

**CURRICULUM VITAE**  
SEAN SATHER-WAGSTAFF  
January 15, 2015

**Contact Information**

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**Research Interests**

Commutative Algebra, Homological Algebra

**Education in Mathematics**

AB - University of California at Berkeley, 1993  
MS - University of Utah, 1998; Paul C. Roberts, advisor  
PhD - University of Utah, 2000; Paul C. Roberts, advisor  
Dissertation: *A Dimension Inequality for Excellent, Cohen-Macaulay Rings Related to the Positivity of Serre's Intersection Multiplicity*

**Positions in Mathematics**

1995 - Instructor, San Francisco State University  
1995-1999 - Teaching Fellow, University of Utah  
1999 - Graduate Student Mentor, University of Utah  
1999-2000 - University Research Fellow, University of Utah  
2000-2004 - NSF Mathematical Sciences Postdoctoral Research Fellow and VIGRE Research Assistant Professor, University of Illinois at Urbana-Champaign  
2004-2005 - Visiting Assistant Professor, University of Nebraska-Lincoln  
2005-2006 - Assistant Professor, California State University, Dominguez Hills  
2006-2007 - Visiting Assistant Professor, Kent State University  
2007-2012 - Assistant Professor, North Dakota State University (NDSU)  
2012-present - Associate Professor, North Dakota State University (NDSU)

**External Funding**

2001-2004 - NSF Mathematical Sciences Postdoctoral Research Fellowship, \$90,000  
2006 - NSA Conference Grant, \$15,000  
2009-2010 - NSA Young Investigators Grant, \$30,000  
2013-2015 - NSA Standard Grant, \$51,692

**Significant Internal Funding**

2006 - Sally Casanova Memorial Mini-Grant, California State University, Dominguez Hills, University Committee on Research, Scholarship, Creative Activity: course buy-out  
2009-2011 - ND EPSCoR Doctoral Dissertation Assistantship for Bethany Kubik: \$38,720  
2010-2011 - ND EPSCoR IIP Seed Grant: \$29,000  
- NDSU Graduate College Doctoral Dissertation Fellowship for Benjamin Anderson: \$21,333  
- NDSU Graduate College Doctoral Dissertation Fellowship for Saeed Nasseh: \$18,000  
2013-2015 - ND EPSCoR Doctoral Dissertation Assistantship for Jonathan Totushek: \$39,160  
2014-2016 - ND EPSCoR Doctoral Dissertation Assistantship for Hannah Altmann: \$42,406

### Honors and Fellowships

- 1996 - Outstanding Teaching Fellow, University of Utah Mathematics
- 1999–2000 - University Research Fellowship, University of Utah College of Science
- 2000 - Liftoff Mathematician, Clay Mathematics Institute
- 2002–2003 - Incomplete List of Teachers Ranked as Excellent by Their Students, University of Illinois at Urbana-Champaign, listed three semesters
- 2003 - General Membership, Mathematical Sciences Research Institute, Spring Semester, Year-Long Program in Commutative Algebra
- 2006 - Early-career faculty member, University of Nebraska-Lincoln, Intensive Mathematics: a Mentoring, Education and Research Summer Experience
- 2010 - Tapestry of Diverse Talents, NDSU
- 2011 - College of Science and Mathematics Award for Excellence in Research

### Refereed Research Publications, Appeared

1. *Multiplicities and a dimension inequality for unmixed modules*, J. Algebra **238** (2001), 372–388.
2. *A dimension inequality for Cohen-Macaulay rings*, Trans. Amer. Math. Soc. **354** (2002), 993–1005.
3. *Intersections of symbolic powers of prime ideals*, J. London Math. Soc. (2) **65** (2002), no. 3, 560–574.
4. *On symbolic powers of prime ideals*, Commutative algebra. Interactions with Algebraic Geometry, Contemp. Math. **331** (2003), 329–342.
5. *G-dimension over local homomorphisms. Applications to the Frobenius endomorphism*, with S. Iyengar, Illinois J. Math. **48** (2004), no. 1, 241–272.
6. *Complete intersection dimension for complexes*, J. Pure Appl. Algebra **190** (2004), no. 1–3, 267–290. <sup>1</sup>
7. *Characterizing local rings via homological dimensions and regular sequences*, with S. Salarian and S. Yassemi, J. Pure Appl. Algebra **207** (2006), no. 1, 99–108. <sup>2</sup>
8. *The set of semidualizing complexes is a nontrivial metric space*, with A. Frankild, J. Algebra **308** (2007), no. 1, 124–143.
9. *Reflexivity and ring homomorphisms of finite flat dimension*, with A. Frankild, Comm. Algebra **35** (2007), no. 2, 461–500. <sup>3</sup>
10. *Semidualizing modules and the divisor class group*, Illinois J. Math. **51** (2007), no. 1, 255–285.
11. *Detecting completeness from Ext-vanishing*, with A. J. Frankild, Proc. Amer. Math. Soc. **136** (2008), no. 7, 2303–2312.
12. *Stability of Gorenstein categories*, with T. Sharif and D. White, J. London Math. Soc.(2) **77** (2008), no. 2, 481–502.
13. *An Euler characteristic for modules of finite G-dimension*, with D. White, Math. Scand. **102** (2008), no. 2, 206–230.
14. *Ascent of module structures, vanishing of Ext, and extended modules*, with A. J. Frankild and R. A. Wiegand, Michigan Math. J. **57** (2008), 321–337.
15. *Complete intersection dimensions and Foxby classes*, J. Pure Appl. Algebra **212** (2008), no. 12, 2594–2611.
16. *A Cohen-Macaulay algebra has only finitely many semidualizing modules*, with L. W. Christensen, Math. Proc. Cambridge Philos. Soc. **145** (2008), no. 3, 601–603.
17. *Gorenstein cohomology in abelian categories*, with T. Sharif and D. White, J. Math. Kyoto Univ. **48** (2008), no. 3, 571–596.
18. *Relations between semidualizing complexes*, with A. J. Frankild and A. Taylor, J. Commut. Algebra **1** (2009), no. 3, 393–436.

<sup>1</sup>This paper was on the list “Top 25 Hottest Articles” for this journal October–December 2006.

<sup>2</sup>This paper was on the list “Top 25 Hottest Articles” for this journal July–September 2008.

<sup>3</sup>This paper was one of the top ten cited articles for Comm. Algebra in the years 2006–2010.

19. *Maps on divisor class groups induced by ring homomorphisms of finite flat dimension*, with S. Spiroff, J. Commut. Algebra **1** (2009), no. 3, 567–590.
20. *Modules of finite homological dimension with respect to a semidualizing module*, with S. Yassemi, Arch. Math. (Basel) **93** (2009), no. 2, 111–121.
21. *Descent via Koszul extensions*, with L. W. Christensen, J. Algebra **322** (2009), no. 9, 3026–3046.
22. *Bass numbers and semidualizing complexes*, Commutative Algebra and its Applications, de Gruyter (2009), 349–381.
23. *Transfer of Gorenstein dimensions along ring homomorphisms*, with L. W. Christensen, J. Pure Appl. Algebra **214** (2010), no. 6, 982–989. <sup>4</sup>
24. *Comparison of relative cohomology theories with respect to semidualizing modules*, with T. Sharif and D. White, Math. Z. **264** (2010), no. 3, 571–600.
25. *Tate cohomology with respect to semidualizing modules*, with T. Sharif and D. White, J. Algebra **324** (2010), no. 9, 2336–2368. <sup>5</sup>
26. *Rings that are homologically of minimal multiplicity*, with K. Borna and S. Yassemi, Comm. Algebra **39** (2011), no. 3, 782–807.
27. *AB-contexts and stability for Gorenstein flat modules with respect to semidualizing modules*, with T. Sharif and D. White, Algebr. Represent. Theory **14** (2011), no. 3, 403–428.
28. *Homology of artinian and Matlis reflexive modules, I*, with B. Kubik and M. Leamer, J. Pure Appl. Algebra **215** (2011), no. 10, 2486–2503. <sup>6</sup>
29. *Second symmetric powers of chain complexes*, with A. J. Frankild and A. Taylor, Bull. Iranian Math. Soc. **37** (2011), no. 3, 39–75.
30. *Lower bounds for the number of semidualizing complexes over a local ring*, Math. Scand. **110** (2012), no. 1, 5–17.
31. *Presentations of rings with non-trivial semidualizing modules*, with D. A. Jorgensen and G. J. Leuschke, Collect. Math. **63** (2012), no. 2, 165–180.
32. *Regular pullbacks*, with J. Boynton, Progress in Commutative Algebra 2, de Gruyter (2012), 145–169.
33. *On zero divisor graphs*, with J. Coykendall, L. Sheppardson, and S. Spiroff, Progress in Commutative Algebra 2, de Gruyter (2012), 241–299.
34. *Liftings and quasi-liftings of DG modules*, with S. Nasseh, J. Algebra, **373** (2013), 162–182. <sup>7</sup>
35. *Embedding modules of finite homological dimension*, Glasgow Math. J., **55** (2013), no. 1, 85–96.
36. *Edge ideals of weighted graphs*, with C. Paulsen, J. Algebra Appl., **12** (2013), no. 5, 24 pp.
37. *Krull dimension for differential graded algebras*, with K. A. Beck, Arch. Math. (Basel), **101**, (2013), no. 2, 111–119.
38. *Decompositions of monomial ideals in real semigroup rings*, with D. Ingebreton, Comm. Algebra, **41**, (2013), no. 11, 4363–4377.
39. *Multiplicities of semidualizing modules*, with S. Cooper, Comm. Algebra, **41**, (2013), no. 12, 4549–4558.
40. *Homology of artinian and Matlis reflexive modules, II*, with B. Kubik and M. Leamer, J. Algebra, **403**, (2014), no. 1, 229–272.
41. *Relative Tor functors with respect to a semidualizing module*, with M. Salimi, E. Tavasoli, and S. Yassemi, Algebr. Represent. Theory, **17** (2014), no. 1, 103–120.
42. *NAK for Ext and ascent of module structures*, with B. J. Anderson, Proc. Amer. Math. Soc., **142** (2014), no. 2, 1165–1174.
43. *Ascent properties for pairs of modules*, Arch. Math. (Basel), **103**, (2014), no. 3, 211–218.
44. *Reflexivity and connectedness*, Glasgow Math. J., **57**, (2014), no. 1, 231–240.

<sup>4</sup>This paper was on the list “Top 25 Hottest Articles” for this journal October–December 2009, April–June 2010, October 2009–September 2010 (academic year), October–December 2010, January–March 2011.

<sup>5</sup>This paper was on the list “Top 25 Hottest Articles” for this journal July–September 2010.

<sup>6</sup>This paper was on the list “Top 25 Hottest Articles” for this journal April–June 2010.

<sup>7</sup>This paper was on the list “Top 25 Hottest Articles” for this journal October–December 2012.

45. *Cohen factorizations: weak functoriality and applications*, with S. Nasseh, *J. Pure Appl. Algebra*, **219**, (2015), no. 3, 622–645.

#### **Refereed Research Publications, To Appear**

46. *Krull dimension of monomial ideals in polynomial rings with real exponents*, with Z. Andersen, *Comm. Algebra*, to appear. [arxiv:1305.5460](#)
47. *Contracting endomorphisms and dualizing complexes*, with S. Nasseh, *Czechoslovak Math. J.*, to appear. [arxiv:1210.2700](#)
48. *Torsion in kernels of induced maps on divisor class groups*, with S. Spiroff, *J. Algebra Appl.*, to appear. [arxiv:1302.6552](#)
49. *Path ideals of weighted graphs*, with B. Kubik, *J. Pure Appl. Algebra*, to appear. [arxiv:1408.1674](#)

#### **Refereed Research Publications, Submitted**

50. *A local ring has only finitely many semidualizing complexes up to shift-isomorphism*, with S. Nasseh, submitted (2012). [arxiv:1201.0037](#)
51. *On the structure of  $S_2$ -ifications of complete local rings*, with S. Spiroff, submitted (2014). [arxiv:1401.6146](#)
52. *Support and adic finiteness for complexes*, with R. Wicklein, submitted (2014). [arxiv:1401.6925](#)
53. *Using semidualizing complexes to detect Gorenstein rings*, with J. Totushek, preprint (2014). [arxiv:1412.7125](#)
54. *Gorenstein injective decompositions over Cohen-Macaulay rings with dualizing modules*, with A. J. Feickert, preprint (2014). [arxiv:1412.2654](#)

#### **Refereed Research Publications, Preprints**

55. *Local rings of embedding codepth at most 3 have only trivial semidualizing complexes*, with S. Nasseh, preprint (2013). [arxiv:1401.0210](#)

#### **Other Refereed Publications**

1. *A somewhat gentle introduction to differential graded commutative algebra*, with K. Beck, *Connections between Algebra, Combinatorics, and Geometry*, Springer Proceedings in Mathematics and Statistics **76** (2014), 3–99.
2. *Decompositions of Monomial Ideals*, with W. F. Moore and M. Rogers, textbook, submitted (2011).

#### **Invited Conference and Workshop Lectures**

- 1999 - AMS Special Session on Algebraic Geometry and Commutative Algebra, University of North Texas
- AMS Special Session on Commutative Algebra, University of Utah
  - Midwest Algebraic Geometry Conference, University of Missouri, Columbia
- 2000 - AMS Special Session on Algebraic Geometry and Commutative Algebra, Washington, DC
- Centennial Celebration of Commutative Algebra, University of Nebraska-Lincoln
- 2001 - Algebra Weekend 2001, University of Missouri, Columbia
- Colloque «Algèbre Commutative», Institut Fourier, Grenoble, France
  - AMS Special Session on Commutative Algebra, Williams College
- 2002 - AMS Special Session on Commutative Algebra and Algebraic Geometry, San Diego, CA
- 2003 - AMS-IMS-SIAM Summer Research Conference, Commutative Algebra: Presentations by Young Researchers, Snowbird, UT
- 2004 - AMS Special Session on Syzygies and Hilbert Functions, Florida State University
- AMS Special Session on the Homological Algebra of Commutative Rings, Houston, TX
  - Four lectures in the mini-course “Classical Problems in Commutative Algebra”, University of Utah

- BIRS workshop “Commutative Algebra: Homological and Birational Theory”, Banff, Canada
- Workshop on Resolutions for Young Researchers, Cornell University
- AMS Special Session on Local and Homological Algebra, Vanderbilt University
- KUMUNU 6, University of Kansas
- 2005 - Nebraska Commutative Algebra Conference: WiegandFest, University of Nebraska-Lincoln
- Commutative Algebra Conference honoring the contributions of Phillip Griffith, University of Illinois at Urbana-Champaign
- AMS Special Session on Homological Aspects of Commutative Algebra, Bard College
- 2006 - Homological Conjectures in Commutative Algebra; A Conference in Honor of Paul Roberts’ Sixtieth Birthday, Snowbird, UT
- AMS Special Session on Commutative Algebra, University of Utah
- Route 81 Conference on Algebraic Geometry and Commutative Algebra, Syracuse University
- 2007 - BIRS workshop “Commutative Algebra and its Interaction with Algebraic Geometry”, Banff, Canada
- AMS Special Session on Free Resolutions, DePaul University
- 2008 - Commutative Algebra: Connections with Algebraic Topology and Representation Theory, University of Nebraska-Lincoln
- AMS Special Session on Hilbert Functions & Free Resolutions, University of British Columbia
- 2009 - 4th World Conference on 21st Century Mathematics, Abdus Salam School of Mathematical Sciences, Lahore, Pakistan
- AMS Special Session on Local and Homological Methods in Commutative Algebra, University of Illinois at Urbana-Champaign
- AMS Special Session on Commutative Algebra: Module and Ideal Theory, Baylor University
- 2010 - GSSCCF Commutative Algebra Meeting, Central Florida University
- CIMPA-TUBITAK Conference on Commutative Algebra and Applications to Combinatorics and Algebraic Geometry, Galatasaray University, Istanbul, Turkey
- AMS Special Session on Commutative Algebra and Its Interactions with Algebraic Geometry, Notre Dame University
- 2011 - AMS Special Session on Commutative Ring Theory, University of Iowa
- Commutative Algebra Conference Factorization and Zero-Divisor Graphs, University of Iowa
- AMS Special Session on Algebraic Geometry and Graded Commutative Algebra, University of Nebraska-Lincoln
- 2012 - AMS Special Session on Singularities in Commutative Algebra and Algebraic Geometry, University of Kansas
- Summer School on Algebra and Geometry, University of Regina
- AMS Special Session on Topics in Commutative Algebra, University of Arizona
- 2013 - AMS Special Session on Commutative Ring Theory, Iowa State University
- AMS Special Session on Commutative Rings, Ideals, and Modules, University of Louisville
- AMS Special Session on Commutative Algebra and its Interaction with Algebraic Geometry and Combinatorics, University of California Riverside
- 2014 - AMS Special Session on Interactions in Commutative Algebra, University of New Mexico
- AMS Special Session Commutative Algebra, University of New Mexico
- AMS Special Session on Interactions Between Commutative Algebra and Algebraic Geometry, Texas Tech University
- AMS Special Session on Directions in Commutative Algebra: Past, Present and Future, University of Wisconsin-Eau Claire
- AMS Special Session on Directions in Commutative Ring Theory, University of Wisconsin-Eau Claire
- AMS Special Session Commutative Algebra and Its Interactions with Algebraic Geometry, Dalhousie University

**Departmental Seminars and Colloquia Given**<sup>8</sup>

- 1999 - Mathematics Department Undergraduate Colloquium, University of Utah
  - Mathematics Department Undergraduate Colloquium, University of California at Berkeley
  - Mathematics Department Colloquium, San Francisco State University
- 2000 - Mathematics Department Graduate Colloquium, University of Utah
  - Commutative Algebra Seminar University of Kansas
- 2002 - Mathematics Department Graduate Colloquium, University of Illinois at Urbana-Champaign
  - Commutative Algebra Seminar University of Kansas
  - Commutative Algebra Seminar, Purdue University
- 2004 - Mathematics Department Colloquium, University of Nebraska-Lincoln
- 2005 - Mathematics Department Colloquium, California State University, Dominguez Hills,
- 2006 - Commutative Algebra Seminar, University of Nebraska-Lincoln
  - Commutative Algebra Seminar, University of California at Riverside
  - Mathematics Department Colloquium, University of Copenhagen,
  - Summer Algebra Research Seminar, University of Nebraska-Lincoln
  - Mathematics Department Colloquium, Kent State University,
- 2007 - Mathematics Department Colloquium, University of Copenhagen,
- 2008 - Mathematics Department Colloquium, Texas Tech University
  - Algebra Seminar, Texas Tech University
  - Short Course (ten lectures), School of Mathematics, Institute for Studies in Theoretical Physics and Mathematics, Tehran, Iran
  - Commutative Algebra Seminar, University of Michigan
- 2009 - Representation Theory Seminar and Geometry, Algebra, Singularities and Combinatorics Seminar, Northeastern University
- 2010 - Mathematics Department Colloquium, University of Mississippi
  - Commutative Algebra Seminar, University of Nebraska-Lincoln
  - Algebra Seminar, University of Kansas
- 2011 - Commutative Algebra Seminar, University of California, Riverside
- 2012 - Algebra Seminar, University of Texas at Arlington
  - Mathematics and Statistics Department Colloquium, University of Regina
  - Algebra Seminar, Wake Forest University
  - Algebra and Number Theory Seminar, University of Arizona
  - Undergraduate Mathematics Seminar, University of Arizona
- 2013 - Algebra Seminar, Central Michigan University
- 2014 - Commutative Algebra Seminar, University of Utah
- 2015 - Algebra and Number Theory Seminar, Representation Theory and Commutative Algebra Seminar, and Mathematics Colloquium, University of Connecticut

**Other Lectures and Panels**

- 2009 - World iView Speaker Series, NDSU, speaker
  - Simple Facts and Big Questions, a Multi-disciplinary Panel Discussion in Connection with the Mathematics of Ecstasy exhibition, NDSU, panelist
- 2010 - Science Cafe, NDSU, speaker
- 2011 - Pedagogical Luncheon, NDSU, co-presenter
- 2012 - Open Forum on Faculty Disability Survey, NDSU, co-presenter
  - Panel Discussion on Graduate School, Wake Forest University, panelist
- 2014 - Panel Discussion on Graduate School, University of Utah, panelist

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<sup>8</sup>Job talks and seminars given at home institution not listed.

**Conferences, Schools, and Special Sessions Co-organized**

- 2005 - Special Session in Commutative Algebra, Joint Mathematics Meetings, Atlanta, GA  
 - Special Session in Commutative Algebra, AMS Sectional Meeting, University of Nebraska-Lincoln
- 2006 - Special Session on Resolutions and Hilbert Functions, AMS Sectional Meeting, San Francisco State University  
 - Homological conjectures in commutative algebra: A conference in honor of Paul C. Roberts, Snowbird, UT  
 - Kent Regional Algebra Weekend, Kent State University
- 2008 - Special Session on Progress in Commutative Algebra, Joint Mathematics Meetings, San Diego, CA  
 - Mathematics on the Northern Plains, NDSU
- 2009 - Special Session on Homological Aspects of Module Theory, AMS Sectional Meeting, Florida Atlantic University
- 2010 - Special Session on Commutative Algebra, Joint Mathematics Meetings, San Francisco, CA
- 2012 - Special Session on Interactions Between Algebraic Geometry and Commutative Algebra, CMS 2012 Summer Meeting, University of Regina  
 - Workshop on Connections between Algebra and Geometry, University of Regina  
 - Special Session on Commutative Algebra, AMS Sectional Meeting, University of Akron
- 2013 - Special Session on Commutative Algebra, AMS Sectional Meeting, University of Mississippi  
 - Further Connections Between Algebra and Geometry, North Dakota State University
- 2014 - Special Session on Homological and Characteristic  $p$  Methods in Commutative Algebra, Joint Mathematics Meetings, Baltimore, MD

**Seminars Organized and Co-organized in Mathematics**

- 1998–2000 - Commutative Algebra Seminar, University of Utah
- 1999–2000 - Graduate Colloquium, University of Utah
- 2000–2002 - Research Among Peers, University of Illinois at Urbana-Champaign
- 2000–2004 - Commutative Ring Theory Seminar, University of Illinois at Urbana-Champaign
- 2001–2002 - Math 500, University of Illinois at Urbana-Champaign  
 2004 - Research Among Peers, University of Illinois at Urbana-Champaign  
 2004 - Research Experience for Grad Students, University of Illinois at Urbana-Champaign
- 2006–2007 - Homological Algebra Seminar, Kent State University
- 2006–2007 - Undergraduate Colloquium, Kent State University
- 2007–2008 - Homological Algebra Seminar, NDSU
- 2010–2013 - Teaching/First Year Graduate Seminar, NDSU  
 2010 - Semidualizing Modules and Completions Seminar, NDSU
- 2010–2011 - Koszul Seminar, NDSU  
 2011 - Semidualizing Modules Seminar, Eisenbud Seminar, NDSU  
 2012 - Completion Seminar, NDSU
- 2012, 2013 - Spectral Sequences Seminar, NDSU
- 2013–2014 -  $N$ th Year Graduate Seminar, NDSU  
 2014 - Koszul Seminar, NDSU

**Refereeing and Reviewing**

Referee for: Advances in Mathematics, AJSE-Mathematics, Algebra Colloquium, Algebras and Representation Theory, American Mathematical Monthly, Arabian Journal of Mathematics, Archiv der Mathematik, Arkiv för Matematik, Bulletin of the Australian Mathematical Society, Bulletin of the Iranian Mathematical Society, Bulletin of the Korean Mathematical Society, Bulletin of the London Mathematical Society, Bulletin of the Malaysian Mathematical Sciences Society, Canadian Journal of Mathematics, Central European Journal of Mathematics, Communications in Algebra,

Czechoslovak Mathematical Journal, Forum Mathematicum, Glasgow Mathematical Journal, Homology, Homotopy and Applications, Illinois Journal of Mathematics, Indian Journal of Pure and Applied Mathematics, International Journal of Algebra and Computation, Israel Journal of Mathematics, Italian Journal of Pure and Applied Mathematics, Journal of Algebra, Journal of Algebraic Systems, Journal of Algebra and Its Applications, Journal of the Australian Mathematical Society, Journal of the Korean Mathematical Society, Journal of the London Mathematical Society, Matematicki Vesnik, Mathematische Zeitschrift, Mediterranean Journal of Mathematics, Michigan Mathematical Journal, Nagoya Mathematical Journal, Osaka Journal of Mathematics, Pacific Journal of Mathematics, Proceedings of the American Mathematical Society, Publicacions Matemàtiques, Quaestiones Mathematicae, Rendiconti del Seminario Matematico di Padova, Rocky Mountain Journal of Mathematics, Science China Mathematics, Studia Scientiarum Mathematicarum Hungarica, Turkish Journal of Mathematics

Reviewer for: Mathematical Reviews, NSF, National Security Agency, Springer Verlag

### **Editing**

Journal of Commutative Algebra, Associate Editor, since 2012; guest editor, vol. 1, no. 3, 2009

Progress in Commutative Algebra 1–2, de Gruyter, co-editor, 2012

Connections Between Algebra, Combinatorics, and Geometry, Birkhauser, co-editor, 2014

### **Other University Service**

1996–1999 - Campus-Wide New TA Orientation panelist and facilitator, University of Utah Center for Teaching and Learning Excellence

2005–2006 - Enrollment Management Policy Council—Outreach and Recruitment Task Force member, California State University, Dominguez Hills

2008–2011 - University/Faculty Senator, NDSU

2009 - Faculty In Residence Education Program, First Year Experience Faculty Mentor, NDSU

2009–2011 - University/Faculty Senate Executive Committee member, NDSU

2010 - University/Faculty Senate Special Committee on Academic Dishonesty member, NDSU

2010–2013 - Commencement Marshal, NDSU

2010–2013 - Internal Review Committee member, FORWARD Leap Lab Renovation Grant Program and Leap Grant Program, NDSU; 2010, 2012, 2013

2010 - Interdisciplinary Listening Group facilitator, NDSU

2010–2011 - Instructional Development Committee member, NDSU

2011 - Summer STEM Internship Program Symposium judge, NDSU

2012–2014 - Academic Honesty for Mathematics Tutors trainer, ACE, NDSU

2011–2013 - FORWARD Task Force on Women Faculty with Disabilities member, NDSU

2011–2013 - Disability/Accessibility Initiatives Committee member, NDSU

2012–2013 - FORWARD Steering Committee member, NDSU

2012–2013 - FORWARD Committee member, NDSU

2013 - Graduate School Review Panel for Doctoral Dissertation Fellowships panelist, NDSU

2013 - Presidential Task Force on Academic Freedom, NDSU

2013–2014 - University/Faculty Senator, NDSU

2013–2017 - Faculty Senate Executive Committee member (chair 2015–2016), NDSU

2013–2015 - Faculty Senate Committee on Equity and Diversity liaison, NDSU

2014 - New Faculty Cohort Mentoring Programs, mentor

2014 - University Strategic Planning, Learning Task Force member, NDSU

ongoing - FORWARD Advocate, since 2010, Coordinator 2012–2014, NDSU

2014–2015 - Faculty Senate President Elect, NDSU

2014–2016 - Senate Coordinating Council member, NDSU

2015–2016 - Faculty Senate President, NDSU

2016–2017 - Faculty Senate Past President, NDSU

2016–2017 - Program Review Committee member, NDSU



**Other College Service**

- 1998 - Retention-Promotion-Tenure Committee member, University of Utah
- 2005 - Ad Hoc Enrollment Committee co-chair, California State University, Dominguez Hills
- 2009 - Ad Hoc Committee on Academic Honesty member, NDSU
- 2009 - Teaching Seminar panelist, NDSU
- 2009 - Junior Faculty Seminar panelist, NDSU
- 2009–2011 - Chair's Council member, NDSU
- 2013–2014 - Chair's Council member, NDSU
- 2013–2014 - Ad Hoc Committee on PTE Committee Composition chair, NDSU

**Other Department Service**

- 1996–2000 - Graduate Student Advisory Committee member, University of Utah
- 1998, 1999 - New TA Orientation facilitator, University of Utah
- 2002 - Graduate Student Job Panel panelist, University of Illinois at Urbana-Champaign
- 2002–2003 - Graduate Seminar in Commutative Algebra and Algebraic Geometry faculty advisor, University of Illinois at Urbana-Champaign
- 2003 - New TA Orientation presenter, University of Illinois at Urbana-Champaign
- 2005–2006 - By-laws Committee member California State University, Dominguez Hills
- 2005–2006 - Library and Support for Faculty Research Committee member, California State University, Dominguez Hills
- 2005–2006 - Enrollment Management, Outreach, and Recruitment of Students Committee member, California State University, Dominguez Hills
- 2005–2006 - Outreach Liaison, California State University, Dominguez Hills
- 2006 - Putnam Exam preparation workshop co-organizer, Kent State University
- 2007–2009 - Hiring Committee member, NDSU
- 2007–2009 - Colloquium Director, NDSU
- 2008–2009 - Webmaster, NDSU
- 2008–2010 - Algebra Preliminary Examination Committee chair (08–09), member (09–10), NDSU
- 2008–2012 - Assessment Committee member (08–09), chair (09–12), NDSU
- 2009 - North Dakota Governor's School instructor, short course on Elliptic Curves, NDSU
- 2010–2013 - Mathematics Executive Committee member, NDSU
- 2010–2013 - Mathematics Scholarship Committee member, NDSU
- 2010–2014 - Mathematics Graduate Program Director, NDSU
- 2011–2015 - Hiring Committee chair (four searches: 2011–2012, 2013, 2014, 2014–2015), NDSU
- 2012–2014 - Promotion, Tenure, and Evaluation Committee chair (12–13), member (13–14), NDSU
- 2012–2014 - Algebra Preliminary Examination Committee chair (12–13), member (13–14), NDSU
- 2013 - Working Group on Faculty Evaluation member, NDSU
- ongoing - Faculty advisor for Mathematics Graduate Student Organization, since 2014
- ongoing - Mathematics Graduate Committee chair, NDSU, since 2010
- ongoing - Mathematics Graduate Recruiting Chair, NDSU, since 2014

**Other Service to the Profession**

- 2002 - Organizing Committee member, Commutative Algebra Section of [arxiv.org](http://arxiv.org)
- 2009–2012 - Journal of Commutative Algebra editorial assistant
- ongoing - [commalg.org](http://commalg.org) co-founder and co-webmaster, since 2001

**Service to the Community**

- 2002, 2004 - Illinois Council of Teachers of Mathematics State Math Contest judge
- 2004 - 15th Annual Math Day moderator, University of Nebraska-Lincoln
- 2004 - Association for Women in Mathematics Essay Contest judge
- 2008–2010 - North Dakota Southeast Regional Science and Engineering Fair judge
- 2009 - Sullivan Middle School Science Fair judge

- 2009 - Tri-College Math Contest volunteer
- 2009–2011 - North Dakota College Goal Sunday volunteer
- 2013 - Expanding Your Horizons, Workshop Leader

### **Memberships**

American Association of University Professors  
 American Mathematical Society  
 Association for Women in Mathematics  
 Phi Kappa Phi National Honor Society

### **PhD Students Advised**

- 2007 - Diana White, University of Nebraska-Lincoln  
 Dissertation: *Proper Resolutions and their Applications*  
 Current position: Associate Professor, University of Colorado Denver
- 2011 - Bethany Kubik, NDSU  
 Dissertation: *Quasidualizing Modules*  
 Current position: Visiting Assistant Professor, United States Military Academy, West Point
- 2012 - Benjamin Anderson, NDSU  
 Dissertation: *NAK for Ext, Ascent of Module Structures, and the Blindness of Extended Modules*  
 Current position: Visiting Assistant Professor, University of Wisconsin-La Crosse
- 2013 - Saeed Nasseh, NDSU  
 Dissertation: *DG Homological Algebra, Properties of Ring Homomorphisms, and the Generalized Auslander-Reiten Conjecture*  
 Current Position: Assistant Professor, Georgia Southern University
- 2013 - Richard Wicklein, NDSU  
 Dissertation: *Codualizing Modules and Complexes*  
 Current Position: Assistant Professor, MacMurray College

### **MS Students Advised**

- 2014 - Aaron Feickert, NDSU  
 Paper: *Resolutions and Semidualizing Modules*  
 Current Position: PhD student, Polymers and Coatings, NDSU

### **Current Graduate Students**

- Hannah Altmann, NDSU, PhD expected Spring 2015
- Pye Aung, NDSU, PhD expected Spring 2015
- Jonathan Totushek, NDSU, PhD expected Spring 2015

### **Other Graduate Student Mentoring**

- Preliminary Examination Committees at University of Illinois at Urbana-Champaign: Jinjia Li, Andrew Richardson, Sandra Spiroff (all 2012)
- Mathematics Ph.D. Supervisory Committees at NDSU  
 completed: Stacy Trentham (2011), William Trentham (2011), Mark Batell (2014)  
 in progress: Stefan Bock, Thomas Dunn,
- Mathematics M.S. Supervisory Committees at NDSU  
 in progress: Diana Kennedy, Rebecca Ramos
- Non-Mathematics Supervisory Committees at NDSU  
 completed: Travis Docktor (M.S., 2012), Emma Swanson (M.S., 2012) Xiao Zhang (M.S., 2013), Amorette Hinderaker (Ph.D., 2013), Amanda Schwartz (Ph.D., 2013)  
 in progress: Erik Janssen (M.S.), Joshua Morman (M.S.)

**Undergraduate Student Mentoring**

2006 - Research project, David Rodarte, California State University, Dominguez Hills  
 2008 - Senior seminar, Zach Sundheim, NDSU  
 2010 - Senior seminar, Dan Ingebretson, NDSU  
 2011 - Senior seminar, Benjamin Bechtold, Conrad Olson, Andrew Solberg, Kristen Vetter, NDSU  
 2012 - Senior seminar, Jessica Baer, Chelsey Paulsen, NDSU  
 2012–2013 - McNair Scholar and Senior seminar, Zechariah Andersen, NDSU

**Courses taught at NDSU**

Calculus I, II, III, and Multivariate Calculus, Math 165, 166, 265, and 259  
 Introduction to Abstract Mathematics, Math 270  
 Abstract Algebra I and II, Math 420/620 and 421/621  
 Senior Seminar, Math 491  
 Special Topics: Monomial Ideals, Math 499/696  
 Algebra I and II, Math 720 and 721  
 Topics in Commutative Algebra, Math 724;  
     course topics: Algebraic Geometry, Monomial Ideals, Semidualizing Modules  
 Theory of Rings II, Math 725  
 Homological Algebra, Math 726

**Courses taught at Kent State University**

Calculus II, MATH 12003  
 Linear Algebra, MATH 21001  
 Introduction to Mathematical Thinking and Proofs, MATH 49995

**Courses taught at California State University, Dominguez Hills**

Calculus II, MAT 193  
 Abstract Algebra, MAT 333

**Courses taught at University of Nebraska**

Modern Algebra, Math 310H, honors section  
 Differential Equations, Math 221

**Courses taught at University of Illinois**

Calculus of Several Variables, Math 242, honors section  
 Linear Transformations and Matrices, Math 315  
 Commutative Algebra, Math 403  
 Advanced Topics in Abstract Algebra: Intersection Multiplicities, Math 416  
 Advanced Topics in Abstract Algebra: Intersection Theorems, Math 416  
 Graduate reading courses, Introduction to Commutative Algebra

**Courses taught at University of Utah**

Intermediate Algebra, Math 101/1010  
 Quantitative Thinking, Math 103/1030  
 College Algebra, Math 105/1050  
 Quantitative Analysis, Math 129/1100  
 Introduction to University Mathematics, Lib. Ed. 150  
 Calculus I and II, Math 111/1210 and 112/1220

**Courses TA'd at University of Utah**

“Intensive Calculus” (summer Calculus I–III), TA under Gerald Davey

**Course taught at San Francisco State University**

Algebra I, Math 60

**Web resources**

- Homepage - <http://www.ndsu.edu/pubweb/~ssatherw/>
- Teaching - <http://www.ndsu.edu/pubweb/~ssatherw/teach.html>
- Teaching evaluation - <http://www.ndsu.edu/pubweb/~ssatherw/ssw-eval.html>
- Research/eprints - <http://www.ndsu.edu/pubweb/~ssatherw/research.html>
- Lecture notes/slides - <http://www.ndsu.edu/pubweb/~ssatherw/notes.html>
- commalg.org - <http://www.commalg.org>

**Professional Development at NDSU**

- 2007 - New Faculty Mentoring Program
- 2007–2008 - Teaching Seminar, College of Science and Mathematics
- 2008 - Peer Review of Teaching, Fall Semester with Bill Martin
- 2008–2009 - Junior Faculty Seminar, College of Science and Mathematics
- 2009 - Safe Zone Ally Training
- 2009 - FORWARD Ally Training
- 2010 - Search Committee Chair Training
- 2010 - Peer Review of Teaching, with Jim Coykendall (Spring) and Wendy Reed (Fall)
- 2010–2012 - Emerging Leaders Seminar, College of Science and Mathematics
- 2011 - Human Subjects Research Training
- 2011 - Leadership Training for Current and Future Academic Administrators, Advance FORWARD
- 2011, 2014 - Search Committee Training, Advance FORWARD
- 2012, 2013 - PTE Committee Training, Advance FORWARD
- 2013 - Peer Review of Teaching, with Artem Novozhilov

**Professional Development at California State University, Dominguez Hills**

- 2005 - New Faculty Success Program, Center for Teaching and Learning
- 2005 - Discovery-Based Learning Seminar, Department of Mathematics
- 2005–2006 - Mentoring for Faculty Success Program, Center for Teaching and Learning

**Professional Development at University of Utah**

- 1995 - TA orientations, Department of Mathematics, Center for Teaching and Learning Excellence