration of Brian Harbourne), Lincoln, NE, May 16-17, 2020
3. Macaulay2 Workshop, Cleveland, May 11-15, 2020
2. Macaulay2 internals, Cleveland, May 8-10, 2020
1. AMS Sectional in Charlottesville, VA, March 13-15, 2020. Invited presentation: “Recent progress toward the Waring rank of the determinant”, Special Session on Tensors and Complexity.

Academic Advising — Graduate Advising

4. Max Sullivan
M.S. Mathematics, Boise State University, 2022
Thesis: *Waring Rank and Apolarity of Some Symmetric Polynomials*
<https://scholarworks.boisestate.edu/td/1955/>
3. Stuart Nygard
M.S. Mathematics, Boise State University, 2016
Thesis: *The density topology on the reals and other spaces*
<http://scholarworks.boisestate.edu/td/1143/>
2. Monica Josue Agana (Co-advisor: Andrés Eduardo Caicedo)
M.S. Mathematics, Boise State University, 2015
Thesis: *Classical theory of rearrangements*
<http://scholarworks.boisestate.edu/td/1039/>
1. Anna Marie Megale
M.S. Mathematics, Boise State University, 2015
Thesis: *The Frobenius problem*
<http://scholarworks.boisestate.edu/td/1048/>

Academic Advising — Graduate Committee Member

9. Milan Zanussi
M.S. Mathematics, Boise State University, 2021 (expected)
Advisor: Sam Coskey
8. Kennedy Courtney
M.S. Mathematics, Boise State University, 2020
Advisor: Jens Harlander
Thesis: *The Directed Forest Complex of Cayley Graphs*
<https://scholarworks.boisestate.edu/td/1684/>

7. Mitchell Scofield
M.S. Mathematics, Boise State University, 2019
Advisor: Jens Harlander
Thesis: *On the Fundamental Group of Plane Curve Complements*
<https://scholarworks.boisestate.edu/td/1538/>
6. Khoi Le
M.S. Mathematics, Boise State University, 2018
5. Phillip W. Hart
M.S. Mathematics, Boise State University, 2015
Advisor: Uwe Kaiser
Thesis: *Monodromy representation of the braid group*
<http://scholarworks.boisestate.edu/td/989/>
4. Tyler Allyn
M.S. Mathematics, Boise State University, 2014
Advisor: Jens Harlander
Thesis: *Diagrammatically reducible 2-complexes*
<http://scholarworks.boisestate.edu/td/815/>
3. Uri Rogers
Ph.D. Electrical and Computer Engineering, Boise State University, 2014
Advisor: Hao Chen
Dissertation: *On uniformly most powerful decentralized detection*
<http://scholarworks.boisestate.edu/td/805/>
2. Summer Lynne Kisner
M.S. Mathematics, Boise State University, 2013
Advisor: Andrés Eduardo Caicedo
Thesis: *Schur's theorem and related topics in Ramsey theory*
<http://scholarworks.boisestate.edu/td/376/>
1. Katherine Kylee Zebedeo
M.S. Mathematics, Boise State University, 2012
Advisor: Uwe Kaiser
Thesis: *Regular homotopy of closed curves on surfaces*
<http://scholarworks.boisestate.edu/td/326/>

Academic Advising — Undergraduate Senior Theses

16. Zachary Camargo
B.S. Chemistry and B.S. Mathematics, Boise State University, 2024
Senior thesis: *Mathematical Foundations of Molecular Symmetry*
15. Sam Deters
B.S. Mathematics, Boise State University, 2023
Senior thesis: *Using Generating Functions to Prove an Identity of Partitions*

14. Camryn Edens
B.S. Applied Mathematics, Boise State University, 2022
Senior thesis: *Home Field Advantage, Myth or Fact?*
13. Mariah Davis
B.S. Applied Mathematics, Boise State University, 2022
Senior thesis: *The Reading Trends of Seattle Residents*
12. Amanda Lopez
B.S. Mathematics, Boise State University, 2022
Senior thesis: *Significant Cryptological Events Through WWII*
11. Miranda Schaeffer
B.S. Mathematics, Boise State University, 2021
Senior thesis: *Partially Ordered Sets*
10. Sarah Hall
B.S. Mathematics, Boise State University, 2021
Senior thesis: *Permutation statistics*
9. Tyler Ware
B.S. Applied Mathematics, Boise State University, 2021
Senior thesis: *Waring rank's utility in optimizing algorithms involving point evaluations of homogeneous polynomials*
8. Bailey Fadden
B.S. Applied Mathematics, Boise State University, 2020
Senior thesis: *Using the Chi-Square Test to Analyze Voter Behavior*
7. Kayla Neal
B.S. Mathematics, Boise State University, 2018
Senior thesis: *The Cayley-Bacharach theorem*
6. Amanda Aydelotte
B.S. Mathematics, Boise State University, 2017
Senior thesis: *An Exploration of the Chromatic Polynomial*
5. Karly Reid
B.S. Mathematics, Boise State University, 2017
Senior thesis: *Hyperbolic Geometry: History, Models, and Art*
4. Kyle Auble
B.S. Mathematics, Boise State University, 2018
3. Brandon Sams
B.S. Mathematics, Boise State University, 2017
Senior thesis: *Complementary Coffee Cups*
2. Stacia Orr
B.S. Mathematics, Boise State University, 2016
Senior thesis: *Cubik Mathemagic*

1. Brent El-Bakri
B.S. Mathematics, Boise State University, 2014
Senior thesis: *A brief encounter with linear codes*

Academic Advising — Other

2. Mentor for STEP Undergraduate researcher Nick Walker, 2012–2013
1. Appointed to Graduate Faculty, 2011

Service — Professional

5. Member, MAA Committee on Paul R. Halmos–Lester R. Ford Awards, 2017–2021
4. Reviewer for granting agencies:
 3. Narodowe Centrum Nauki (Poland), 2019
 2. NSERC (Canada), 2016
 1. NSA, 2016
3. Referee for journal articles:

Year	# Journals	# Papers
2006	1	1
2009	1	1
2010	3	4
2011	3	3
2012	3	4
2013	3	3
2014	3	3
2015	4	4
2016	7	7
2017	5	6
2018	2	2

2. MathSciNet reviewer, 2007–Present.
To date: 39 articles reviewed
1. University of Nebraska MCTP-IMMERSE summer program, June-July 2007

Service — Department

14. Organized TATERS (Topics in Algebra, Topology, Etc., Research Seminar) 2020–Present
13. Selection Committee for Clinical Assistant Professor in Statistics; Chair, 2022-2023
12. Personnel & Budget Committee (PBC), 2017–Present; Chair, 2019-2022
11. Visiting Assistant Professor Selection Committee, 2019

10. Graduate Committee, 2017–2019
9. Undergraduate Committee, Mathematics, 2017–2019
8. Computational and Applied Math/Stat Tenure Track Hiring Committee, 2017–2018
7. Salary committee, 2015, 2016
6. Developed ScholarWorks web collection of undergraduate senior theses in mathematics (http://scholarworks.boisestate.edu/math_undergraduate_theses/)
5. Scholarship Committee, 2013–Present; Chair, 2014–Present
4. Hosted colloquium visitors:
 12. Brian Harbourne (University of Nebraska), March 2018
 11. Aaron Bertram (University of Utah), October 2017
 10. Bruce Reznick (UIUC), April 2016
 9. Ellen Veomett (St. Mary's College of California), April 2016
 8. Hirotachi Abo (U. Idaho), February 2016
 7. Jarosław Buczyński (IMPAN), November 2014
 6. Gregory G. Smith (Queen's University), October 2014
 5. Jennifer Kacmarcik (University of Montana), September 2014, October 2014
 4. Alexander Woo (University of Idaho), November 2012
 3. Colleen Robles (Texas A&M University), October 2012
 2. Hirotachi Abo (University of Idaho), March 2012
 1. Jim Wolper (Idaho State University), January 2011
3. Faculty advisor for Math Club, 2012–2016, 2017–2018
2. Organized Algebra, Geometry, & Cryptology Seminar 2010–2020
1. Organized travel for Boise State graduate students to attend AMS 2011 Fall Western Section Meeting in Salt Lake City

Service — College

5. College Curriculum Committee (Math & Science), 2019–Present
4. Bronco Day, Apr. 11, 2015
3. Major Madness, Mar. 3, 2015
2. Orientation advising, Summer 2014, Summer 2015
1. Advising Matters Day, Oct. 1, 2014

Service — University

5. Peer reviewer for Program Assessment Review, 2019

4. University Curriculum Committee, September 2014–2016
3. Senate Faculty Diversity Committee, March 2013–2015, Chair, 2015–2016
2. Co-chair, Foundation Scholar Awards Committee, Research/Creativity Sub-Committee, November 2011–April 2012
1. CID-Mathematics Committee, April–October 2011

Community Outreach

3. Co-developed and co-led Boise Math Teachers' Circle, 2015–present
<http://boisemathcircles.org/teachers/>
 Supported 2015–2017 by American Institute of Mathematics and Boise State University Concurrent Enrollment
2. Judged student oral and poster presentations at the AAAS (American Association for the Advancement of Science) regional meeting, mathematics symposium, June 25–26, 2012.
1. Correspondence with prison inmate studying from Aschbacher's *Finite Group Theory*, answering questions and providing feedback on proofs and problem solutions (exchanged 9 letters through prison staff intermediary during June–November 2011; following inmate release on parole in December 2011, direct correspondence continued through email for about a year)

Professional Development

8. Boise State Center for Teaching and Learning (CTL) FTSS (Flexible Teaching for Student Success) Workshop - Active Learning in Asynchronous Settings, July 2020
7. Boise State Center for Teaching and Learning (CTL) FTSS (Flexible Teaching for Student Success) Workshop - Establishing Instructor Presence online, July 2020
6. Boise State Center for Teaching and Learning (CTL) Faculty Learning Community (FCL): Designing for Student Success (DSS), Spring-Fall 2020
5. Faculty Advising Institute, April, 2012
4. Great Ideas for Teaching and Learning Symposium, January, 2012
3. Boise State Best Practices in STEM Teaching Symposium, January, 2011
2. Boise State/NSF STEM Teaching Scholars: Teaching for STEM Student Success, 2010–2011
1. Project NExT, 2006–7 (sepia dot)

Professional Associations

4. Association for Women in Mathematics, 2016–Present
3. Society for Industrial and Applied Mathematics, 2010–Present
 SIAM Activity Group in Algebraic Geometry
2. American Mathematical Society, 2004–Present

1. Mathematical Association of America, 2004–Present

Courses Taught:

College Algebra
Trigonometry
Precalculus
Business Mathematics (Finite Math)
Calculus I
Calculus II
Multivariable and Vector Calculus
Introduction to Differential Equations with Matrix Theory
Topics in Applied Mathematics (Linear Algebra)
Discrete and Foundational Mathematics
Mathematical Proofs and Methods
Introduction to Linear Algebra
Introduction to Abstract Algebra and Number Theory
Foundations of Geometry
Foundations of Analysis
Combinatorics
Abstract Algebra
Number Theory
Complex Variables
Real Analysis
Topics in Graph Theory
Advanced Number Theory
Advanced Topology
Advanced Analysis