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Appointments and Education

Carleton College

2021–Now Assistant Professor, Mathematics and Statistics.

University of Edinburgh

2026 Visiting Senior Research Fellow. *SIGMA Project*, School of Social and Political Science.

University of California, Irvine

2024–2025 Visiting Researcher, Mathematics.

2020–2021 Presidential Postdoctoral Fellow, Mathematics.

University of Chicago

2015–2020 Ph.D. in Mathematics.

Advisor: Benson Farb.

Dissertation: *On the topology and arithmetic of spaces of non-degenerate maps between complex projective spaces.*

New Mexico Institute of Mining and Technology

2011–2015 B.S. in Mathematics.

Fellowships and Awards

2024–Now National Science Foundation, LEAPS-MPS Grant DMS-2418943, *Special points, moduli problems, and resolvent filtrations*. PI, \$246,125.

2026 Mathematical Association of America, *Henry L Alder Award*. For Distinguished Teaching by a Beginning College or University Mathematics Faculty Member.

Carleton College, *Impact Award: Student Hero*. For a member of the Carleton community who has significantly impacted students' experience or wellbeing.

2023–2024 Mathematical Association of America, *Project NExT Fellowship*.

2020–2021 University of California, *President's Postdoctoral Fellowship*.

2017–2020 National Science Foundation, *Graduate Research Fellowship*.

Publications

Preprints

- 2026 “Resolvent degree of the braid group,” with S. Raman, J. Wolfson. Available upon request.
- 2025 “Special points on intersections of hypersurfaces.” arxiv.org/abs/2510.10272.
- “On the resolvent degree of $\mathrm{PSU}(3,q)$, with an appendix co-authored by Nawal Baydoun,” with P. Christofferson, A. Ganguly, E. Kuriyama, Y. C. Li. arxiv.org/abs/2509.19237.
- “Solvable points on intersections of quadrics, cubics, and quartics,” with J. Wolfson. arxiv.org/abs/2508.00215.

Peer-Reviewed Articles

- 2024 “Generalized versality, special points, and resolvent degree for the sporadic groups,” with A. Sutherland, J. Wolfson. *Journal of Algebra*, 647: 758–793. doi.org/10.1016/j.jalgebra.2024.02.025.
- 2021 “Problems in arithmetic topology,” with J. Wolfson. *Research in the Mathematical Sciences*, 8(2): 1–14. doi.org/10.1007/s40687-021-00264-5.
- 2020 “Spaces of non-degenerate maps between complex projective spaces.” *Research in the Mathematical Sciences*, 7(3): 26. doi.org/10.1007/s40687-020-00224-5.

Repositories

- 2026–Now “Docs-as-Code Math Course Template.” A generic Quarto template for typesetting accessible mathematical course materials featuring unified cross-referencing. github.com/claudiojacobomath-course.
- 2025–2026 “Resolvent degree of finite simple groups.” Living catalog of upper bounds on RD, with codebase for verification and community contributions. github.com/claudiojacobomath-course.

Other Articles

- 2026 “Inhabiting the Spaces We Study: A Note from IHP.” *MAA FOCUS*, 46(3): 36–39.
- “FOCUS Roundtable: On the Value of Inclusivity, II,” with S. Kennedy. *MAA FOCUS*, 46(2): 47–51.
- “An interview with George Csicsery,” with A. Prieto-Langarica. *MAA FOCUS*, 46(1): 35–37.
- 2025 “FOCUS Roundtable: On the Value of Inclusivity, I,” with S. Kennedy. *MAA FOCUS*, 45(6): 37–40.
- “The impact of recent government actions on our community,” with A. Henrich. *MAA FOCUS*, 45(2): 24–25.
- “Math around the world: A conversation with Michael Dorff and Nancy Neudauer.” *MAA FOCUS*, 45(1): 28–30.
- 2024 “Fractals in Africanist music,” with S. Raman, S. Viswanath, J. Wolfson. *MAA FOCUS*, 44(4): 18–22.
- 2022 “#DisruptJMM,” with W. Bork, C. Eaton, Piper H.. *MAA FOCUS*, 42(1): 18–21.

Exhibitions and Illustrations

- 2026 “The character of insolubility.” *MAA FOCUS*. Renderings of algebraic numbers (starscapes) over various box regions, in degrees 6 and 8. Colors are used to indicate complexity (in terms of commutator lengths, solvability, and best bounds on resolvent degree) for associated Galois groups. Cover illustration for the 2026 June/July issue.
- “Cubic lines,” with G. Dorfsman-Hopkins, S. Trettel. *Creation: Between Art and Mathematics*, Maison Poincaré. A realistic glass rendering of a cubic surface with its 27 lines, accompanied by a second pane depicting the six blow-up points and the curves which pass to lines.
- 2024 “Double spiral medallions (in red).” *MAA FOCUS*. A Julia set with seed coordinate $c = -0.752 + 0.064i$. Cover illustration for the 2024 August/September issue.

Invited Talks

- 2026 “The discriminant and its complement.” *Computation and Illustration in Mathematical Research*, MAA MathFest.
- “Joy in the struggle.” *Alder Award Session*, MAA MathFest.
- “Accounting ideals in modern mathematics.” *How Much? Global Histories and Material Cultures of Accountancy and Metrology*, International Centre for Mathematical Sciences.
- “Polynomials in motion.” *UCI Geometry and Topology Day*, Southern California Geometry and Topology Center.
- “Plants of slow growth: reducing coefficients and sustaining mathematics.” *Mathematics Teaching and Learning in Higher Education*, University of Florida.
- 2025 “Topology of algebraic problems.” *Practicum for Undergraduate Mathematicians*, Institute for Pure and Applied Mathematics.
- “How hard could it be? An invitation to resolvent degree.” *MAA North Central Section Spring Meeting*, St. Olaf College. (Keynote speaker)
- “Plants of slow growth: reducing coefficients and sustaining mathematics.” *The Alchemy of Mixing Mathematics*, Pitzer College.
- “Roots of topology.” *Minicourse*, OURFA²M².
- “Grad worker power.” *Our Stories series*, OURFA²M².
- 2024 “A tour of resolvent degree.” *Topology Seminar*, Claremont College.
- “Tschirnhaus’ transformations, Klein’s hypergalois theory, and Hilbert’s 13th.” *Geometry and Topology Seminar*, Washington University in St. Louis.
- “Versality via special points.” *Topology Seminar*, University of Minnesota.
- 2023 “Polynomials, topology, and us.” *Modern Math Workshop*, Institute for Mathematical and Statistical Innovation.
- “Mathematical stories and inclusive pedagogy.” *Innovative Pedagogy in Geometry and Topology*, Oberlin College.
- 2022 “A conversation on rehumanizing math.” *Park City Mathematics Institute*, Institute for Advanced Study.

“Configuration spaces and arithmetic statistics.” *Latinx in the Mathematical Sciences*, Institute for Pure and Applied Mathematics.

“The moduli space of linear systems on $\mathbb{P}^1$.” *Stability in Topology, Arithmetic, and Representation Theory*, Purdue University.

2021 “Topology of non-degenerate systems.” *Topology Seminar*, Purdue University.

2020 “Stone–Weierstrass and point counting.” *Topology Seminar*, University of Wisconsin-Milwaukee.

“Topology of the quadratic formula.” *Math Colloquium*, Bowdoin College.

“Topology of the quadratic formula.” *Math Colloquium*, Ithaca College.

“Topology of the quadratic formula.” *Math and Stats Colloquium*, Carleton College.

Teaching History

Carleton

2025–2026 Math 120: *Calculus II*.

Math 236: *Mathematical Structures* (Two sections).

Math 362: *Representation Theory*.

Math 399: *Senior Seminar*.

Math 400: *Integrative Exercise*.

2023–2024 Math 120: *Calculus II* (Two sections).

Math 206: *Tour of Math* (Coordinator).

Math 236: *Mathematical Structures*.

Math 295: *Introduction to Computational Algebraic Geometry*.

Math 342: *Abstract Algebra*.

2022–2023 Math 100: *Freshman Seminar*.

Math 236: *Mathematical Structures*.

Math 342: *Abstract Algebra*.

Math 362: *Representation Theory*.

Math 400: *Integrative Exercise* (Two sections).

2021–2022 Math 120: *Calculus II* (Three sections).

Math 236: *Mathematical Structures*.

Math 236: *Abstract Algebra*.

University of California, Irvine

2020–2021 Math 184: *History of Mathematics*.

University of Chicago

- 2021–2022 *How Chance Changes the World.*
- 2020–2021 *How Chance Changes the World.*
- 2019–2020 *Fractals, Algorithms, and Us.*
- 2018–2019 *Topology of functions.*
- 2017–2018 *Symmetry!* (Teaching Assistant).
- 2016–2017 Math 257: *Honors Algebra I* (College Fellow).
Math 258: *Honors Algebra I* (College Fellow).
Math 259: *Honors Algebra III* (College Fellow).

New Mexico Institute of Mining and Technology

- 2013–2014 CSE 113: *Introduction to Computer Science* (Two sections) (Teaching and Lab Assistant).
Math 581: *Introduction to Algebraic Geometry* (Lecturer).
- 2012–2013 CSE 122: *Algorithms and Data Science* (Teaching Assistant).

Research Advising

Other

- 2025–Now Second advisor to N. Baydoun.
- 2024–Now Committee member to A. Martinez.

Carleton College

- 2025–2026 “Interactive visualizations of projective varieties.” Group comps. K. Hess, C. Ruppe, J. Schaefer.
- “Exploring hyperbolic geometry through wormholes.” Group comps. O. Alsaad, S. Sun, L. Zhang.
- “Illuminating visualizations of Schwarzschild black holes.” Group comps. A. McKeever, K. Nagle, D. Shope.
- “Domain repetition and non-Euclidean geometries.” Group comps. A. Enriquez-Lynd, A. Xuan, A. Zhang.
- “On the resolvent degree of $\mathrm{PSU}(3, q)$.” Independent research. P. Christofferson, A. Ganguly, E. Kuriyama, Y. C. Li.
- 2024 “Klein’s lectures on the icosahedron and topological Abel–Ruffini.” Independent research. A. Ganguly, A. Hoganson.
- “Murmurations of elliptic curves via persistent homology.” Independent research. A. Ganguly, A. Hoganson.
- “Gauss–Bonnet and gravity.” Comps. M. Bloom.
- “Varied approaches towards Poincaré–Hopf.” Comps. W. McCreary.

- “The Poincaré group and Wigner’s classification.” Comps. H. Bowman.
- 2022–2023 “Persistent homology, zigzags, and sparsifications.” Group comps. L. Camp, S. Hiken, J. Lin, O. Surdutovich.
- 2023 “Introduction to category theory and applications.” Comps. J. Misplon.
- “Error processing for linear block codes.” Comps. L. Maitland.
- 2022–2023 “Arithmetic topology and configurations on cubic surfaces.” Group comps. B. Boehnke, D. Krakaur, J. Martens.

Campus and Department Talks

- 2026 “AI, equity, and bias.” *Whose Future?*, Carleton College.
- “Topology of formulas.” *Tour of Math*, Carleton College.
- 2024 “Fractional fractals from finding f-roots.” *Tour of Math*, Carleton College.
- 2023 “Miracles of classical geometry.” *Tour of Math*, Carleton College.
- 2022 “A conversation on belonging.” *Tour of Math*, Carleton College.
- 2021 “Topology of interpolations.” *PPFP Colloquium*, University of California, Irvine.

Service

Mathematical Service

- 2025–Now *FOCUS* Deputy Editor. MAA.
- 2023–Now *FOCUS* Board Member. MAA.
- 2023–2024 Mentor. Big Ideas in Dynamics.
- 2022 Referee for *Math Values*. MAA.

Campus and Departmental Service

- 2026–Now Junior Faculty Affairs Committee, Chair. Carleton College.
- 2022–Now $\int$ BIPOC faculty advisor. Carleton College.
- 2021–Now Justice-Equity-Diversity-Inclusion Coordinator. Carleton College.
- 2025–2026 First Gen Steering Committee. Carleton College.
- 2025 New faculty orientation panelist. Carleton College.
- 2024–2025 Co-organizer, Geometry/Topology Seminar. University of California, Irvine.
- 2023–2024 Cocreator of curriculum for ongoing tutor development (with QRC, MSC). Carleton College.
- Grant review panel, Academic Civic Engagement Co-Creation. Carleton College.
- 2022–2024 Center for Community and Civic Engagement. Carleton College.
- 2021–2024 Liaison and trainer for the Math Skills Center. Carleton College.
- 2021 Imposter syndrome workshop, with Gender Minorities in Mathematics and Statistics. Carleton College.

Academic and Other Service

Positions

- 2021–2022 Mentor. Education for Liberation Minnesota BIPOC Educator Network.
Mentor. Louis Stokes Alliance for Minority Participation.
- 2018–2020 Co-Chair. University of Chicago Labor Council.
Higher Ed Program and Policy Committee. American Federation of Teachers.
- 2017–2020 Co-President. Graduate Students United.

Panels and Workshops

- 2026 Defending and Supporting Our Communities. Joint Mathematics Meetings. (Panelist)
- 2025 Listening and learning. Inclusive Graduate Education Network. (Panelist)
- 2024 Culturally responsive and cognitively demanding informal mathematics tasks. American Institute of Mathematics. (Speaker)
Innovative Pedagogy in Geometry and Topology. Oberlin College. (Speaker)
- 2022 100kin10: Cultivating Belonging and Identity in HS STEM. Orange County Department of Education. (Facilitator)
Workshop on Rehumanizing Mathematics. Park City Mathematics Institute. (Speaker)
Graduate Student Labor Unions. paraDIGMS Spring Conference. (Panelist)
- 2021 Ethnic Studies for Educators. Cuesta College. (Panelist)