Andrew Putman

Curriculum Vitae
January, 2025

Department of Mathematics
University of Notre Dame
255 Hurley Hall
Notre Dame, IN 46556

http://www.nd.edu/~andyp/
andyp@nd.edu

Employment

2016–	**University of Notre Dame**, Notre Dame, IN Notre Dame Professor of Topology, 2020– Professor, 2016–2020
2010–2016	**Rice University**, Houston, TX Associate Professor, 2013–2016 Assistant Professor, 2010–2013
2007–2010	**Massachusetts Institute of Technology**, Cambridge, MA C. L. E. Moore Instructor
2007 (Fall)	**Mathematical Sciences Research Institute**, Berkeley, CA Postdoctoral fellow

Education

2007	**University of Chicago**, Chicago, IL Ph.D. in Mathematics (advisor: Benson Farb)
2002	**Rice University**, Houston, TX B.A. in Mathematics

Awards and Honors

2024–2027	AMS Council Member At Large
2024	Simons Fellow
2018	Plenary address at AMS Fall Central Sectional Meeting
2018	Fellow of the American Mathematical Society
2014, Nov	Séminaire Bourbaki talk by Djament, "La propriété noethérienne pour les foncteurs entre espaces vectoriels [d'aprés A. Putman, S. Sam et A. Snowden]"
2014	US Junior Oberwolfach Fellow
2013–2015	Sloan Research Fellowship
2007	NSF Postdoctoral Fellowship (awarded but declined)
2007	Finalist for the AIM 5-year fellowship

Grants

2023–2026	NSF grant DMS-2305183 (pi, $340,001) Topological aspects of infinite group theory
2018–2022	NSF grant DMS-1811322 (pi, $217,000) Topology and group theory
2017–2018	NSF conference grant DMS-1664688 (pi, $25,000) Braids in Algebra, Geometry, and Topology
2013–2019	NSF grants DMS-1255350 & DMS-1737434 (pi, $515,385) CAREER: The topology of infinite groups
2013	NSF conference grant DMS-1308209 (co-pi, $18,420) 3-Manifolds: Heegaard Splittings, the Curve Complex, and Hyperbolic Geometry
2010–2013	NSF grant DMS-1005318 (pi, $136,969) The algebra and topology of the mapping class group

Accepted Papers

1. J. Malestein, A. Putman
   Word length versus lower central series depth for surface groups and RAAGs
   to appear in Groups Geom. Dyn.

Published Papers

48. T. Brendle, N. Broaddus, A. Putman
The high-dimensional cohomology of the moduli space of curves with level structures II: punctures and boundary
Israel J. Math. 260 (2024), no. 1, 303–340.
47. M. Boggi, A. Putman, N. Salter
Generating the homology of covers of surfaces
Bull. Lond. Math. Soc. 56 (2024), no. 5, 1768–1787.
46. A. Putman
A new approach to twisted homological stability, with applications to congruence subgroups
J. Topol. 16 (2023), no. 4, 1315–1388.
45. Z. Himes, J. Miller, S. Nariman, A. Putman
The free factor complex and the dualizing module for the automorphism group of a free group
Int. Math. Res. Not. (2023), no. 22, 19020–19068.
44. A. Putman
Partial Torelli groups and homological stability
Algebr. Geom. Topol. 23 (2023), 3417–3496.
43. A. Putman, A. Snowden
The Steinberg representation is irreducible
Duke Math. J. 172 (2023), no. 4, 775–808.
42. T. Brendle, N. Broaddus, A. Putman
The mapping class group of connect sums of $S^2 \times S^1$
Trans. Amer. Math. Soc. 376 (2023), 2557–2572.
41. A. Putman, S. Sam
`VIC`-modules over noncommutative rings
Selecta Math. (N.S.) 28 (2022), no. 5, Paper No. 88.
40. A. Putman
The commutator subgroups of free groups and surface groups
Enseign. Math. 68 (2022), no. 3-4, 389–408.
39. T. Church, M. Ershov, A. Putman
On finite generation of the Johnson filtrations
J. Eur. Math. Soc. 24 (2022), no. 8, 2875–2914.
38. A. Putman, D. Studenmund
The dualizing module and top-dimensional cohomology group of $\mathrm{GL}_n(\mathcal{O})$
Math. Z. 300 (2022), no. 1, 1–31.
37. J. Miller, P. Patzt, A. Putman
On the top dimensional cohomology groups of congruence subgroups of $\mathrm{SL}_n(\mathbb{Z})$
Geom. Topol. 25 (2021), no. 2, 999–1058.
36. D. Margalit, A. Putman
Surface groups, infinite generating sets, and stable commutator length
Proc. Roy. Soc. Edinburgh Sect. A. 150 (2020), no. 5, 2379–2386.
35. A. Putman, S. Sam, A. Snowden
Stability in the homology of unipotent groups
Algebra & Number Theory 14 (2020), no. 1, 119–154.
34. N. Fullarton, A. Putman
The high-dimensional cohomology of the moduli space of curves with level structures
J. Eur. Math. Soc. 22 (2020), no. 4, 1261–1287.
33. M. Kassabov, A. Putman
Equivariant group presentations and the second homology group of the Torelli group
Math. Ann. 376 (2020), no. 1-2, 227–241.
32. J. Malestein, A. Putman
Simple closed curves, finite covers of surfaces, and power subgroups of $\mathrm{Out}(F_n)$
Duke Math. J. 168 (2019), no. 14, 2701–2726.

31. T. Church, B. Farb, A. Putman
Integrality in the Steinberg module and the top-dimensional cohomology of $\mathrm{SL}_n\mathcal{O}_K$
Amer. J. Math. 141 (2019), no. 5, 1375–1419.
30. A. Ash, A. Putman, S. Sam
Homological vanishing for the Steinberg representation
Compos. Math. 154 (2018), no. 6, 1111–1130.
29. A. Putman
The Johnson homomorphism and its kernel
J. Reine Angew. Math. 735 (2018), 109–141.
28. A. Putman, S. Sam
Representation stability and finite linear groups
Duke Math. J. 166 (2017), no. 13, 2521–2598.
27. M. Day, A. Putman
On the second homology group of the Torelli subgroup of $\mathrm{Aut}(F_n)$
Geom. Topol. 21 (2017), no. 5, 2851–2896.
26. T. Church, A. Putman
The codimension-one cohomology of $\mathrm{SL}_n\mathbb{Z}$
Geom. Topol. 21 (2017), no. 2, 999–1032.
25. M. Day, A. Putman
A Birman exact sequence for the Torelli subgroup of $\mathrm{Aut}(F_n)$
Internat. J. Algebra Comput. 26 (2016), no. 3, 585–617.
24. J. Malestein, A. Putman
Pseudo-Anosov dilatations and the Johnson filtration
Groups Geom. Dyn. 10 (2016), no. 2, 771–793.
23. A. Putman
Stability in the homology of congruence subgroups
Invent. Math. 202 (2015), no. 3, 987–1027.
22. T. Church, A. Putman
Generating the Johnson filtration
Geom. Topol. 19 (2015), 2217–2255.
21. T. Brendle, D. Margalit, A. Putman
Generators for the hyperelliptic Torelli group and the kernel of the Burau representation at $t = -1$
Invent. Math. 200 (2015), no. 1, 263–310.
20. T. Church, B. Farb, A. Putman
A stability conjecture for the unstable cohomology of $\mathrm{SL}_n\mathbb{Z}$, the mapping class group, and $\mathrm{Aut}(F_n)$
in *Algebraic Topology: Applications and New Directions*, 55–70, Contemp. Math., 620, Amer. Math. Soc., Providence, RI.
19. A. Putman, B. Wieland
Abelian quotients of subgroups of the mapping class group and higher Prym representations
J. London Math. Soc. (2) 88 (2013), no. 1, 79–96.
18. M. Day, A. Putman
The complex of partial bases for F_n and finite generation of the Torelli subgroup of $\mathrm{Aut}(F_n)$
Geom. Dedicata 164 (2013), 139–153.
17. M. Day, A. Putman
A Birman exact sequence for $\mathrm{Aut}(F_n)$
Adv. Math. 231 (2012), 243–275
16. A. Putman
Small generating sets for the Torelli group
Geom. Topol. 16 (2012), 111–125.

15. A. Putman
    The second rational homology group of the moduli space of curves with level structures
    Adv. Math. 229 (2012), 1205–1234.
14. T. Church, B. Farb, A. Putman
    The rational cohomology of the mapping class group vanishes in the virtual cohomological dimension
    Int. Math. Res. Not. (2012), no. 21, 5025–5030.
13. A. Putman
    The Torelli group and congruence subgroups of the mapping class group
    in *Moduli spaces of Riemann surfaces (Park City, UT, 2011)*, 167–194, IAS/Park City Math. Ser., 20 Amer. Math. Soc., Providence, RI.
12. A. Putman
    The Picard group of the moduli space of curves with level structures
    Duke Math. J. 161 (2012), no. 4, 623–674.
11. A. Putman
    Abelian covers of surfaces and the homology of the level L mapping class group
    J. Topol. Anal. 3 (2011), no. 3, 265–306.
10. A. Putman
    Obtaining presentations from group actions without making choices
    Algebr. Geom. Topol. 11 (2011), 1737–1766.
9. N. Broaddus, B. Farb, A. Putman
    Irreducible Sp-representations and subgroup distortion in the mapping class group
    Comment. Math. Helv. 86 (2011), 537–556.
8. J. Malestein, A. Putman
    On the self-intersections of curves deep in the lower central series of a surface group
    Geom. Dedicata. 149 (2010), no. 1, 73–84.
7. A. Putman
    A note on the abelianizations of finite-index subgroups of the mapping class group
    Proc. Amer. Math. Soc. 138 (2010), no. 2, 753–758.
6. A. Putman
    An infinite presentation of the Torelli group
    Geom. Funct. Anal. 19 (2009), no. 2, 591–643.
5. J. Birman, D. Johnson, A. Putman
    Symplectic Heegaard splittings and linked abelian groups
    in *Groups of Diffeomorphisms*, Adv. Stud. Pure Math., 52, Math. Soc. Japan, Tokyo, 135–220.
4. A. Putman
    A note on the connectivity of certain complexes associated to surfaces
    Enseign. Math. (2) 54 (2008), no. 3-4, 287–301.
3. N. Broaddus, B. Farb, A. Putman
    The Casson invariant and the word metric on the Torelli group
    C. R. Math. Acad. Sci. Paris 345 (2007), no. 8, 449–452.
2. A. Putman
    Cutting and pasting in the Torelli group
    Geom. Topol. 11 (2007), 829–865.
1. A. Putman
    The rationality of sol manifolds
    J. Algebra 304 (2006), no. 1, 190–215.

Submitted Papers

1. A. Putman
    The stable cohomology of the moduli space of curves with level structures
    preprint.

Lecture Series

07.2024 Institut Fourier summer school: low-dimensional topology, Université Grenoble Alpes
The topology of the mapping class group and its Torelli subgroup (3 lectures)

07.2023 Stability in Topology, Arithmetic, and Representation Theory, Purdue University
Representation stability and homological stability (3 lectures)

06.2023 Geometric Topology Workshop, Colorado College, Colorado Springs, CO
Principal Speaker, The Topology of Moduli Spaces (3 lectures)

06.2019 Summer School on Representation Stability, MSRI, Berkeley, CA
The prehistory of representation stability (5 lectures)

04.2019 Redbud Topology Conference, Norman, OK
The cohomology of the mapping class group (2 lectures)

06.2017 Summer school of the IMJ-PRG, Paris, France
On the virtual first Betti number of the mapping class group (4 lectures)

05.2017 Master Class: Cohomology of arithmetic groups, Copenhagen, Denmark
Buildings, duality, and the high-dimensional cohomology of arithmetic groups (4 lectures)

05.2013 Arithmetic groups in topology and number theory, Chicago, IL
Homological stability (2 lectures)

07.2011 Park City Math Institute
Mapping class groups and Torelli groups (4 lectures)

03.2008 Center for the topology and quantization of moduli spaces, Aarhus, Denmark
Master Class on the Torelli group (20 lectures)

Invited Talks

07.2024 Algebraic Aspects of Mapping Class Groups and Related Groups (AIMaRe Project) Conference, Institut Fourier, Université Grenoble Alpes
The Steinberg representation

06.2024 Isaac Newton Institute Conference on topology, representation theory and higher structures, Gaelic College, Sabhal Mor Ostain
The second homology group of the Torelli group

04.2024 Moduli Spaces and Modular Forms, Schiermonnikoog Island, Netherlands
The homology of the Torelli group

02.2024 Colloquium, IUPUI
The Steinberg representation

05.2023 Moduli and Algebraic Cycles, Institut Mittag-Leffler, Sweden
The stable cohomology of the moduli space of curves with level structures

05.2023 Opponent for Erik Lindell PhD Defense, Stockholm University
Mapping class groups and automorphism groups of free groups

03.2023 Purdue Geometry and Geometric Analysis Seminar
The automorphism group of a free group is not virtually a Kähler group

02.2023 University of Chicago Geometry/Topology Seminar
The stable cohomology of the moduli space of curves with level structures

02.2023 University of Minnesota Topology Seminar
The stable cohomology of the moduli space of curves with level structures

01.2023 Homotopie chromatique, K-théorie et foncteurs, CIRM Luminy
A new approach to twisted homological stability

11.2022 Rice University Colloquium
The stable cohomology of the moduli space of curves with level structures

09.2022 Joint Georgia Tech and University of Georgia Geometry/Topology Seminar
The stable cohomology of the level-ℓ subgroup of the mapping class group

08.2022 Notre Dame RTG Undergraduate Workshop
The geometry of tilings

07.2022 Oberwolfach workshop on "Topologie"
The stable cohomology of the moduli space of curves with level structures

06.2022 Workshop on Cohomology, Geometry and Explicit number theory, Institut Fourier
The Steinberg representation

04.2022 University of Oklahoma Colloquium
The Steinberg representation

03.2022 Groups and Geometry in the South East, University of Warwick
The Steinberg representation

02.2022 Andrews University Colloquium
The geometry of tilings

02.2022 University of Minnesota Colloquium
The mapping class group of a surface

10.2021 Indiana University Topology Seminar
The Steinberg representation

10.2021 Cohomology of Arithmetic Groups, Banff International Research Station
The Steinberg representation is irreducible

06.2021 WWU Münster Oberseminar Topologie
The topology at infinity of an arithmetic group

05.2021 University of Oregon Colloquium
The mapping class group of a surface

05.2021 University of Glasgow Geometry and Topology Seminar
The topology at infinity of an arithmetic group

05.2021 TAPIRS: Talks About Progress In Representation Stability
The Steinberg representation is irreducible

04.2021 Institut Mathématique d'Orsay Geometry, Topology, and Dynamics Seminar
The topology at infinity of an arithmetic group

04.2021 No boundaries seminar
Lie algebras and group theory

03.2021 Ohio State University Topology and Geometric Group Theory Seminar
The mapping class group of connect sums of $S^2 \times S^1$

12.2020 Brandeis-Harvard-MIT-Northeastern Joint Mathematics Colloquium
The topology at infinity of an arithmetic group

10.2020 Trends in Low-Dimensional Topology
The topology of the mapping class group of a surface

08.2020 KAIST and KIAS Joint Virtual Seminar on Geometry and Topology, Korea
The topology of the moduli space of curves

07.2020 Oberwolfach workshop on "Topologie"
Cancelled due to COVID-19

05.2020 University of Oregon Topology Seminar
Cancelled due to COVID-19

05.2020 University of Oregon Colloquium
Cancelled due to COVID-19

03.2020 University of Waterloo Colloquium
The stable cohomology of the moduli space of curves with level structures

10.2019 Purdue Topology Seminar
The stable cohomology of the moduli space of curves with level structures

10.2019 Clay Research Conference, Oxford University, UK
The stable cohomology of the moduli space of curves with level structures

06.2019 Workshop on Arithmetic Topology, PIMS, Vancouver, Canada
The stable cohomology of the moduli space of curves with level structures

05.2019 Caltech Geometry/Topology Seminar
The stable cohomology of the moduli space of curves with level structures

05.2019 Caltech Colloquium
The Johnson filtration is finitely generated

03.2019 Special Session on Mapping Class Groups, AMS Sectional Meeting
The stable cohomology of the moduli space of curves with level structures

03.2019 Plenary Address, 53rd Spring Topology and Dynamics Conference
The mapping class group of a surface

03.2019 MIT Topology Seminar
The Johnson filtration is finitely generated

02.2019 University of Michigan Topology Seminar
The stable cohomology of the moduli space of curves with level structures

02.2019 University of Michigan RTG Seminar on Geometry, Dynamics and Topology
The Johnson filtration is finitely generated

02.2019 Colloquium, IUPUI
The mapping class group of a surface

12.2018 Tech Topology Conference
The stable cohomology of the moduli space of curves with level structures

10.2018 Invited Address, AMS Sectional Meeting
The mapping class group of a surface

07.2018 ICM Satellite Conference in Geometric Group Theory, Campinas, Brazil
The Johnson filtration is finitely generated

05.2018 International Conference on Manifolds, Groups and Homotopy, Gaelic College Sabhal Mor Ostaig
The Johnson filtration is finitely generated

04.2018 Geometry of Teichmüller space and mapping class groups, Warwick, UK
The Johnson filtration is finitely generated

03.2018 Johns Hopkins University Topology Seminar
The Johnson filtration is finitely generated

02.2018 Purdue University Topology Seminar
The Johnson filtration is finitely generated

10.2017 No Boundaries: Groups in Algebra, Geometry, and Topology, Chicago, IL
Covers and simple closed curves

10.2017 University of Virginia Geometry Seminar
Covers and simple closed curves

09.2017 University of Chicago Geometry/Topology Seminar
The Johnson filtration is finitely generated

05.2017 Georgia International Topology Conference
The high dimensional cohomology of the moduli space of curves with level structures

02.2017 Colloquium, Purdue University
The high dimensional cohomology of the moduli space of curves with level structures

02.2017 Math For Everyone, University of Notre Dame
The geometry of tilings

01.2017 Northwestern Topology Seminar
The high dimensional cohomology of the moduli space of curves with level structures

01.2017 Special Session, Mapping Class Groups and Their Subgroups, AMS/MAA Joint Meeting
The high dimensional cohomology of the moduli space of curves with level structures

12.2016 Vanderbilt Topology and Group Theory Seminar
The high dimensional cohomology of the moduli space of curves with level structures

12.2016 Oberwolfach workshop on "Surface bundles"
The high dimensional cohomology of the moduli space of curves with level structures

11.2016 IU/PU/IUPUI Joint Topology Seminar, Indianapolis, IN
The high dimensional cohomology of the moduli space of curves with level structures

10.2016 Undergraduate Mathematics Symposium, University of Illinois at Chicago
The geometry of tilings (Plenary Lecture)

04.2016 Free Resolutions, Representations, and Asymptotic Algebra, Banff International Research Station
Stability in the homology of congruence subgroups

02.2016 Colloquium, University of Oklahoma
The topology of lattices

02.2016 Geometry and Topology Seminar, University of Oklahoma
The high-dimensional cohomology of the moduli space of curves with level structures

12.2015 Colloquium, University of Notre Dame
The topology of lattices

11.2015 Workshop on the cohomology of $\mathrm{Aut}(F_n)$, University of Copenhagen
The high-dimensional cohomology of the moduli space of curves with level structures

10.2015 University of Minnesota Topology Seminar
Stability in the homology of congruence subgroups

06.2015 Oberwolfach workshop on "New Perspectives on the Interplay between Discrete Groups in Low-Dimensional Topology and Arithmetic Lattices"
The high dimensional cohomology of $SL_n\mathcal{O}$

05.2015 Conference on the mapping class group and $\mathrm{Aut}(F_n)$, University of Texas at Austin
The second homology group of IA_n

05.2015 Texas A&M Groups and Dynamics Seminar
The topology of lattices

05.2015 New York Group Theory Seminar
The stable cohomology of congruence subgroups

05.2015 Colloquium, City College of New York
The topology of lattices in Lie groups

04.2015 Colloquium, University of Virginia
Integrality in the Steinberg module and the high-dimensional cohomology of $SL_n\mathcal{O}_K$

04.2015 Topology Seminar, University of Virginia
Representation-theoretic patterns in the stable cohomology of congruence subgroups

04.2015 13^{th} Annual Bloomington Geometry Workshop
Integrality in the Steinberg module and the high-dimensional cohomology of $SL_n\mathcal{O}_K$

03.2015 Teichmüller Modular Groups: A Celebration of Nikolai Ivanov's 60th Birthday, Chicago
Stability in the homology of congruence subgroups of the mapping class group

03.2015 40^{th} Spring Lecture Series, University of Arkansas
Integrality in the Steinberg module and the top-dimensional cohomology of $GL_n\mathcal{O}_K$

02.2015 Rice University Topology Seminar
Integrality in the Steinberg module and the top-dimensional cohomology of $GL_n\mathcal{O}_K$

10.2014 University of Cambridge Topology Seminar
Tits buildings, class numbers, and the top-dimensional cohomology of $SL_n\mathcal{O}$

10.2014 Warwick Mathematics Institute Geometry and Topology Seminar
Tits buildings, class numbers, and the top-dimensional cohomology of $SL_n\mathcal{O}$

10.2014 University of Southhampton Pure Mathematics Colloquium
Tits buildings, class numbers, and the top-dimensional cohomology of $SL_n\mathcal{O}$

10.2014 University of Glasgow Geometry and Topology Seminar
Representation stability and finite linear groups

09.2014 Oberwolfach workshop on "Topologie"
Modular symbols, class numbers, and the top-dimensional cohomology of $SL_n\mathcal{O}$

05.2014 Georgia Topology Conference
Modular symbols, class numbers, and the top-dimensional cohomology of $SL_n\mathcal{O}$

03.2014 Geometric groups on the gulf coast, Pensacola, FL
Modular symbols, class numbers, and the top-dimensional cohomology of $SL_n\mathcal{O}$

03.2014 Geometric groups on the gulf coast, Pensacola, FL
Graduate Student Talk: Introduction to the cohomology of the mapping class group

03.2014 Cornell Topology and Geometric Group Theory Seminar
On the second homology group of the Torelli subgroup of $Aut(F_n)$

01.2014 Six Crash Courses on Mapping Class Groups, AMS/MAA Joint Meeting
Introduction to mapping class groups

11.2013 Columbia Geometric Topology Seminar
Vanishing and nonvanishing in the high-dimensional cohomology of $SL_n(O_k)$

10.2013 The Power of Ideas, Part II; Scientia colloquium, Houston, TX
What we can't know

10.2013 Rice University Topology Seminar
On the second homology group of the Torelli subgroup of $Aut(F_n)$

10.2013 University of Chicago Geometry/Topology Seminar
On the second homology group of the Torelli subgroup of $Aut(F_n)$

08.2013 Workshop on homological stability, University of Copenhagen
On the second homology group of IA_n

07.2013 Interactions of low dimensional topology and geometric group theory, Max Planck Institute, Bonn
Generating the Johnson filtration

06.2013 Conference on the Johnson homomorphisms, University of Tokyo
Generating the Johnson filtration

06.2013 Conference on the Johnson homomorphisms, University of Tokyo
Generators for the hyperelliptic Torelli group and the kernel of the Burau representation at $t = -1$

05.2013 Atkin Memorial Workshop on Cohen-Lenstra Heuristics, University of Illinois at Chicago
Stability in the homology of congruence subgroups

03.2013 GATSBY (Geometry and Topology Seminar at Brown and Yale)
Stability in the homology of congruence subgroups

02.2013 University of Rochester Topology Seminar
Stability in the homology of congruence subgroups

02.2013 SUNY at Buffalo Geometry/Topology Seminar
Stability in the homology of congruence subgroups

11.2012 Cohomological Methods in Geometric Group Theory, Banff International Research Station
Unstable homological stability

11.2012 Cohomological Methods in Geometric Group Theory, Banff International Research Station
Stability in the homology of congruence subgroups

10.2012 Rice University Topology Seminar
On the Burau representation at -1

10.2012 University of Texas Topology Seminar
Stability in the homology of congruence subgroups

10.2012 Stanford Topology Seminar
Stability in the homology of congruence subgroups

09.2012 PATCH Seminar (Temple, Bryn Mawr, Haverford, and University of Pennsylvania)
Stability in the homology of congruence subgroups

06.2012 Mapping Class Groups and Quantum Topology, IRMA, Strasbourg
Stability in the homology of congruence subgroups

03.2012 Texas A&M Groups and Dynamics Seminar
Small generating sets for the Torelli group

02.2012 Spring Texas Geometry and Topology Conference
Representation stability, congruence subgroups, and mapping class groups

01.2012 Rice University Colloquium
Representation stability and congruence subgroups

12.2011 Michigan State University Topology Seminar
Congruence subgroups and homological stability

12.2011 Michigan State University RTG Seminar
Small generating sets for the Torelli group

11.2011 Texas Christian University Colloquium
Congruence subgroups and homological stability

10.2011 Georgia Tech Topology Seminar
Congruence subgroups and homological stability

09.2011 University of Arkansas Topology Seminar
Abelian quotients of subgroups of the mapping class group and higher Prym representations

09.2011 University of Arkansas Colloquium
Small generating sets for the Torelli group

06.2011 Oberwolfach workshop on "Arithmetic Groups vs. Mapping Class Groups: Similarities, Analogies and Differences"
Abelian quotients of subgroups of the mapping class group and higher Prym representations

05.2011 Ohio State University Torelli Group Workshop
Small generating sets for the Torelli group

04.2011 Special Session, Geometric Group Theory and Dynamics, AMS Sectional Meeting
Abelian quotients of subgroups of the mapping class group and higher Prym representations

03.2011 Special Session on Geometric Group Theory, 45th Spring Topology and Dynamics Conference
Abelian quotients of subgroups of the mapping class group and higher Prym representations

03.2011 Aarhus University Topology Seminar
The Picard group of the moduli space of curves with level structures

03.2011 University of Copenhagen Algebra/Topology Seminar
Equivariant homological stability for congruence subgroups

03.2011 University of Copenhagen Topology Seminar
The Picard group of the moduli space of curves with level structures

12.2010 LA Joint Topology Seminar
Equivariant homological stability for congruence subgroups

11.2010 Rice University Topology Seminar
Abelian quotients of subgroups of the mapping class group and higher Pyrm representations

11.2010 Special Session, Arithmetic, Groups, and Geometry, AMS Sectional Meeting
Equivariant homological stability for congruence subgroups

10.2010 Rice University Topology Seminar
Equivariant homological stability for congruence subgroups

08.2010 Rice University Colloquium
The Torelli group

04.2010 Harvard Dynamics and Geometry Seminar
The Picard group of the moduli space of curves with level structures

04.2010 Special Session, Topics in Geometric Group Theory, AMS Sectional Meeting
Equivariant homological stability for pure braid groups

02.2010 MIT Colloquium
The Picard group of the moduli space of curves with level structures

02.2010 Yale University Colloquium
The Picard group of the moduli space of curves with level structures

02.2010 University of Wisconsin at Madison Colloquium
The Picard group of the moduli space of curves with level structures

02.2010 University of British Columbia Topology Seminar
An infinite presentation of the Torelli group

02.2010 University of British Columbia Colloquium
The Picard group of the moduli space of curves with level structures

01.2010 Louisiana State University Colloquium
The Picard group of the moduli space of curves with level structures

01.2010 Syracuse University Colloquium
The Picard group of the moduli space of curves with level structures
01.2010 Indiana University at Bloomington Colloquium
The Picard group of the moduli space of curves with level structures
01.2010 University of Kentucky Colloquium
The Picard group of the moduli space of curves with level structures
01.2010 University of Pittsburgh Colloquium
The Picard group of the moduli space of curves with level structures
12.2009 MIT Geometry Seminar
The Picard group of the moduli space of curves with level structures
12.2009 University of Chicago Geometry/Topology Seminar
The Picard group of the moduli space of curves with level structures
12.2009 University of Maryland Geometry/Topology Seminar
The Picard group of the moduli space of curves with level structures
11.2009 Rice University Colloquium
The Picard group of the moduli space of curves with level structures
11.2009 Ohio State University Geometric Group Theory Seminar
The Picard group of the moduli space of curves with level structures
10.2009 Michigan State University Topology Seminar
The Picard group of the moduli space of curves with level structures
04.2009 Columbia Geometric Topology Seminar
The Picard group of the moduli space of curves with level structures
04.2009 Tufts Geometric Group Theory Seminar
On the self-intersections of curves deep in the lower central series of a surface group
01.2009 Duke Geometry/Topology Seminar
The second rational homology group of the moduli space of curves with level structures
12.2008 Caltech Geometry and Topology Seminar
The second rational homology group of the moduli space of curves with level structures
11.2008 Workshop on Geometry and Topology of Mapping Class Groups, Akita (two talks)
An infinite presentation of the Torelli group, A Birman exact sequence for $Aut(F_n)$
11.2008 University of Tokyo Topology Seminar
The second rational homology group of the moduli space of curves with level structures
10.2008 Brown Geometry and Topology Seminar
The second rational homology group of the moduli space of curves with level structures
10.2008 Tufts Geometric Group Theory Seminar
The second rational homology group of the moduli space of curves with level structures
10.2008 Special Session, Low-Dimensional Topology, AMS Sectional Meeting
The second rational homology group of the moduli space of curves with level structures
06.2008 Rice University Colloquium
The second rational homology group of the moduli space of curves with level structures
03.2008 Finite Type Invariants, Fat Graphs and Torelli-Johnson-Morita Theory, CTQM
Subgroup distortion in the mapping class group
02.2008 Tufts Geometric Group Theory Seminar
Subgroup distortion in the mapping class group
11.2007 Topics in Geometric Group Theory, MSRI
On the Homology of Finite Index Subgroups of the Mapping Class Group
03.2007 Columbia Geometric Topology Seminar
An infinite presentation of the Torelli group
03.2007 Yale Topology/Geometry Seminar
An infinite presentation of the Torelli group
02.2007 Cornell Topology and Geometric Group Theory Seminar
An infinite presentation of the Torelli group

01.2007 Special Session, Mapping Class Groups and Handlebodies, AMS/MAA Joint Meeting
An infinite presentation of the Torelli group
12.2006 University of Illinois at Urbana–Champaign Group Theory Seminar
An infinite presentation of the Torelli group
10.2006 Special Session, Low Dimensional Topology and Geometry, AMS Sectional Meeting
An infinite presentation of the Torelli group
07.2006 Torelli Group Workshop
Cutting and pasting in the Torelli group
02.2005 Georgia Tech Geometry and Topology Seminar
The rationality of three-dimensional sol-manifolds

Graduate Students and Postdocs

Postdocs

2017–2020 Daniel Studenmund (placement: assistant professor, Binghampton University)
2014–2016 Neil Fullarton (placement: mathematics teacher, Episcopal High School)
2012–2016 Yunhui Wu (placement: assistant professor, Tsinghua University)

Graduate students, primary advisor

2021– Audriana Pohlman
2021– Annie Holden
2021– Jiayi Shen
2021– Xiyan Zhong
2020– Matthew Scalamandre (Ph.D. 2024; first position: Brauer Postdoctoral Fellow, University of Toronto)
2017–2021 Jacob Landgraf (Ph.D. 2021; first position: industry)
2012–2017 Corey Bregman (Ph.D. 2017; first position: instructor, Brandeis University)
2015–2016 Kenan Ince (Ph.D. 2016; first position: assistant professor, Westminster College)
2010–2015 David Cohen (Ph.D. 2015; first position: NSF postdoc, University of Chicago)
2010–2014 James Cooper (Ph.D. 2014; first position: Reasoning Mind)

Service to the Department

Notre Dame

2023–2024 Executive Committee
2021–2023 Hiring Committee
2021–2022 Huisking Chair Search Committee
2020–2022 Open Search Committee
Chair, 2020–2022
2018–2019 Kenna Chair Search Committee
2018–2020 Committee on Appointments and Promotions
2017–2020 Hiring Committee
2016–2017 Algebra Search Committee
2016–2020 Graduate Admissions Committee

Rice

2015–2016 Wolfe Lecture Committee
2014–2016 Graduate admissions
Chair, 2015-2016
2013–2016 Appointments committee
2013–2014 Graduate grievance committee
2012–2013 Colloquium committee
2010–2014 Evans hiring committee
Chair, 2013–2014
2010–2016 Undergraduate commitee
Chair 2014–2015

Service to the University

Notre Dame

2024	University Named Chair Review Committee
2023–2026	University Committee on Libraries
2023	University Named Chair Review Committee (chair)
2020	University Named Chair Review Committee

Rice

2015–2016	University Research Committee
2011–2016	Faculty Associate, Baker College
2011–2015	University Teaching Committee

Service to the Community

2018–2019	Founder, Notre Dame Program in Mathematics for High School Students
2014–2018	Founder, Rice Program in Mathematics for High School Students

Conferences Organized

2025	Motives and mapping class groups (AIM workshop) Coorganizers: H. Esnault, A. Landesman, D. Litt; cancelled due to Los Angeles wildfires
2025	Cohomology of arithmetic groups, mapping class groups, and moduli spaces (special session, Joint Mathematics Meeting) Coorganizer: S. Payne
2022	Stability in Topology, Arithmetic, and Representation Theory II Coorganizers: J. Miller, P. Patzt
2020	Stability in Topology, Arithmetic, and Representation Theory (special session, AMS central sectional meeting) Coorganizers: J. Miller, P. Patzt; conducted online due to COVID-19
2017	Braids in algebra, geometry, and topology Coorganizers: T. Brendle, J. Ellenberg, A. Ranicki
2017	Representation stability and its applications (special session, AMS central sectional meeting) Coorganizers: P. Hersh, J. Miller
2016	Representation stability (AIM workshop) Coorganizers: S. Sam, A. Snowden, D. Speyer
2013	3-Manifolds: Heegaard Splittings, the Curve Complex, and Hyperbolic Geometry Coorganizers: T. Cochran, S. Harvey
2012	Texas Geometry/Topology Conference Coorganizer: B. Hassett
2011	Ahlfors-Bers Colloquium Local organizer
2011	Geometric group theory and dynamics (special session, AMS western sectional meeting) Coorganizers: D. Calegari, M. Day, J. Louwsma

Professional Service

2024–2027	AMS Council Member At Large
2024–2027	AMS Committee on Publications (chair in 2025-2026)
2023–2026	AMS Fellows Program Selection Committee
2023–2026	AMS Invited Address Committee for National Meetings (chair in 2025-2026)
2020–2025	AWM Joan & Joseph Birman Research Prize in Geometry and Topology Selection Committee (chair in 2024-2025)
2017–2019	AMS Subcommittee on Membership and Member Benefits
2015–2018	AMS–Simons Travel Grants Committee
Referee	Many journals, e.g. Ann Math, Duke Math J, Invent Math, and Jour Amer Math Soc
Reviewer	NSF, Royal Society, French National Research Agency, Danish Council for Independent Research, and Simons foundation grants

Teaching

Notre Dame

2024–2025	No teaching due to sabbatical

2024, Spring	Math 10250: Elements of Calculus
2024, Spring	Math 60440: Basic Topology II
2023, Fall	Math 10120: Finite Mathematics
2023, Spring	Math 10120: Finite Mathematics
2022, Fall	Math 80430: Group Cohomology
2022, Spring	Math 30820: Honors Algebra IV
2021, Fall	Math 80430: 3-manifolds
2021, Spring	Math 10860: Honors Calculus II
2020, Fall	Math 10850: Honors Calculus I
2020, Spring	Math 60440: Basic Topology II
2019, Fall	Math 60710: Introduction to Algebraic Geometry
2019, Fall	Math 10120: Finite Mathematics
2019, Spring	Math 60440: Basic Topology II
2018, Fall	Math 30810: Honors Algebra III
2018, Fall	Math 10120: Finite Mathematics
2018, Spring	Math 50780: SUMR Class on Elliptic Curves
2017, Fall	Math 60330: Basic Geometry and Topology
2017, Spring	Math 10560: Calculus II (2 sections)
2016, Fall	Math 60330: Basic Geometry and Topology

Rice

2015, Fall	Math 102: Single Variable Calculus II
2015, Fall	Math 444/539: Geometric Topology
2015, Fall	Math 681: Topology Seminar
2015, Spring	Math 681: Topology Seminar
2014, Fall	Math 681: Topology Seminar
2014, Spring	Math 212: Multivariable calculus
2014, Spring	Math 541: Topics in Topology (The Torelli group)
2014, Spring	Math 681: Topology Seminar
2013, Fall	Math 490: Directed reading on representation theory, Nick Ryder
2013, Fall	Math 681: Topology Seminar
2013, Spring	Math 366: Geometry
2013, Spring	Math 680: Mathematics Colloquium
2013, Spring	Math 681: Topology Seminar
2012, Fall	Math 428/518: Topics in Complex Analysis (Compact Riemann Surfaces)
2012, Fall	Math 680: Mathematics Colloquium
2012, Fall	Math 681: Topology Seminar
2012, Spring	Math 464/564: Abstract Algebra III
2011, Fall	Math 541: Topics in Topology (The Mumford conjecture)
2011, Spring	Math 212: Multivariable calculus
2011, Spring	Math 699: Reading course on the mapping class group
2010, Fall	Math 444/539: Geometric topology

MIT

2010, Spring	18.904: Seminar in Topology
2009, Fall	18.700: Linear Algebra
2009, Spring	18.901: Introduction to Topology
2008, Fall	18.02: Calculus (Recitation Instructor)
2008, Spring	18.03: Differential Equations (Recitation Instructor)

University of Chicago

2006-2007	Math 195/6: Math Methods for Biological/Social Sciences I/II (Instructor)
2005-2006	Math 131/2/3: Elementary Functions and Calculus I/II/III (Instructor)
2004-2005	Math 131: Elementary Functions and Calculus I (Instructor)
2003-2004	Math 270/3/4: Complex Analysis, Diff Equations, Diff Manifolds (TA)