

Curriculum Vitae
William M. McGovern
April 10, 2025

EDUCATION

B.A., Pomona College, 1982

Ph.D., M.I.T., 1987

PROFESSIONAL EXPERIENCE

2000–present: Professor, University of Washington

1994–2000: Associate Professor, University of Washington

1990–1994: Assistant Professor, University of Washington

1988–1990: J.W. Gibbs Instructor, Yale University

1987–1988: Postdoctoral Fellowship, Mathematical Sciences Research Institute, Berkeley

Chair, Teaching Quality Committee, 2001–2004

Member, Faculty Senate, 2003–2005

Referee for 11 journals, National Science Foundation, National Security Agency

HONORS AND AWARDS

1995–1999: NSF Grant DMS-9504778, \$75,000

1991–1994: NSF Postdoctoral Fellowship, University of Washington, DMS-9107890

Member, Sigma Xi (since 1987), Phi Beta Kappa (since 1981), New York Academy of Science (1995–1998)

Invited addresses (since 1998):

AMS Special Session in Geometry and Lie Groups, University of Arizona, November, 1998

Conference in Representation Theory, University of Utah, November, 1999

Lie Groups Seminar, University of Georgia, March, 2001

Representation Theory Seminar, University of Utah, April, 2002

AMS Special Session in Representation Theory, University of Utah, October, 2002

Representation Theory Seminar, University of Utah, October, 2003

Representation Theory Seminar, University of Utah, April, 2005

Combinatorics Seminar, University of Washington, October, 2005

Fifth Meeting of ATLAS Representation Theory Group, American Institute of Mathematics, Palo Alto, July, 2007

Combinatorics Seminar, University of Washington, October, 2007

AMS Special Session in Representation Theory and Topology, Indiana University, Bloomington, IN, April, 2008

AMS Special Session in Representation Theory, Western Michigan University, Kalamazoo, MI, October, 2008

UW Combinatorics and Geometry Seminar, January, 2009

Conference on Representation Theory of Real Reductive Groups, University of Utah, Salt Lake City, Utah, July, 2009

UW Combinatorics and Geometry Seminar, January, 2010

Eighth Meeting of ATLAS Representation Theory Group, University of Utah, Salt Lake City, July, 2010

AMS Special Session in Analytic and Geometric Methods in Representation Theory, Joint Mathematics Meeting, New Orleans, LA, January, 2011

Algebraic Groups Seminar, University of British Columbia, April, 2011

AMS Special Session in Trends in Representation Theory, Joint Mathematics Meeting, Boston, MA, January, 2012

UW Combinatorics and Geometry Seminar, January, 2012

CBMS Conference in Representation Theory, University of Massachusetts, Boston, July, 2012

Representation Theory Seminar, University of Utah, March, 2013

Current Problems Seminar, University of Washington, March, 2013

Representation Theory of Reductive Groups, in honor of David Vogan's 60th birthday, MIT, May, 2014

AMS Special Session in Analysis and Geometry on Lie Groups, University of Wisconsin, Eau Claire, September, 2014

Combinatorics Seminar, University of Washington, January, 2015

AMS Special Session on Combinatorics, Representation Theory, and Geometry of Homogeneous Spaces, Michigan State University, March, 2015

Combinatorics Seminar, University of Washington, October, 2016

AMS Special Session on Representation Theory and Related Geometry, Joint Meetings, AMS, Atlanta, Georgia, January, 2017

Algebraic Modes of Representations and Nilpotent Orbits, in honor of A. Joseph's 75th birthday, Weizmann Institute, Rehovot, Israel, July, 2017

UW Combinatorics and Geometry Seminar, February 7, 2018

UW Current Topics Seminar, November 1, 2018

Lie Theory and Physics XIII, Bulgarian Academy of Sciences, Varna, Bulgaria, June 19, 2019

UW Current Topics Seminar, October 17, 2019

AMS Special Session on Combinatorial Lie Theory, University of Florida, Gainesville, November 2, 2019

Combinatorics Coast Conference, Vancouver, BC, March 5, 2023.

Representation Theory Seminar, University of Massachusetts, Amherst, February 26, 2024.

Representation Theory Seminar, University of Massachusetts, Amherst, February 23, 2025.

COURSES POSTED ON CANVAS COMMONS:

Math 504A, Graduate Algebra, fall, 2024; Math 505A, Graduate Algebra, winter, 2025; Graduate Algebra, spring, 2025; Math 327C, Spring 2023.

SELECTED PUBLICATIONS

- [1] *Unipotent representations and Dixmier algebras*, Comp. Math. **69** (1989), 241–276.
- [2] *Rings of regular functions on nilpotent orbits and their covers*, Inv. Math. **97** (1989), 209–217.
- [3] *A branching law for $Spin(7, C) \rightarrow G_2$ and its applications to unipotent representations*, J. Alg. **130** (1990), 166–175.

- [4] (with David Collingwood) *Nilpotent orbits in semisimple Lie algebras*, Chapman and Hall, New York, 1993.
- [5] *Completely prime maximal ideals and quantization*, Mem. Amer. Math. Soc. **519**, 1994.
- [6] *Rings of regular functions on nilpotent orbits II: model algebras and orbits*, Comm. Alg. **22** (1994), 765–772.
- [7] *A remark on differential operator algebras and an equivalence of categories*, Comp. Math. **90** (1994), 305–313.
- [8] *Goldie rank of hook ideals in type A*, Comm. Alg. **23** (1995), 955–963.
- [9] *Left cells and standard domino tableaux in classical Weyl groups*, Comp. Math. **101** (1996), 77–98.
- [10] *Standard domino tableaux and asymptotic Hecke algebras*, Comp. Math. **101** (1996), 99–108.
- [11] *Cells of Harish-Chandra modules for real classical groups*, Amer. J. Math. **120** (1998), 211–228.
- [12] *Errata and a new result on signs*, Comp. Math. **117** (1999), 117–121.
- [13] *On the Spaltenstein-Steinberg map for classical Lie algebras*, Comm. Alg. **27** (1999), 2979–2995.
- [14] *A triangularity result for associated varieties of highest weight modules*, Comm. Alg. **28** (2000), 1835–1843.
- [15] *The adjoint representation and the adjoint action*, in vol. 131 of Encyclopedia of Mathematics, Algebraic Transformation Groups and Invariant Theory Subseries, vol. 2, R. V. Gamkrelidze, and V. L. Popov, subseries editors, Springer-Verlag, 2002.
- [16] *Closures of K -orbits in the flag variety for $U(p, q)$* , J. Alg. **322** (2009), 2709–2712.
- [17] (with Peter Trapa) *Pattern avoidance criteria for orbits of a symmetric subgroup in the flag variety*, J. Alg. **322** (2009), 2713–2730.
- [18] *Closures of orbits in the flag variety for $SU^*(2n)$* , Rep. Theory **15** (2011), 568–573.
- [19] *Rational singular loci of nilpotent varieties*, arXiv:1302.3873, 2013.
- [20] *Upper semicontinuity of KLV polynomials for certain blocks of Harish-Chandra modules*, in Representations of Reductive Groups: in honor of the 60th birthday of David A. Vogan, Jr., Progress in Math. **312** (2015), Birkhäuser, Boston, 437–443.
- [21] (with James Pfeiffer) *The representation theory of generalized hyperoctahedral groups*, arXiv:1401.7751, 2014.

- [22] (with Thom Pietraho) *On the classification of primitive ideals for complex classical Lie algebras, IV*, arXiv:2309.02363.
- [23] *Annihilators and associated varieties of Harish-Chandra modules for $Sp(p,q)$* , arxiv: 2101.01069.
- [24] *Closures of O_n -orbits in the flag variety for $GL(n)$* , in Proceedings, Representations and Nilpotent Orbits of Lie Algebraic Systems, in honor of Tony Joseph's 75th birthday, Progress in Math. **330**, Birkhäuser, Boston, 2019, 411–419.
- [25] *Closures of O_n -orbits in the flag variety for $GL(n)$, II*, arxiv: 2010.07114.
- [26] *Closures of K -orbits in the flag variety for $Sp(2n, R)$* , in Springer Proceedings in Mathematics and Statistics **335** (2020), Lie Theory and Physics XIII, Academy of Sciences, Varna, Bulgaria, 359–364.
- [27] *Annihilators and associated varieties of Harish-Chandra modules for $SO^*(2n)$* , arxiv: 2108.12381.
- [28] *A family of operators generating domino tableaux of a fixed shape and a decomposition of left cells into isotypic components*, arxiv:2002.09443.
- [29] *Orbital varieties in types B and C* , arxiv: 2109.01471.
- [30] *Orbital varieties in type D* , arxiv: 2019: 01472.
- [31] *Isotypic components of left cells in type D* , arxiv: 2109.10874.
- [32] *Representation theory and geometry of the flag variety*, Graduate Studies in Mathematics, Vol. 90, de Gruyter, 2023.
- [33] *Pattern avoidance and K -orbit closures*, chapter submitted to Handbook of combinatorial algebraic geometry: subvarieties of the flag variety, to appear, 2025, AMS.
- [34] *Fake degrees of classical Weyl groups*, arxiv: 2304.08579.