

# DAN ISAKSEN

## Professional Record February 2025

EMAIL: `isaksen.dan@gmail.com`

PRESENT POSITION: Professor, Department of Mathematics, Wayne State University, Detroit, Michigan, USA

### EDUCATION

UNDERGRADUATE: University of California, Berkeley, B.A. in Mathematics, 1994.

GRADUATE: University of Chicago, S.M. in Mathematics, 1995; Ph.D. in Mathematics, 1999.

### FACULTY APPOINTMENTS

- Wayne State University, 2003–current
- University of Notre Dame, McKenna Visiting Assistant Professor, 2000–2003
- Universität Bielefeld, Wissenschaftlicher Mitarbeiter, 1999–2000

Signed \_\_\_\_\_ Date \_\_\_\_\_

## RESEARCH

Computational homotopy theory, especially with respect to the classical stable homotopy groups,  $\mathbb{C}$ -motivic stable homotopy groups,  $\mathbb{R}$ -motivic stable homotopy groups,  $C_2$ -equivariant stable homotopy groups, and the classical unstable homotopy groups.

### RESEARCH HONORS AND AWARDS

- Frontiers of Science Award in Mathematics, International Congress of Basic Science, 2024
- Board of Governors Faculty Recognition Award, Wayne State University, 2024
- **Fellow of the American Mathematical Society, 2024**
- Distinguished Faculty Fellowship, Wayne State University, 2023–2025
- Career Development Chair, Wayne State University, 2008–2009
- National Science Foundational Postdoctoral Research Fellowship, 2000–2003
- National Science Foundation Graduate Research Fellowship, 1994–1998

### RESEARCH GRANTS

- Simons Fellow in Mathematics, Simons Foundation, 2025, \$102,346.
- National Science Foundation Conference Grant, Midwest Topology Seminar, 2024–2025, \$49,500 (co-PI, with M. Behrens, V. Stojanoska, C. Rovi, and M. Rivera)
- **National Science Foundation Research Training Groups in the Mathematical Sciences (RTG) Grant, 2022–2025, \$1,245,779.**
- **National Science Foundation Research Grant, Stable homotopy groups: Theory and Computation, 2022–2025, \$240,964.**
- National Science Foundation Research Grant, Motivic and Equivariant Stable Homotopy Groups, 2019–2022, \$175,209.
- National Science Foundation Conference Grant, Midwest Topology Seminar, 2017–2022, \$30,000 (co-PI, with P. Goerss, V. Stojanoska, M. Behrens, and R. Bruner).
- National Science Foundation Research Grant, Stable stems – the computation of stable homotopy groups of spheres, 2016–2020, \$166,831.
- National Science Foundation Research Grant, Motivic stable homotopy groups, 2012–2016, \$111,470.
- National Science Foundation Conference Grant, Midwest Topology Seminar, 2014–2017, \$30,000 (co-PI with P. Goerss and R. Bruner).
- National Security Agency Research Grant, Stable homotopical methods in algebraic geometry, \$40,165 (awarded 2012, PI declined because granting agency does not support NSF-funded PIs).
- Simons Foundation Collaboration Grant, Motivic stable homotopy groups, \$35,000 (awarded 2012, PI declined because granting agency does not support NSF-funded PIs).
- Educational Development Grant, Wayne State University, 2012, computer equipment for online instructional video production, \$1,898.

- Wayne State University Omnibus Fund grant, computer projector for Nelson Room, 2010, \$5,700.
- National Science Foundation Conference Grant, Midwest Topology Seminar, 2009–2012, \$24,750 (co-PI, with R. Bruner, P. Goerss, and M. Mandell).
- National Science Foundation Research Grant, Computational motivic stable homotopy theory, 2008–2012, \$99,150.
- Career Development Chair, Wayne State University, 2008–2009, \$16,500.
- Graduate Research Assistantship, Wayne State University, 2008–2009, \$18,850 plus tuition assistance and benefits.
- National Security Agency Conference Grant, Communicating Mathematics, 2006–2007, \$23,500 (with S. Adams).
- National Science Foundation Research Grant, Applications of pro-homotopy theory to algebra, 2005–2008, \$95,214.
- National Security Agency Young Investigators Grant, Homotopical methods for quadratic forms, \$30,000 (awarded 2005, PI declined because granting agency does not support NSF-funded PIs).
- University Research Grant, Wayne State University, 2004–2005, \$7,000.

#### PHD THESIS DIRECTION

- Joey Beauvais-Feisthauer, Ph.D. thesis, in progress, Wayne State University, expected 2025.
- Francis Baer, Ph.D. thesis, in progress, Wayne State University, expected 2026.
- Konstantin Emming, Ph.D. thesis, in progress, Wayne State University, expected 2027.
- Sebastian Gomez Rendon, Ph.D. thesis, in progress, Wayne State University, expected 2028.
- Nkechi Nnadi, Ph.D. thesis, *Distance in topological data analysis*, Wayne State University, 2024.
- Hana Kong, Ph.D. thesis, *The  $C_2$ -effective spectral sequence for  $C_2$ -equivariant connective real  $K$ -theory*, University of Chicago, 2021.
- Hieu Thai, Ph.D. thesis, *The wedge family of the cohomology of the  $\mathbb{C}$ -motivic Steenrod algebra*, 2020.
- Achim Krause, Ph.D. thesis, *Periodicity in motivic homotopy theory and over  $BP_*BP$* , 2018, Universität Bonn, Germany.
- Zhouli Xu, Ph.D. thesis, *In and around stable homotopy groups of spheres*, 2017, University of Chicago, USA.
- Bogdan Gheorghe, Ph.D. thesis, *The motivic cofiber of  $\tau$  and exotic periodicities*, 2017.
- Matthew Zabka, Ph.D. thesis, *Cohomology operations on random spaces*, 2016.
- Armira Shkembi, Ph.D. thesis, *Motivic Ext groups over  $A(1)$* , 2009.

## TEACHING

### TEACHING AWARDS

- President's Award for Excellence in Teaching, Wayne State University, 2016
- College of Liberal Arts and Sciences Teaching Award, Wayne State University, 2008
- Graves Memorial Teaching Award, University of Chicago, 1999

### UNDERGRADUATE COURSES AT WAYNE STATE UNIVERSITY

- MAT 5420, Algebra I, Fall 2024 (one additional time)
- MAT 2020, Calculus II, Winter 2024 (ten additional times)
- MAT 5410, Applied Linear Algebra, Fall 2023 (two additional times)
- MAT 5540, Topological Data Analysis, Winter 2023 (one additional time)
- MAT 5400, Elementary Theory of Numbers, Winter 2023
- MAT 2250, Elementary Linear Algebra, Fall 2022 (one additional time)
- MAT 2010, Calculus I, Winter 2021 (thirteen additional times)
- MAT 5430, Algebra 2, Winter 2016 (two additional times)
- MAT 1000, Mathematics in Today's World, Fall 2015 (eight additional times)
- MAT 2030, Calculus III, Fall 2005 (one additional time)
- MAT 5520, Introduction to Topology, Winter 2005

### GRADUATE COURSES AT WAYNE STATE UNIVERSITY

- MAT 6500, Topology I, Fall 2023 (six additional times)
- MAT 8000, Reading Seminar in Mathematics, Fall 2021 (one additional time)
- MAT 6420, Advanced Linear Algebra, Winter 2017
- MAT 7470, Topics in Algebra, Winter 2010 (one additional time)
- MAT 7520, Algebraic Topology II, Winter 2010
- MAT 7500, Topology II, Winter 2008 (one additional time)

## SERVICE

### EDITORIAL BOARD MEMBERSHIPS

- *Algebraic and Geometric Topology*, 2010–current.
- *Homology, Homotopy and Applications*, 2019–current.
- *Proceedings of the London Mathematical Society*, 2023–current.

### POSITIONS HELD IN PROFESSIONAL ASSOCIATIONS

- Member of the Council of the American Mathematical Society, 2025–2028.
- Chair of the Central Section Program Committee, American Mathematical Society, 2025–2026
- Member of the Central Section Program Committee, American Mathematical Society, 2024–2026
- 4-Year Vice Chair, Chair, and Past Chair, Michigan Section, Mathematical Association of America, 2011–2014

### CONFERENCE ORGANIZER

- Midwest Topology Seminar, Fall 2021
- Midwest Topology Seminar, Winter/Spring 2021
- Midwest Topology Seminar, Fall 2020
- Midwest Topology Seminar, Spring 2020
- Equivariant and Motivic Homotopy Theory Workshop, Isaac Newton Institute, Cambridge, UK, 2018
- American Mathematical Society Central Sectional Meeting, Univ. Michigan, 2018
- Midwest Topology Seminar, Wayne State University, 2017
- Midwest Topology Seminar, Wayne State University, 2015
- West Coast Algebraic Topology Summer School, University of Oregon, 2015
- Midwest Topology Seminar, Wayne State University, 2013
- Annual Meeting of the Michigan Section of the Mathematical Association of America, Saginaw Valley State University, 2012
- Annual Meeting of the Michigan Section of the Mathematical Association of America, Western Michigan University, 2011
- Midwest Topology Seminar, Wayne State University, 2010
- Michigan Undergraduate Mathematics Conference, Wayne State University, 2009
- Communicating Mathematics, University of Minnesota Duluth, 2007
- Midwest Topology Seminar, Wayne State University, 2007

### OTHER PROFESSIONALLY RELATED SERVICE

- Founder and Organizer, Electronic Computational Homotopy Theory research community, 2017–current
- Reviewer for *Mathematical Reviews*, 58 article reviews, 2003–current
- Reviewer for multiple grant proposals submitted to a variety of national and international funding agencies
- Referee for over 40 different internationally-recognized peer-reviewed journals

## PUBLICATIONS

### PREPRINTS/IN PREPARATION

- D. Isaksen and N. Nnadi, *Simplicial Hausdorff distance for topological data analysis*, arXiv:2502.03744, 2025.
- J. Beauvais-Feisthauer and D. Isaksen, *SeqSee: A schema-based approach to spectral sequence visualization*, arXiv:2501.18429, 2025.
- B. J. Guillou and D. C. Isaksen,  *$C_2$ -equivariant stable stems*, arXiv:2404.14627, 2024.
- R. R. Bruner and D. C. Isaksen, *Jeff Smith's theory of ideals*, arXiv:2208.07941, 2022.
- D. C. Isaksen, G. Wang, and Z. Xu, *Classical and  $\mathbb{C}$ -motivic Adams charts*, preprint, 2020.
- D. C. Isaksen, G. Wang, and Z. Xu, *Adams-Novikov charts*, preprint, 2020.
- D. C. Isaksen, G. Wang, and Z. Xu, *Classical algebraic Novikov charts and  $\mathbb{C}$ -motivic Adams charts for the cofiber of  $\tau$* , preprint, 2020.
- D. C. Isaksen, *The homotopy of  $\mathbb{C}$ -motivic modular forms*, arXiv:1811.07937, preprint, 2018.
- D. C. Isaksen, H. J. Kong, G. Li, Y. Ruan, and H. Zhu, *Exotic periodic phenomena in the cohomology of the moduli stack of 1-dimensional formal group laws*, in preparation.

### REFERRED PUBLICATIONS

- [1] R. Burklund, D. C. Isaksen, and Z. Xu, *Classical stable homotopy groups of spheres via  $\mathbb{F}_2$ -synthetic methods*, Peking Math. J., to appear.
- [2] D. C. Isaksen, H. J. Kong, G. Li, Y. Ruan, and H. Zhu, *The  $\mathbb{C}$ -motivic Adams-Novikov spectral sequence for topological modular forms*, Adv. Math. **458** (2024).
- [3] E. Belmont, D. C. Isaksen, and H. J. Kong,  *$\mathbb{R}$ -motivic  $v_1$ -periodic homotopy*, Pacific J. Math. **330** (2024) 43–84.
- [4] D. Dugger, B. I. Dundas, D. C. Isaksen, and P. A. Østvær, *The multiplicative structures on motivic homotopy groups*, Algebr. Geom. Topol. to appear.
- [5] D. C. Isaksen, G. Wang, and Z. Xu, *Stable homotopy groups of spheres: From dimension 0 to 90*, Publ. Math. Inst. Hautes Études Sci. **137** (2023) 107–243.
- [6] D. C. Isaksen, G. Wang, and Z. Xu, *Stable homotopy groups of spheres and motivic homotopy theory*, Proceedings of the International Congress of Mathematicians **4** (2022) 2768–2790.
- [7] E. Belmont and D. C. Isaksen,  *$\mathbb{R}$ -motivic stable stems*, J. Topol. **15** (2022) 1755–1793.
- [8] B. Gheorghe, D. C. Isaksen, A. Krause, and N. Ricka,  *$\mathbb{C}$ -motivic modular forms*, J. Eur. Math. Soc. (JEMS) **24** (2022) 3597–3628.
- [9] E. Belmont, B. J. Guillou, and D. C. Isaksen,  *$C_2$ -equivariant and  $\mathbb{R}$ -motivic stable stems, II*, Proc. Amer. Math. Soc. **149** (2021) 53–61.
- [10] D. C. Isaksen, G. Wang, and Z. Xu, *Stable homotopy groups of spheres*, Proc. Nat. Acad. Sci. USA, October 6, 2020 (40) 24757–24763.

- [11] B. J. Guillou and D. C. Isaksen, *The Bredon-Landweber region in  $C_2$ -equivariant stable homotopy groups*, Doc. Math. **25** (2020) 1865–1880.
- [12] B. Guillou, M. Hill, D. C. Isaksen, D. Ravenel, *The cohomology of  $C_2$ -equivariant  $A(1)$  and the homotopy of  $ko_{C_2}$* , Tunis. J. Math. **2** (2020) 567–632.
- [13] D. C. Isaksen, *The Mahowald operator in the cohomology of the Steenrod algebra*, Tbilisi Math. J. Special Issue (2020) 183–190.
- [14] D. C. Isaksen, *Stable stems*, Mem. Amer. Math. Soc. **262** (2019).
- [15] B. Gheorghe, D. C. Isaksen, and N. Ricka, *The Picard group of motivic  $A_{\mathbb{C}}(1)$* , J. Homotopy Relat. Struct. **13** (2018) 847–865.
- [16] D. Dugger and D. C. Isaksen,  *$\mathbb{Z}/2$ -equivariant and  $\mathbb{R}$ -motivic stable stems*, Proc. Amer. Math. Soc. **145** (2017) 3617–3627.
- [17] B. Gheorghe and D. C. Isaksen, *The structure of motivic homotopy groups*, Bol. Soc. Mat. Mexicana **23** (2017) 389–397.
- [18] D. Dugger and D. C. Isaksen, *Low dimensional Milnor-Witt stems over  $\mathbb{R}$* , Ann. K-Theory **2** (2017) 175–210.
- [19] B. Guillou and D. C. Isaksen, *The eta-inverted  $\mathbb{R}$ -motivic sphere*, Algebr. Geom. Topol. **16** (2016) 3005–3027.
- [20] B. J. Guillou and D. C. Isaksen, *The motivic vanishing line of slope 1/2*, New York J. Math. **21** (2015) 533–545.
- [21] B. J. Guillou and D. C. Isaksen, *The  $\eta$ -local motivic sphere*, J. Pure Appl. Algebra **219** (2015) 4728–4756.
- [22] D. C. Isaksen and Z. Xu, *Motivic stable homotopy and the stable 51 and 52 stems*, Topology Appl. **190** (2015) 31–34.
- [23] D. C. Isaksen, *When is a fourfold Massey product defined?*, Proc. Amer. Math. Soc. **143** (2015) 2235–2239.
- [24] D. Dugger and D. C. Isaksen, *Motivic Hopf elements and relations*, New York J. Math. **19** (2013) 823–871.
- [25] D. C. Isaksen and A. Shkembi, *Motivic connective K-theories and the cohomology of  $A(1)$* , Journal of K-Theory **7** (2011) 619–661.
- [26] D. Dugger and D. C. Isaksen, *The motivic Adams spectral sequence*, Geometry and Topology **14** (2010) 967–1014.
- [27] M. Bolt and D. C. Isaksen, *Dogs don't need calculus*, College Mathematics Journal **41** (2010) 10–16.
- [28] D. C. Isaksen, *The cohomology of motivic  $A(2)$* , Homology, Homotopy and Applications **11** (2009) 251–274.
- [29] D. K. Biss, J. D. Christensen, D. Dugger, and D. C. Isaksen, *Eigentheory of Cayley-Dickson algebras*, Forum Mathematicum **21** (2009) 833–851.
- [30] D. C. Isaksen, *Sums-of-squares formulas*, in Communicating Mathematics (Duluth, 2007), Contemporary Mathematics **479**, American Mathematical Society, 2009, 157–168.
- [31] D. Dugger and D. C. Isaksen, *Etale homotopy and sums-of-squares formulas*, Mathematical Proceedings of the Cambridge Philosophical Society **145** (2008) 1–25.
- [32] D. K. Biss, D. Dugger, and D. C. Isaksen, *Large annihilators in Cayley-Dickson algebras*, Communications in Algebra **36** (2008) 632–664.

- [33] D. K. Biss, J. D. Christensen, D. Dugger, and D. C. Isaksen, *Large annihilators in Cayley-Dickson algebras II*, Boletín de la Sociedad Matemática Mexicana **13** (2007) 269–292.
- [34] D. Dugger and D. C. Isaksen, *The Hopf condition for bilinear forms over arbitrary fields*, Annals of Mathematics **165** (2007) 943–964.
- [35] H. Fausk and D. C. Isaksen, *Model structures on pro-categories*, Homology, Homotopy, and Applications **9** (2007) 367–398.
- [36] H. Fausk and D. C. Isaksen, *t-model structures*, Homology, Homotopy, and Applications **9** (2007) 399–438.
- [37] C. Jankowski, D. C. Isaksen, and S. Proctor, *On  $K_*$ -ultrahomogeneous graphs*, Ars Combinatoria **82** (2007) 83–96.
- [38] D. C. Isaksen, *Flasque model structures for simplicial presheaves*, K-Theory **36** (2005) 371–395.
- [39] D. Dugger and D. C. Isaksen, *Motivic cell structures*, Algebraic and Geometric Topology **5** (2005) 615–652.
- [40] D. Dugger and D. C. Isaksen, *Algebraic K-theory and sums-of-squares formulas*, Documenta Mathematica **10** (2005) 357–366.
- [41] D. C. Isaksen, *Completions of pro-spaces*, Mathematische Zeitschrift **250** (2005) 113–143.
- [42] J. D. Christensen and D. C. Isaksen, *Duality and pro-spectra*, Algebraic and Geometric Topology **4** (2004) 781–812.
- [43] D. C. Isaksen, *Etale realization on the  $\mathbb{A}^1$ -homotopy theory of schemes*, Advances in Mathematics **184** (2004) 37–63.
- [44] D. Dugger and D. C. Isaksen, *Topological hypercovers and  $\mathbb{A}^1$ -realizations*, Mathematische Zeitschrift **246** (2004) 667–689.
- [45] D. Dugger, S. Hollander, and D. C. Isaksen, *Hypercovers and simplicial presheaves*, Mathematical Proceedings of the Cambridge Philosophical Society **136** (2004) 9–51. [This article has been cited 120 times.]
- [46] J. D. Christensen, W. G. Dwyer, and D. C. Isaksen, *Obstruction theory in model categories*, Advances in Mathematics **181** (2004) 396–416.
- [47] D. Dugger and D. C. Isaksen, *Weak equivalences of simplicial presheaves*, in Homotopy Theory: Relations with Algebraic Geometry, Group Cohomology, and Algebraic K-Theory, 97–113, Contemporary Mathematics **346**, American Mathematical Society, 2004.
- [48] D. C. Isaksen, *Strict model structures for pro-categories*, in Algebraic Topology: Categorical Decomposition Techniques (Skye, 2001), Progress in Mathematics, Vol. 215, Birkhauser, 2003, 179–198.
- [49] D. C. Isaksen, *Calculating limits and colimits in pro-categories*, Fundamenta Mathematicae **175** (2002) 175–194.
- [50] D. C. Isaksen, *A model structure on the category of pro-simplicial sets*, Transactions of the American Mathematical Society **353** (2001) 2805–2841.
- [51] D. C. Isaksen, *A cohomological viewpoint on elementary school arithmetic*, American Mathematical Monthly **109** (2002) 796–805.
- [52] D. C. Isaksen, *Shortest shoelaces*, Mathematics Magazine **73**, no. 1, February 2000, 60–61.
- [53] D. C. Isaksen and A. P. Petrofsky, *Mobius knitting*, Bridges: Mathematical Connections in Art, Music, and Science, ed. R. Sarhangi, 1999, 67–76.

- [54] D. C. Isaksen and D. P. Moulton, *Randomly planar graphs*, Discrete Mathematics **175** (1997) 265–269.
- [55] D. C. Isaksen, *How to kick a field goal*, College Mathematics Journal **27** (1996), 267–271.
- [56] D. C. Isaksen, *Linear algebra on the gridiron*, College Mathematics Journal **26** (1995), 358–360.

#### CONFERENCE PROCEEDINGS EDITOR

- [57] *Communicating Mathematics*, Contemporary Mathematics **479**, American Mathematical Society, 2009 (with T. Y. Chow)

#### UNREFEREED PUBLICATIONS

- [58] D. C. Isaksen and P. A. Østvær, *Motivic stable homotopy groups*, in *Handbook of Homotopy Theory*, edited by H. Miller, Chapman and Hall/CRC (2019) 757–792.
- [59] S. G. Hartke, D. C. Isaksen, and P. M. Wood, *Graduate students as mentors in mathematics REUs*, in Proceedings of the Conference on Promoting Undergraduate Research in Mathematics (Rosemont, Illinois, 2006), ed. J. A. Gallian, American Mathematical Society, 2007, 285–287.
- [60] D. C. Isaksen, *Assessment methods for undergraduate research programs*, in Proceedings of the Conference on Promoting Undergraduate Research in Mathematics (Rosemont, Illinois, 2006), ed. J. A. Gallian, American Mathematical Society, 2007, 307–310.
- [61] D. K. Biss and D. C. Isaksen, *Student mentors in the Duluth mathematics REU*, Council on Undergraduate Research Quarterly **19**, no. 4, 163–167, June 2000.
- [62] D. C. Isaksen, *The Tanglewood of mathematics*, Math Horizons, September 1997.

## PRESENTATIONS

### RESEARCH PRESENTATIONS

- Workshop on Computations in Stable Homotopy Theory, American Institute of Mathematics, 2025
- Workshop on Homotopy Theory, Fields Institute, Toronto, Canada, 2025
- Geometry and Topology Seminar, Western University, 2025
- Mathematics Colloquium, Case Western Reserve University, 2025
- Topology Seminar, University of Kentucky, 2025
- Topology Seminar, EPFL, Lausanne, Switzerland, 2024
- Zurich Colloquium in Mathematics, Zurich, Switzerland, 2024
- Advances in Homotopy Theory IV, Beijing Institute of Mathematical Sciences and Applications, 2023 (online)
- Homotopy theory in honor of Paul Goerss, Northwestern University, 2023
- Mini-Course on The Computation of Stable Homotopy Groups, electronic Computational Homotopy Theory (eCHT), 2021 (online)
- Mini-Course on Motivic Homotopy Theory, Indian Institute of Technology, Roorkee, India, 2021 (online)
- Algebraic Topology Seminar, UCLA, 2021 (online)
- Department of Mathematics Colloquium, University of Oregon, 2020 (online)
- Topology Seminar, University of Michigan, 2020 (online)
- Motivic, Equivariant, and Non-Commutative Homotopy Theory, mini-course presenter, Institut des Hautes Études Scientifiques, France, 2020 (online)
- Workshop on Equivariant Stable Homotopy Theory and p-adic Hodge Theory, Banff International Research Station, Canada, 2020
- Lehigh University Geometry and Topology Conference, 2019
- Motivic Homotopy Groups of Spheres 3, Berlin, Germany, 2018
- Topology Seminar, Massachusetts Institute of Technology, 2018
- Algebraic Topology Seminar, Princeton University, 2018
- Department of Mathematics Colloquium, University of Virginia, 2017
- Topology Seminar, University of Virginia, 2017
- Homotopy Theory in the Ecliptic, Reed College, 2017
- Electronic Computational Homotopy Theory Seminar, 2017
- Workshop Topologie, Mathematisches Forschungsinstitut Oberwolfach, Germany, 2016
- Workshop on Equivariant Derived Algebraic Geometry, Banff International Research Station, Canada, 2016
- Topology Seminar, Northwestern University, 2016
- Topology Seminar, Johns Hopkins University, 2016
- West Coast Algebraic Topology Summer School, University of Oregon, 2015
- Midwest Topology Seminar, University of Illinois Chicago, 2015
- Introductory Workshop: Algebraic Topology, Mathematical Sciences Research Institute, Berkeley, 2014
- Topology Seminar, University of Chicago, 2014
- Topology Seminar, Massachusetts Institute of Technology, 2013
- Algebraic Geometry Seminar, Ohio State University, 2012

- Algebraic Topology: Applications and New Directions, Stanford University, 2012
- Topology Seminar, University of Chicago, 2011
- Topology Seminar, Northwestern University, 2011
- Topology Seminar, University of Western Ontario, 2010
- Conference on Homotopy Theory and Derived Algebraic Geometry, Fields Institute, Toronto, Ontario, Canada, 2010
- Midwest Topology Seminar, Northwestern University, 2010
- Department of Mathematics Colloquium, Western Michigan University, 2009
- Algebraic Cycles Seminar, Louisiana State University, 2008
- Topology Seminar, University of California, Berkeley, 2008
- Special Session on Homotopy Theory, American Mathematical Society Sectional Meeting, Western Michigan University, 2008
- Special Session on Applications of Ring Spectra, American Mathematical Society Sectional Meeting, Indiana University, 2008
- Topology Seminar, Stanford University, 2007
- Topology Seminar, University of Michigan, 2007
- Special Session on Homotopy Theory, Canadian Mathematical Society Winter Meeting, London, Ontario, Canada, 2007
- Topology Seminar, Massachusetts Institute of Technology, 2006
- Geometry-Algebra-Singularities-Combinatorics Seminar, Northeastern Univ., 2006
- Homotopy Theory Seminar, Universität Bielefeld, Germany, 2005
- Topology Seminar, University of Chicago, 2005
- Algebraic  $K$ -Theory Workshop, University at Buffalo, 2005
- Special Session on Algebraic  $K$ -Theory, American Mathematical Society Sectional Meeting, University of Nebraska, 2005
- Special Session on Algebraic Topology, American Mathematical Society Sectional Meeting, University of Oregon, 2005
- Special Session on Homotopy Theory, American Mathematical Society Sectional Meeting, Northwestern University, 2005
- Topology Seminar, University of Oslo, Norway, 2004
- Department of Mathematics Colloquium, University of Western Ontario, 2004
- Motivic Cohomology Seminar, University of Western Ontario, 2004
- Topology Seminar, Stanford University, 2004
- Department of Mathematics Colloquium, University of Oregon, 2003
- Department of Mathematics Colloquium, San Francisco State University, 2003
- Department of Mathematics Colloquium, Northeastern Illinois University, 2003
- Department of Mathematics Colloquium, Queens College (New York), 2003
- Special Session on Homotopy Theory, American Mathematical Society Sectional Meeting, Bloomington, IN, 2003
- Special Session on Homotopy Theory, American Mathematical Society Sectional Meeting, Boulder, CO, 2003
- Special Session on Homotopy Theory, Joint Mathematics Meetings, Baltimore, 2003
- International Conference on Algebraic Topology, Northwestern University, 2002
- Midwest Topology Seminar, Western Michigan University, 2002
- Topology Seminar, Northwestern University, 2002
- Topology Seminar, University of Illinois, 2002

- Topology Seminar, University of Western Ontario, 2002
- Topology Seminar, Purdue University, 2002
- Topology Seminar, University of Notre Dame, 2001
- Topology Seminar, Purdue University, 2001
- Department of Mathematics Colloquium, Western Michigan University, 2001
- Topology Seminar, Massachusetts Institute of Technology, 2001
- Topology Seminar, University of Chicago, 2000
- Topology Seminar, Northwestern University, 2000
- Topology Seminar, University of Western Ontario, 2000
- SFB Farewell Conference, Universität Bielefeld, Germany, 2000
- Transpennine Topology Triangle, University of Leicester, UK, 2000
- Topology Seminar, Max Planck Institut, Bonn, Germany, 1999
- Topology Seminar, Universität Bielefeld, Germany, 1999

#### EXPOSITORY PRESENTATIONS

- Undergraduate Seminar, Wayne State University, 2014
- Upper Peninsula Regional Meeting, Northern Michigan University, 2012
- Department of Mathematics and Computer Science Colloquium, University of Detroit Mercy, 2011
- Research Experiences for Undergraduates Colloquium, Grand Valley State University, 2010
- Department of Mathematics and Computer Science Colloquium, Albion College, Albion, MI, 2010
- Undergraduate Colloquium, Saginaw Valley State University, 2008
- Rose-Hulman Institute of Technology Conference on Undergraduate Mathematics, Terre Haute, IN, 2008
- Michigan Mathematics REU Conference, Grand Valley State University, 2007
- Annual Meeting, Michigan Section of the Mathematical Association of America, University of Michigan–Dearborn, 2007
- Promoting Undergraduate Research in Mathematics, Rosemont, IL, 2006
- Special Session on Mathematics in Fiber Arts, Joint Mathematics Meetings, Atlanta, 2005
- Special Session on Research in Graph Theory by Undergraduates, Mathfest, Albuquerque, 2005
- Undergraduate Colloquium, Calvin College, 2005
- Undergraduate Colloquium, Albion College, 2005
- Undergraduate Colloquium, Goshen College, 2002
- Department of Mathematics Open House, St. Mary's College, 2001
- Pi Mu Epsilon Seminar, Western Michigan University, 2001
- Undergraduate Colloquium, Valparaiso University, 2001
- Undergraduate Colloquium, Kalamazoo College, 2001
- Undergraduate Colloquium, Michigan Technological University, 1997.