Curriculum Vitae

Jennifer Paulhus
Department of Mathematics and Statistics

Education

Ph.D. in Mathematics
University of Illinois at Urbana-Champaign (UIUC), May 2007
Advisor: Iwan Duursma

B.A. in Mathematics with honors, Computer Science concentration, magna cum laude
College of the Holy Cross, May 1999

Employment

Professor	Mount Holyoke College	July 2025 - present
Associate Professor	Mount Holyoke College	July 2024 - June 2025
Professor	Grinnell College	May 2023 - July 2025
Fulbright Scholar	Universidad de la Frontera, Chile	March - June 2022
Associate Professor	Grinnell College	May 2017 - May 2023
Assistant Professor	Grinnell College	August 2011-May 2017
Assistant Professor	Villanova University	August 2010-May 2011
Assistant Professor-Term (postdoctoral position)	Kansas State University	August 2007-August 2010

Research Publications[1]

L. Combes, J. Jones, J. Paulhus, D. Roe, M. Roy, and S. Schiavone. Creating a dynamic database of finite groups. *To appear*.

J. Paulhus and A. Sutherland. Completely decomposable modular Jacobians. *To appear*.

R. Hidalgo, J. Paulhus, S. Reyes-Carocca, and A. Rojas. On non-normal subvarieties of the moduli space of Riemann surfaces. *Transformation Groups,* 2024. online.

J. Paulhus. A database of group actions on Riemann surfaces. *Birational Geometry, Kähler-Einstein Metrics and Degenerations*. Springer Proceedings in Mathematics and Statistics, 409: 693-708, 2023.

T. Chow and J. Paulhus. Algorithmically distinguishing irreducible characters of the Symmetric group. *The Electronic Journal of Combinatorics*. 28 (2), 2021. online.

M. Carvacho, J. Paulhus, T. Tucker, and A. Wootton. Non-abelian simple groups act with almost all signatures. *Journal of Pure and Applied Algebra*. 225 (4), 2021, no. 4.

S.A. Broughton, C. Camacho, J. Paulhus, R. Winarski, and A. Wootton. Using strong branching to find automorphism groups of n-gonal surfaces. *Albanian Journal of Mathematics, Special issue in honor of Kay Magaard*. 12 (1): 89-129, 2018.

J. Paulhus and A. Rojas. Completely decomposable Jacobian varieties in new genera. *Experimental Mathematics*. 26 (4): 430-445, 2017.

A. Fischer, M. Liu, and J. Paulhus. Jacobian Varieties of Hurwitz Curves with automorphism group PSL(2,q). *Involve, a Journal of Mathematics*. 9-4: 639-655, 2016.
(Research with Grinnell undergraduates through a Mentored Advanced Project.)

J. Paulhus. Elliptic factors in Jacobians of hyperelliptic curves with certain automorphisms. *ANTS X: Proceedings of the Tenth Algorithmic Number Theory Symposium*. Mathematical Sciences Publishers. Everett Howe and Kiran Kedlaya (Eds.), 2013.
(Errata available at http://jenpaulhus.com/research/errata.pdf.)

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[1] Copies of most papers and preprints are available at http://jenpaulhus.com/research/.

Research Publications, continued

J. Bourgain, T. Cochrane, J. Paulhus, and C. Pinner. On the parity of k-th powers mod p: A generalization of a problem of Lehmer. *Acta Arithmetica*. 147 (2): 173-203, 2011.

L. Berger, J.-L. Hoelscher, Y. Lee, J. Paulhus and R. Scheidler. The ℓ-rank structure of a global function field. *Women in Numbers: Research Directions in Number Theory*. Fields Institute Communications (60): 145-166, 2011.

J. Bourgain, T. Cochrane, J. Paulhus, and C. Pinner. Decimations of l-sequences and permutations of even residues mod p. *Society of Industrial and Applied Mathematics Journal on Discrete Mathematics*. 232 (2): 842-857, 2009.

J. Paulhus. Decomposing Jacobians of curves with extra automorphisms. *Acta Arithmetica*. 132 (3): 231-244, 2008.

Peer Reviewed Expository Papers and Short Articles

J. Paulhus. Group actions and Riemann surfaces. In Brisbin, A., Lange, K., McNicholas, E., Purvine, E. (eds) *Research Connections: Career and Research Journeys from the SMP Community*. Association for Women in Mathematics Series, vol 36, 2025. Springer, Cham.

J. Paulhus. Maintaining a research career at a primarily undergraduate institutions. *Notices of the American Mathematical Society (AMS)*. vol. 70, no. 4. April 2023.

S.A. Broughton, J. Paulhus, and A. Wootton. Future directions in automorphisms of surfaces, graphs, and other related topics. *Automorphisms of Riemann surfaces, subgroups of mapping class groups and related topics, Contemporary Math,* 776, AMS, 37–67, 2022.

Books Edited

J. Jones, J. Paulhus, A. Sutherland, and J. Voight, ed. LuCaNT: LMFDB, Computation, and Number Theory II. *In preparation*.

J. Cremona, J. Jones, J. Paulhus, A. Sutherland, and J. Voight, ed. LuCaNT: LMFDB, Computation, and Number Theory. *Contemporary Mathematics,* vol. 796, 2024.

A. Wootton, S. A. Broughton, and J. Paulhus, ed. Automorphisms of Riemann surfaces, subgroups of mapping class groups and related topics. *Contemporary Mathematics* vol. 776, 2022.

Submitted Articles and Articles in Preparation

J. Paulhus and A. Wootton. Alternating group actions of Riemann surfaces. *In preparation*.

Other Publications

J. Paulhus. Branching data for curves up to genus 48. arXiv:1512.07657 [math.AG] at http://arxiv.org/abs/1512.07657, 2015.
Descriptions of computations of monodromy using work of Thomas Breuer.
Data: http://jenpaulhus.com/research/mondromy.html
Computer code: https://github.com/jenpaulhus/breuer-modified

A. Bennett, R. Manspeaker, R. Natarajan, and J. Paulhus. Studio College Algebra at Kansas State University. *Moving Forward: Innovations in Introductory Collegiate Mathematics*. W.E. Haver and S.L. Ganter (Eds.), Washington, DC: MAA. 99-105, 2011.

J. Paulhus. *Elliptic factors in Jacobians of low genus curves*. Ph.D. dissertation, University of Illinois at Urbana-Champaign, 2007.

C. Girod, M. Lepinski, J. Mileti, and J. Paulhus. Cwatset isomorphism and its consequences. *Rose-Hulman Mathematical Sciences Technical Report Series*, vol. 1, 2000.

Invited Talks[2]

17th Conference on Intelligent Computer Mathematics, Montreal, Canada, August 2024
Plenary Talk
International Congress on Mathematical Software, Durham, UK, July 2024
Special Session on Research Data
Joint Mathematics Meeting, Boston, January 2023
AMS Special Session on Arithmetic Geometry Informed by Computation
Universidad de la Frontera (Temuco, Chile) Colloquium, May, 2022
AMS Spring Eastern (Virtual) Sectional Meeting, March 2022
Special Session on Automorphisms of Riemann Surfaces, Subgroups of Mapping Class Groups and Related Topics
Joint AMS/MAA Meeting, online, January 2021
AMS Special Session on Algebraic and Arithmetic Geometry
Universidad de la Frontera (Temuco, Chile) Colloquium, online, August 2020
Joint AMS/MAA Meeting, Denver, January 2020
AMS Special Session on Rational Points on Algebraic Varieties: Theory and Computation
AMS Fall Central Sectional Meeting, September 2019
Special Session on Geometry and Topology in Arithmetic
Arithmetic of Low-Dimensional Abelian Varieties, June 2019
The Institute for Computational and Experimental Research in Mathematics (ICERM)
Canadian Mathematical Society Winter Meeting, December 2018
Special Session on Explicit Methods in Arithmetic Geometry
AMS Spring Western Sectional Meeting, April 2018
Special Session on Automorphisms of Riemann Surfaces and Related Topics
Iberoamerican Congress on Geometry, January 2018
Special Session on Abelian Varieties
Joint AMS/MAA Meeting, San Diego, January 2018
AMS Special Session on A Showcase of Number Theory in the Liberal Arts
Geometry at the Frontier II: Research Workshop, Pucón, Chile, November 2017
Universidad de Talca Mathematics Department Colloquium, October 2015

Other Conference Talks

Canadian Number Theory Association Meetings, June 2016
International Congress of Mathematicians, Seoul, South Korea, August 2014

Professional Service

Co-organizer: LMFDB, Computation, and Number Theory Conference
The Institute for Computational and Experimental Research in Mathematics (ICERM)
July 2023 (1st), July 2025 (2nd)
Managing Editor: L-functions and Modular Forms Database, http://www.lmfdb.org
January 2023-present (Associate Editor: August 2018-December 2022)
Committee Member: Member at Large (Chair: 2025-2026) on the AMS Committee on Meetings and Conferences
February 2023-January 2026
Program Committee Member: ANTS XIV (Summer 2020) and ANTS XVI (Summer 2024)
Steering Committee Member: Algorithmic Number Theory Symposium (ANTS), biennial international conference
August 2018-August 2028

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[2] Older invited talks and other conference talks are at http://jenpaulhus.com/previoustalks.html.

Professional Service, continued

Co-organizer: ANTS XIII, International conference held at the University of Wisconsin, Madison, July 2018
- secured funding for the conference
- ran the conference website
- choose the invited speakers and a publisher for the conference proceedings,

Paper Referee: ANTS XI and XIV, Bulletin of the Korean Mathematical Society, International Journal of Number Theory, Mathematical Journal of Madrid Academy of Sciences, Quarterly Journal of Mathematics, and Transactions of the AMS

Ph.D. Defense Committee Member:
- Benjamín Moraga Baeza, Universidad de la Frontera, Temuco, Chile, March 2024
- Estefanía Bravo, Universidad de Chile, March 2022
- Robert Auffarth, Pontifica Universidad Católica de Chile, January 2014

Co-organizer: AMS Special Session on Automorphisms of Riemann Surfaces, Subgroups of
- Mapping Class Groups and Related Topics, AMS Spring Sectional Meetings, April 2024 and March 2020 (postponed until March 2022)
- AMS Special Session on Arithmetic Geometry, Joint AMS/MAA Meeting, January 2010 and 2012

Reviewer: AMS Mathematical Reviews, 2008-2012

Grants, Honors, and Awards

Frank and Roberta Furbush Scholar in Mathematics, 2017-2018 and 2022-2024
Grinnell College endowed honorary fund to support mid-career faculty scholarship

National Science Foundation and National Security Agency conference grants, 2018
Co-PI on two grants totaling $25,000 to support travel for students and recent graduate to attend the 13th Algorithmic Number Theory Symposium at the University of Wisconsin, Madison in July 2018.

Harris Faculty Fellowship, 2015-2016
Year long, competitive junior faculty research leave through Grinnell College.

Heath Visiting Professor, Spring 2015
Brought an international scholar, Dr. Anita Rojas, to Grinnell College for a semester.

American Mathematical Society travel grant, August 2014
Travel to the International Congress of Mathematicians.

Select Mount Holyoke College Service

Department Chair: July 2025-present

Committee Member: HHMI Grant Steering Committee and subcommittee to develop a Quantitative Reasoning Center.

Select Grinnell College Service

Department Chair: July 2022-June 2024
- chaired a search committee which resulted in the hiring of two Clare Boothe Luce Professors
- led an initiative to rethink our introductory level courses
- chaired a review committee for a junior faculty member
- crafted the department response to a Departmental External Review
- submitted successful position proposals
- guided the department's Student Educational Policy Committee

Committee Member: Admissions and Financial Aid Committee, Web Governance Committee, Personnel Appeals Board, Academic Affairs Committee of the Board of Trustees

Search Committee Member: Director of Corporate, Foundation and Government Relations, Vice President of Academic Affairs and Dean of the College, Writing Center Instructor

Courses Taught[3] (+ indicates graduate course)

Mount Holyoke College

Calculus I and III
Advanced Linear Algebra

Grinnell College

Tutorial-Almost Heaven: West Virginia
Calculus I
Calculus II (a multivariable calculus course)
Linear Algebra
Combinatorics
Elementary Number Theory
Demystifying Mathematics
Foundations of Abstract Algebra
Algebraic Number Theory
Field Theory
Elliptic Curves
Riemann Surfaces

Villanova University

Calculus I
Modern Algebra I
Number Theory+

Kansas State University: Postdoc

Introduction to the Theory of Groups+
Topics in Number Theory: Elliptic Curves+
Discrete Mathematics
Introduction to Contemporary Math
Math for Elementary School Teachers
College Algebra

UIUC: Graduate Teaching Assistant (as primary instructor)

Calculus for Business, large lecture and small class
A Mathematical World
College Algebra
Introductory Matrix Theory

Workshops and Courses

Workshop on Arithmetic Geometry, Number Theory, and Computation, ICERM, June 2020
Project co-lead for "Groups in the LMFDB"

Connections in the LMFDB, Institute of Advanced Study, March 2019

Geometry at the Frontier II: School, Pucón, Chile, November 2017
Gave a course on "Elliptic curves and an introduction to abelian varieties".

Symmetries of Surfaces, Maps and Dessins, Banff International Research Station, Fall 2017

L-Functions and Modular Forms Database, University of Bristol, March 2016

SMPosium, Carleton College, July 2011

Women in Numbers, Banff International Research Station, November 2008

Rational Points on Curves, Banff International Research Station, February 2007

Arizona Winter School, March 2006

Membership

American Mathematical Society, Phi Beta Kappa

Computer Proficiencies

Magma, GAP, Maple, Sage, Python, PostgreSQL

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[3] Materials for many classes are available at http://jenpaulhus.com/teaching/