Susan Hermiller
Curriculum Vitae, 30 Sept 2019

Professional Positions:

Willa Cather Professor: University of Nebraska - Lincoln, 8/2017-present
Graduate chair: 8/2011-present; Professor: 8/2007-present
Associate professor: 8/2001-8/2007; Assistant professor: 1/1999-8/2001
of New York, 9-12/2005
Member: Mathematical Sciences Research Institute, 8-12/1998
Assistant professor: New Mexico State University, 8/1994-8/1998
NSF International Postdoctoral Fellow: University of Melbourne, 8/1993-8/1994
Postdoctoral Member: Mathematical Sciences Research Institute, 9/1992-8/1993
Visiting Research Faculty: U. Warwick, 3-6/2013; Stevens Inst. Tech., 9-10/2012; CCNY, 9-12/2005

Education:

Ph.D. in mathematics: Cornell University, 5/1992
M.S. in mathematics: Cornell University, 8/1987
B.S. in physics and mathematics: Ohio State University, 6/1984

Selected Grants and Awards:

Awards:

- Fellow of the American Mathematical Society, Class of 2019
  Citation: *For contributions to combinatorial and geometric group theory and for service to the profession, particularly in support of underrepresented groups.*

Research funding:

- Simons Foundation Collaborative Grant for Mathematics 581433, PI, Geometric group theory: Algorithms, growth, and low dimensional topology, 9/2018-8/2023.
- National Science Foundation (NSF) grant DMS 1313559, Topology and Geometry of Cayley Graphs for Groups, PI (Principal Investigator), 8/2013-7/2018.
- Simons Foundation Collaborative Grant for Mathematics 245625, PI, Algorithmic and geometric aspects of group theory, 9/2012-8/2017 (declined after 9/2013 for NSF award).
- Nonacademic applied mathematics consultant (details available upon request), average 1.4 full time months/year, 2005-present.
- London Mathematical Society (LMS) Scheme 2 grant, Visiting researcher, 3-5/2013.
- LMS Scheme 2 grant, Visiting researcher (PI D. Holt), 5/2006.
- NSF grant DMS 0071037, Geometric group theory and rewriting systems, PI, 6/2000-5/2005.
- NSF grant DMS 9623088, Rewriting systems and geometric group theory, PI, 8/1996-7/1999.
- NSF grant INT 9223826, Rewriting systems for groups, PI, 8/1993-8/1994.
- Alfred P. Sloan Doctoral Dissertation Fellowship, 8/1991-5/1992.
- NSF Graduate Research Fellowship, 8/1995-8/1988.

Research conference grants:

- NSF grant DMS 1039400, Conference on Approaches to Group Theory, PI (with J. Meier, K. Vogtmann, and D. Webb), 10/2010-9/2012.
- NSF grant DMS 0855953, Conference on Geometric and Combinatorial Methods in Group Theory and Semigroup Theory, PI (with C. Bleak and J. Meakin), 2/2009-1/2011.
- NSF grant DMS 0070701, Conference on geometric and combinatorial methods in group theory and semigroup theory, PI (with J. Meakin and M. Sapir), 5-10/2000.
- National Security Agency grant MDA 904-97-1-0008, Computational algebra, PI (with R. Laubenbacher), 1-12/1997.

Education and outreach grants:

- U.S. Department of Education, GAANN (Graduate Assistantships in Areas of National Need) grant, co-PI (with J. Meakin, J. Walker, and M. Walker), 8/2012-8/2015.
- National Security Agency grant MDA 904-01-1-0010, Nebraska Conference for Undergraduate Women in Mathematics, co-PI (with A. Donsig, L. Orlandi-Korner, R. Rebarber, and J. Walker), 10/2000-10/2001.

Research Areas:

Geometric group theory and connections to low dimensional topology
Algorithmic and combinatorial aspects of group theory
Computational algebra and connections to computational complexity and formal language theory

Publications:

Research articles - submitted:

- S. Hermiller, D.F. Holt, S. Rees and T. Susse, *Automaticity for graphs of groups*, arXiv:1905.05943 (2019), 43 pp; submitted for publication.
- C. Bleak, T. Brough, and S. Hermiller, *Determining solubility for finitely generated groups of PL homeomorphisms*, arXiv:1507.06908v2 (2016), 28 pp.; submitted for publication.

Research articles - accepted or appeared:

- N. Corwin, G. Golan, S. Hermiller, A. Johnson and Z. Šunić, *Autostackability of Thompson's group F*, J. Algebra (2019), DOI: 10.1016/j.jalgebra.2019.04.004
- M. Brittenham and S. Hermiller, *A counterexample to the Bernhard-Jablan Unknotting Conjecture*, Experiment. Math. (2019), DOI: 10.1080/10586458.2019.1580633.
- M. Brittenham, S. Hermiller and T. Susse, *Geometry of the word problem for 3-manifold groups*, J. Algebra **499** (2018), 111-150.
- S. Hermiller and C. Martínez-Pérez, *HNN extensions and stackable groups*, Groups, Geom., Dyn. **12** Issue 3 (2018), 1123-1158.
- S. Hermiller and Z. Šunić, *No positive cone in a free product is regular*, Internat.J. Algebra Comput. **27** (2017), 1113-1120.
- M. Brittenham, S. Hermiller, and A. Johnson, *Homology and closure properties of autostackable groups*, J. Algebra **452** (2016), 596-617.
- L. Ciobanu, S. Hermiller, D. Holt, and S. Rees, *Conjugacy languages in groups*, Israel J. Math. **211** (2016), 311-347.
- M. Brittenham and S. Hermiller, *A uniform model for almost convexity and rewriting systems*, J. Group Theory **18** (2015), 805-828.
- M. Brittenham and S. Hermiller, *Tame filling invariants for groups*, Internat. J. Algebra Comput. **25** (2015), 813-854.
- L. Ciobanu and S. Hermiller, *Conjugacy growth series and languages in groups*, Trans. Amer. Math. Soc. **366** (2014), 2803-2825.
- M. Brittenham, S. Hermiller, and D. Holt, *Algorithms and topology for Cayley graphs of groups*, J. Algebra **415** (2014), 112-136.
- M. Brittenham, S. Hermiller, and R. Todd, *4-moves and the Dabkowski-Sahi invariant for knots*, J. Knot Theory Ramifications **22** (2013), 1350069.1-20.
- S. Cleary, S. Hermiller, M. Stein and J. Taback, *Tame combing and almost convexity conditions*, Math. Z. **269** (2011), 879-915.
- S. Hermiller, S. Lindblad and J. Meakin, *Decision problems for inverse monoids presented by a single sparse relator*, Semigroup Forum **81** (2010), 128-144.
- S. Hermiller, D. F. Holt and S. Rees, *Groups whose geodesics are locally testable*, Internat. J. Algebra Comput. **18** (2008), 911-923.
- R. H. Gilman, S. Hermiller, D. F. Holt, and S. Rees, *A characterization of virtually free groups*, Arch. Math. **89** (2007), 289-295.

- S. Hermiller, D. F. Holt and S. Rees, *Star-free geodesic languages for groups*, Internat. J. Algebra Comput. **17** (2007), 329-345.
- S. Hermiller and Z. Šunić, *Poly-free constructions for right-angled Artin groups*, J. Group Theory **10** (2007), 117-138.
- S. Hermiller and J. P. McCammond, *Noncommutative Gröbner bases for the commutator ideal*, Internat. J. Algebra Comput. **16** (2006), 187-202.
- S. Hermiller and I. Swanson, *Computations with Frobenius powers*, Experiment. Math. **14** (2005), 161-173.
- M. Elder and S. Hermiller, *Minimal almost convexity*, J. Group Theory **8** (2005), 239-266.
- J. M. Alonso and S. Hermiller, *Homological finite derivation type*, Internat. J. Algebra Comput. **13** (2003), 341-359.
- J. R. J. Groves and S. Hermiller, *Isoperimetric inequalities for soluble groups*, Geom. Dedicata **88** (2001), 239-254.
- S. Hermiller and J. Meier, *Measuring the tameness of almost convex groups*, Trans. Amer. Math. Soc. **353** (2001), 943-962.
- S. Hermiller, X. H. Kramer and R. C. Laubenbacher, *Monomial orderings, rewriting systems, and Gröbner bases for the commutator ideal of a free algebra*, J. Symbolic Comput. **27** (1999), 133-141.
- S. Hermiller and M. Shapiro, *Rewriting systems and geometric three-manifolds*, Geom. Dedicata **76** (1999), 211-228.
- S. Hermiller and J. Meier, *Artin groups, rewriting systems and three-manifolds*, J. Pure Appl. Algebra **136** (1999), 141-156.
- S. Hermiller, *Tutorial on string rewriting systems and extensions of Gröbner bases*, Proceedings of the FLoC'99 Workshop on Gröbner Bases and Rewriting Techniques, Trento, Italy, 1999, www-madlener.informatik.uni-kl.de/ag-madlener/staff/FLoC99/workshop8.html
- S. Hermiller and J. Meier, *Tame combings, almost convexity and rewriting systems for groups*, Math. Z. **225** (1997), 263-276.
- S. Hermiller and J. Meier, *Algorithms and geometry for graph products of groups*, J. Algebra **171** (1995), 230-257.
- S. Hermiller, *Rewriting systems for Coxeter groups*, J. Pure Appl. Algebra **92** (1994), 137-148.
- C. A. Scamehorn, S. Hermiller and R. M. Pitzer, *Electronic structure of polyhedral alkanes*, J. Chemical Physics **84** (1986), 833-837.
- J. A. Schiavone and S. Hermiller, *A regression model for forecasting microwave radio fading at Palmetto, GA*, IEEE Trans. Antennas and Propagation **AP-34** (1986), 936-942.
- H. B. Thompson and S. Hermiller, *A family of random number routines*, J. Comput. Math. Science Teaching **4** no.4 (1985), 57-60.
- H. B. Thompson and S. Hermiller, *Computer managed problem drill: The program* PROBLEM, J. Comput. Math. Science Teaching **2** no.1 (1982), 25-30.

Conference proceedings:

- C. Bleak, S. Hermiller, T. Jajcayova and S. Margolis, editors: Proceedings of the International Conference on Geometric and Combinatorial Methods in Group Theory and Semigroup Theory 2009, Internat. J. Algebra Comput. **21** (2011), no. 1-2.
- S. Hermiller, J. Meakin and M. Sapir, editors: Proceedings of the International Conference on Geometric and Combinatorial Methods in Group Theory and Semigroup Theory 2000, Internat. J. Algebra Comput. **12** (2002), no. 1-2.

Invited Talks:

- Redbud Topology Conference, Fayetteville, AR, 3/2020. (Invitation accepted.)
- Helen Barton Lecture Series in Computational Mathematics, U. North Carolina, Greensboro, NC, 10/2019. (Invitation accepted.)
- New York Group Theory Seminar, New York, NY, 9/2019.

- Geometric and Asymptotic Group Theory with Applications, Tel Aviv, Israel, 5/2019. (Plenary)
- Algorithmic Problems in Group Theory, Dagstuhl, Germany, 3/2019.
- AMS Special Session on Algorithmic Group Theory and Applications, Boston, MA, 4/2018.
- Hofstra U. Mathematics Seminar, Hempstead, NY, 4/2018.
- Rocky Mountain Algebraic Combinatorics Seminar, Fort Collins, CO, 4/2018.
- AMS Special Session on Combinatorial/Geometric/Probabilistic Group Theory, Denton, TX, 9/2017.
- Groups and Computation: Interaction between Geometric Group Theory, Computability and Computer Science, Hoboken, NJ, 6/2017. (Plenary)
- Inst. for Advanced Study Colloquium, Princeton, NJ, 5/2017.
- IAS Women and Mathematics Program, Princeton, NJ, 5/2017. (Computer workshop)
- U. Zaragoza Algebra Seminar, Zaragoza, Spain, 3/2017.
- AMS Special Session on The Topology of 3- and 4-Manifolds, Minneapolis, MN, 10/2016.
- Computation in Geometric and Combinatorial Group Theory, Edinburgh, UK, 7/2016. (Plenary)
- Geometric and Asymptotic Group Theory with Applications, Hoboken, NJ, 6/2016. (Plenary)
- Geometry and Computation on Groups and Complexes, Newcastle, UK, 6/2016. (Plenary)
- Geometric & Probabilistic Methods in Group Theory, College Station, TX, 11/2015.
- Redbud Topology Conference, Fayetteville, AR, 10/2015.
- U. Arkansas Mathematics Colloquium, Fayetteville, AR, 10/2015.
- AMS-EMS-SPM Special Session on Algebra and Computer Science, Porto, Portugal, 6/2015.
- U. Zaragoza Algebra Seminar, Zaragoza, Spain, 6/2015
- AMS Special Session on Groups, Algorithms, and Cryptography, San Antonio, TX, 1/2015.
- AWM Panel, Breaking the Glass Ceiling Permanently, San Antonio, TX, 1/2015.
- Geometric & Asymptotic Group Thy. with Applications, Newcastle, Australia, 7/2014. (Plenary)
- Spring Topology & Dynamics, Special Session on Geometric Group Theory, Richmond, VA, 3/2014.
- Univ. Warwick Geometry & Topology Seminar, Coventry, UK, 5/2013.
- Univ. of St. Andrews Mathematics Colloquium, St. Andrews, UK, 4/2013.
- Univ. Newcastle Algebra-Geometry Seminar, Newcastle-upon-Tyne, UK, 4/2013.
- Univ. Neuchatel Groups and Analysis Seminar, Neuchatel, Switzerland, 3/2013.
- Univ. Warwick Algebra Seminar, Coventry, UK, 3/2013.
- MAA Panel, Active Learning in Mathematics, Joint Mathematics Meetings, San Diego, CA, 1/2013.
- Univ. California San Diego Algebra Seminar, San Diego, CA, 12/2012.
- Stevens Inst. Tech. Geometric and Asymptotic Group Theory Seminar, Hoboken, NJ, 10/2012.
- Tufts Univ. Geometric Group Theory Seminar, Medford, MA, 10/2012.
- New York Group Theory Seminar, New York, NY, 10/2012.
- Group Theory on the Hudson Conf., Hoboken, NJ and New York, NY, 9/2012.
- Spring Topology and Dynamics Conf., Special Session on Geometric Topology and Geometric Group Theory, Mexico City, Mexico, 3/2012.
- International Group Theory Online Seminar, (hosted by Stevens Inst. Tech.), 3/2012.
- AMS Special Session, Groups, Algorithms, Complexity, & Theory of Security, Boston, MA, 1/2012.
- Geometric & Asymptotic Group Theory with Applications, Manresa, Spain, 7/2011. (Plenary)
- Spring Topology and Dynamics, Special Session on Geometric Group Theory, Tyler, TX, 3/2011.
- AMS Special Session, Geometric group theory, New Orleans, LA, 1/2011.
- AMS Special Session, Groups, Computations, and Applications, Newark, NJ, 5/2010.
- AMS Special Session, Geometric Group Theory, Urbana-Champaign, IL, 3/2009.
- Geometric & Asymptotic Group Theory with Applications Conf., Hoboken, NJ, 3/2009. (Plenary)
- CMS Special Session, Geometric Group Theory, Ottawa, ON, Canada, 12/2008.
- Univ. of Illinois Group Theory Seminar, Urbana-Champaign, IL, 10/2008.
- Texas A&M Univ. Groups and Dynamics Seminar, College Station, TX, 4/2008.
- Univ. of Warwick Joint Algebra/Geometry Seminar, Coventry, UK, 5/2006.
- Univ. of Newcastle Geometric Group Theory Seminar, Newcastle-upon-Tyne, UK, 5/2006.
- Univ. of Leicester Mathematics Colloquium, 5/2006.

- Universitat Autònoma de Barcelona Centre de Recerca Matemàtica Geometric Group Theory Seminar, Barcelona, Spain, 4/2006.
- Univ. of Arkansas Spring Lecture Series, Fayetteville, AR, 4/2006.
- Reed College Mathematics Colloquium, Portland, OR, 2/2006.
- AMS Special Session, Geometric Group Theory, Annandale-on-Hudson, NY, 10/2005.
- New York Group Theory Seminar, New York, NY, 9/2005.
- AMS Special Session, Topological Aspects of Group Theory, Nashville TN, 10/2004.
- AMS Special Session, Geometric Group Theory, Binghamton, NY, 10/2003.
- AMS/RSME Special Session, Geometric Methods in Group Theory, Seville, Spain, 6/2003.
- New York Group Theory Seminar, New York, NY, 3/2003.
- AMS Special Session, Geometric Group Theory, Boston, MA, 10/2002.
- Conf. on Geometric Topology, Xi'an, China, 8/2002.
- AMS Special Session, Low Dimensional Homotopy & Comb. Group Theory, Portland, OR, 2/2002.
- Texas A&M Univ. Algebra and Combinatorics Seminar, College Station, TX, 2/2002.
- Albany Group Theory Conf., Albany, NY, 10/2001. (Plenary talk)
- AMS Special Session, Computational Group Theory, Hoboken, NJ, 4/2001.
- California Polytechnic State Univ. Mathematics Colloquium, San Luis Obispo, CA, 3/2001.
- AMS Special Session, Geometric Group Theory, New Orleans, LA, 1/2001.
- Binghamton Univ. Algebra Seminar, Binghamton, NY, 10/2000.
- International Conf. on Geometric and Combinatorial Group Theory, Haifa, Israel, 6/2000.
- Univ. of Newcastle Algebra Seminar, Newcastle, England, 6/2000.
- Texas A&M Univ. Algebra and Combinatorics Seminar, College Station, TX, 11/1999.
- Computation in Geometry and Group Theory, Warwick, England, 7/1999. (Plenary talk)
- Workshop on Gröbner Bases and Rewriting Techniques, Trento, Italy, 6/1999.
- Geometric Groups on the Gulf Coast, Mobile, AL, 5/1999.
- CIMAT Workshop on Gröbner Bases, Guanajuato, Mexico, 2/1999. (Plenary talk)
- AMS Special Session, Combinatorial Topology, San Antonio, TX, 1/1999.
- Albany Group Theory Conf., Albany, NY, 10/1998.
- Computational and Geometric Aspects of Modern Algebra, Edinburgh, Scotland, 7/1998.
- AMS/IMS/SIAM Joint Summer Research Conf. in the Mathematical Sciences, Geometric Group Theory and Computer Science, South Hadley, MA, 7/1998. (Plenary talk)
- Non-positive Curvature in Group Theory, Topology, and Geometry, Nashville, TN, 5/1998.
- International Conf. on Algorithmic Problems in Groups and Semigroups, Lincoln, NE, 5/1998.
- Univ. of Texas - El Paso Mathematics Colloquium, El Paso, TX, 4/1998.
- Univ. of Nebraska-Lincoln Mathematics Colloquium, Lincoln, NE, 2/1998.
- Ohio State Univ. Topology Seminar, Columbus, OH, 2/1998.
- Albany Group Theory Conf., Albany, NY, 10/1997.
- Groups St. Andrews, Bath, England, 8/1997.
- Claremont-McKenna College Mathematics Colloquium, Claremont, CA, 3/1997.
- Rewriting Techniques and Noncommutative Gröbner Bases, Las Cruces, NM, 1/1997.
- Cornell Univ. Group Theory Seminar, Ithaca, NY, 11/1996.
- ANU Conf. on Geometric Group Theory, Canberra, Australia, 7/1996.
- AMS Special Session, Geometric Group Theory, Baton Rouge, LA, 4/1996.
- AMS Special Session, Geometric Group Theory, Greensboro, NC, 11/1995.
- Algorithms and Software for Groups, Automata and Semigroups, Minneapolis, MN, 8/1995.
- Univ. of Stockholm Group Theory Seminar, Stockholm, Sweden, 5/1995.
- New Mexico Geometry and Topology Conf., Albuquerque, NM, 4/1995.
- SUNYA Topology and Group Theory Conf., Albany, NY, 10/1994.
- AMS Special Session, Geometric Group Theory and Metric Geometry, Lexington, KY, 3/1994.
- ANU Workshop on Group Theory, Canberra, Australia, 11/1993.
- Victorian Algebra Conf., Melbourne, Australia, 9/1993.
- Geometric and Combinatorial Methods in Group Theory, Edinburgh, Scotland, 3/1993.

- Univ. of California Group Theory Seminar, Berkeley, CA, 2/1993.
- New Mexico State Univ. Mathematics Colloquium, Las Cruces, NM, 12/1992.
- Univ. of California Group Theory Seminar, Berkeley, CA, 9/1992.
- New York Group Theory Seminar, New York, NY, 2/1992.

Other Short Research Visits: (not listed in seminars above, up to 3 weeks)
U. Newcastle, UK 6/2016, 6/2015, 7/2004, 6-7/2003; U. Leicester 6/2015;
U. Newcastle (CARMA), Australia 7-8/2014; Cornell U. 7/2013;
U. Fribourg, Switzerland 5-6/2012, 7/2011; U. Neuchatel, Switzerland 6-7/2011;
Trinity C. 5/2010; Bowdoin C. 7/2008; American Institute of Mathematics 6/2008, 6/2006, 1/2004;
U. Politecnica Catalunya, Spain 4/2006; CCNY 11/2007, 10/2003; Columbia U. 10/2003;
Lafayette C. 3/2003, 8/2001, 7/1995, 6/1993; U. Kansas 3-4/2001; Virginia Tech 4/2000;
U. Stockholm, Sweden 6/2000, 8/1997; U. Melbourne, Australia 7/1996;
Australia National U., Australia 11/1993.

Ph.D. Thesis (Co-)Advisees:

Degree completed:

- Katie Tucker, 2019: *The $t_3, \overline{t_4}$ conjecture for links*
- Maranda Franke, 2017: Languages, geodesics, and HNN extensions
- Nick Owad, 2016: Bridge spectra of cables of 2-brigde knots
- Anisah Nu'Man, 2015: Tame filling functions and closure properties
- Scott Dyer, 2015: The strict higher Grothendieck integral
- Melanie DeVries, 2013: Unknotting Moves of Virtual Knots
- Ashley Johnson, 2013: Closure and homological properties of (auto)stackable groups
- David McCune, 2011: Groups and semigroups generated by automata
- Justin A. James, 2006: Some decision problems in group theory
- Steven P. Lindblad, 2003: Inverse monoids presented by a single sparse relator

Current Ph.D. co-advisees:

- Ash DeClerk
- Andrew Hayes
- Aurora Marks

Undergraduate Thesis (Co-)Advisees:

Degree completed:

- Aaron Calderon, 2016
- Chuck Larrieu, 2012
- Jordan Wiebe, 2012
- Mary Vacha, 2005
- Lucas Sabalka, 2002

Postdoctoral Scholar Mentoring:

- Tim Susse 2014-17
- Collin Bleak 2007-10
- Zoran Šunić 2001-03

Teaching and Mentoring Awards:

- UNL Mathematics "Roger Wiegand" Award, 2007 *Award for contributions to graduate students*
- UNL College of Arts and Sciences Award for Distinguished Teaching, 2004

Course Development - UNL:

- Math 350 Modern Geometry: Complete course redesign to align material with the National/Nebraska teaching standards for the associated high school geometry topics. The emphasis was changed to showing the students why - and when - the standard results of high school geometry are true, and incorporated significant component working with software for hands-on exploration of Euclidean and hyperbolic geometry.
- Math 471 Undergraduate Topology: New course designed to be accessible to students with a variety of abilities and backgrounds. The material covered includes some basics of point-set topology, but also combinatorial and geometric aspects of topology that allow the students to use pictures and other "concrete" methods to study spaces.

- Math 911 Topics in Group Theory: Several different courses have been developed under this title, with half or full semester modules in areas including: Growth of groups, nilpotent and solvable groups, geometric group theory, and homology of groups.

Courses Taught:

Undergraduate: Calculus I-II, differential equations, linear algebra, contemporary mathematics, discrete mathematics, geometry, abstract algebra, group theory, topology

Graduate: Algebra I-II (groups, rings, fields), topology I-II (point set, algebraic topology), homology of groups, solvable groups, geometric group theory, computational and combinatorial group theory, mathematics education

Service to Improve the Representation and Status of Women in Mathematics:

- IAS Women and Mathematics Program, 5/2017. *Organized and led first annual computer workshop.*
- Panelist, AWM Panel on Breaking the glass ceiling permanently, JMM, San Antonio, TX 1/2015
  My role: Dissemination of best practices for recruitment, evaluation, and retention.
- AMS Committee on Women in Mathematics, 6/2012-1/2014
  Participated in the inception and first two years of this committee; also liaison to the JCW
- AMS-ASA-AWM-IMS-MAA-NCTM-SIAM Joint Committee on Women in the Mathematical Sciences (JCW), 8/2010-1/2014 *AMS Representative*
- NSF-ADVANCE Institutional Transformation committee, UNL, 2009-2012
  Implemented project to improve recruitment and retention of STEM underrepresented faculty.
- Nebraska Conferences for Undergraduate Women in Mathematics
  Co-organizer of first 2 NCUWM's; frequent service role in subsequent years.

Research and Outreach Conference Co-organization:

- Special Session on Algorithmic and Geometric Properties of Groups and Semigroups, AMS Fall Central Section Meeting, UNL, 10/2011 (with J. Meakin)
- Approaches to Group Theory: Using Algebraic, Analytic, and Geometric Tools in the Study of Groups, Ithaca, NY, 10/2010 (with J. Meier, K. Vogtmann, and D. Webb)
- International Conference on Geometric and Combinatorial Methods in Group Theory and Semigroup Theory, UNL, 5/2009 (lead organizer; with C. Bleak, T. Jajcayova, S. Margolis, and J. Meakin)
- Special Session on Geometric Methods in Group Theory and Semigroup Theory, AMS Fall Central Section Meeting, UNL, 10/2005 10/21-23, 2005 (with J. Meakin and Z. Šunić)
- International Conference on Geometric and Combinatorial Methods in Group Theory and Semigroup Theory, UNL, 5/2000 (with J. Meakin and M. Sapir)
- Workshop on Gröbner Bases and Rewriting Techniques, Trento, Italy, 6-7/1999 (with B. Keller, K. Madlener, and B. Reinert)
- Rewriting Techniques and Noncommutative Gröbner Bases, Las Cruces, NM 1/1997 (with R. Laubenbacher)
- Regional Workshops in Mathematics, UNL (4)
  To broaden research participation of students and faculty at regional undergraduate institutions

Editorial Boards, Reviewing and Refereeing:

- **Editorial boards:**
  Journal of Algebra, 8/2019 - present
  Communications in Algebra, 2/2010 - present
- **Reviewer:** Mathematical Reviews (32 reviews written)
- **Referee:** Frequent referee of journal articles (39 articles in 19 journals) and NSF/EPSRC/EPSCoR proposals (including NSF grant review panels and NSF site visit team).

Service to the American Mathematical Society:

- AMS Council, Member at Large, 2/2003-1/2006 *Elected by the AMS membership*
  The Council formulates the scientific policies of the AMS and advises the Board of Trustees
- AMS Science Policy Committee, 2/2003-1/2006
  Members interact with Federal agencies and policymakers, advise the AMS on broad science policy
- AMS CoWiM, 6/2012-1/2014 and AMS representative to JCW, 8/2010-1/2014 *(more detail above)*
- AMS Short Course Committee, 2/2002-1/2005

External Mathematics Test Development: *(Educational Testing Service)*

- Graduate Record Examination
  - · GRE Mathematics Subject Test Committee of Examiners, 7/2002-6/2010
  - · Committee Chair: 7/2006-6/2010 · External reviewer and writer: 4/2011 - present
- Major Field Test · Mathematics Development Committee Chair, 2/2011-3/2012

Both: Test development and writing. MFT: Developed nationwide survey on undergraduate courses.

Selected Other Service to UNL:

- Director of mathematics graduate program, 8/2011-present
- Developed a local industry internship program with Nebraska Global, and created and led innovative nonacademic professional development activities, for mathematics graduate students
- Committee service including Arts & Sciences promotion & tenure committee, university professorships committee, mathematics search committees, AMS graduate student chapter advisor, academic program reviews