Eric K. Larson

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Providence, RI USA — Last Updated: January 31, 2023

EMPLOYMENT

2021 –	Assistant Professor, Brown University
2020 – 2021	Assistant Professor, University of Washington in Seattle
2018 – 2020	Szego Assistant Professor and NSF Postdoctoral fellow, Stanford University

EDUCATION

2013 – 2018	Ph.D. Pure Mathematics, Massachusetts Institute of Technology Advisor: Joe Harris (Harvard University)
2009 – 2013	A.B. Mathematics, Harvard University, summa cum laude

SELECTED AWARDS AND GRANTS

2022 – 2025	NSF Standard Grant DMS-2200641: "The Geometry of Curves in Projective Space via Degeneration and Deformation", $224,838
2019	Hertz Foundation thesis prize, $5,000
2018 – 2022	NSF Mathematical Sciences Postdoctoral Research Fellowship DMS-1802908, $150,000
2014	AMS-MAA-SIAM Morgan Prize, $1,200
2013 – 2018	Hertz Foundation Graduate Fellowship
2013 – 2018	NDSEG Graduate Fellowship
2012	Putnam fellow
2009	Intel Science Talent Search 2009 first place, $100,000
2009	Siemens Competition second place, $50,000
2009	International Math Olympiad, gold medal

PREPRINTS[1]

23. The minimal resolution conjecture for points on general curves (with Gavril Farkas), submitted. `arXiv:2209.11308`

22. Stability of Tschirnhausen Bundles (with Izzet Coskun and Isabel Vogt), submitted. `arXiv:2207.07257`

21. The normal bundle of a general canonical curve of genus at least 7 is semistable (with Izzet Coskun and Isabel Vogt), submitted. `arXiv:2203.13211`

20. Interpolation for Brill–Noether curves (with Isabel Vogt), submitted. `arXiv:2201.09445`

19. Global Brill–Noether theory over the Hurwitz space (with Hannah Larson and Isabel Vogt), submitted. `arXiv:2008.10765`

18. The Maximal Rank Conjecture, submitted. `arXiv:1711.04906`

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[1]The standard in mathematics is that authors are listed alphabetically and all authors are presumed to have made equal contributions.

Referreed Publications / In Press[1]

17. Constructing reducible Brill–Noether curves. To appear in *Documenta Mathematica*. `arXiv:1603.02301`

16. Constructing reducible Brill–Noether curves II. To appear in *Manuscripta Mathematica*. `arXiv:1711.02752`

15. Stability of normal bundles of space curves (with Izzet Coskun and Isabel Vogt). *Algebra Number Theory* 16 (2022), no. 4, 919–953. `arXiv:2003.02964`

14. The generality of a section of a curve. *J. Lond. Math. Soc. (2)* 104 (2021), no. 2, 886–925. `arXiv:1605.06185`

13. Interpolation for curves in projective space with bounded error. *Int. Math. Res. Not. IMRN* 2021, no. 15, 11426–11451. `arXiv:1711.01729`

12. Interpolation for Brill–Noether curves in $\mathbb{P}^4$ (with Isabel Vogt). *Eur. J. Math.* 7 (2021), no. 1, 235–271. `arXiv:1708.00028`

11. The integral Chow ring of $\overline{M}_2$. *Algebr. Geom.* 8 (2021), no. 3, 286–318. `arXiv:1904.08081`

10. The maximal rank conjecture for sections of curves. *J. Algebra* 555 (2020), 223–245.

9. Interpolation for normal bundles of general curves (with Atanas Atanasov and David Yang). *Mem. Amer. Math. Soc.* 257 (2019), no. 1234, v+105 pp. `arXiv:1509.01724`

8. Interpolation for restricted tangent bundles of general curves. *Algebra Number Theory* 10 (2016), no. 4, 931–938. `arXiv:1511.04480`

7. Integrality properties of the CM-values of certain weak Maass forms (with Larry Rolen). *Forum Math.* 27 (2015), no. 2, 961–972. `arXiv:1107.4114`

6. Determinants of subquotients of Galois representations associated with abelian varieties (with Dmitry Vaintrob and with an appendix by Brian Conrad). *J. Inst. Math. Jussieu* 13 (2014), no. 3, 517–559. `arXiv:1110.0255`

5. On the surjectivity of Galois representations associated to elliptic curves over number fields (with Dmitry Vaintrob). *Bull. Lond. Math. Soc.* 46 (2014), no. 1, 197–209. `arXiv:1204.0046`

4. Upper bounds for the number of number fields with alternating Galois group (with Larry Rolen). *Proc. Amer. Math. Soc.* 141 (2013), no. 2, 499–503. `arXiv:1107.1182`

3. Progress towards counting D_5 quintic fields (with Larry Rolen). *Involve 5* (2012), no. 1, 91–97. `arXiv:1107.4111`

2. The DNA inequality in non-convex regions. *Adv. Geom.* 10 (2010), no. 2, 221–248. `arXiv:0801.1929`

1. On the classification of certain fusion categories (with David Jordan). *J. Noncommut. Geom.* 3 (2009), no. 3, 481–499. `arXiv:0812.1603`

Computer Programs

1. Galois Representations for Elliptic Curves over Number Fields, Sage release 5.11

EXPOSITORY ARTICLES

2. Making accessible documents using LaTeX (with Isabel Vogt). To appear in *Notices Amer. Math. Soc.*

1. Degenerations of Curves in Projective Space and the Maximal Rank Conjecture. `arXiv: 1809.05980`

INVITED CONFERENCE TALKS

2022 Recent Advances in Classical Algebraic Geometry, ICM satellite conference (invited talk)
UIC Workshop on Specialization Techniques
AMS special session on Moduli in Algebraic and Tropical Geometry
2020 (*cancelled*) EPIGA conference, IHP Paris
2019 Brill–Noether theory: geometric, tropical and singularity theory aspects, Berlin
I-70 Algebraic Geometry Symposium
FRG Workshop on Moduli Spaces, UIC
2018 Algebraic Geometry Northeastern Series (AGNES)
Algebraic Geometry near-Boston Conference:
        Recent progress on the Maximal Rank Conjecture
2016 Conference in Algebra and Number Theory, Brown University
Birthday Conference for Arkady Vaintrob
2015 AIM Workshop on Degenerations in Algebraic Geometry

INVITED SEMINAR TALKS

2022 University of Michigan Algebraic Geometry Seminar
Brown Algebraic Geometry Seminar
Harvard-MIT Algebraic Geometry Seminar
Brown Algebraic Geometry Seminar
2021 Brown Algebraic Geometry Seminar
UIC Algebraic Geometry Seminar
2020 University of Washington Algebraic Geometry Seminar
SF State Algebra-Geometry-Combinatorics Seminar
2019 Duke Algebraic Geometry Seminar
University of Oregon Algebra Seminar
University of Oregon Algebra Seminar
University of Washington Colloquium
2018 UIC Colloquium
Berkeley Algebraic Geometry Seminar
UC Davis Algebraic Geometry Seminar
Stanford Algebraic Geometry Seminar
Harvard/MIT Algebraic Geometry Seminar
2017 Stony Brook Algebraic Geometry Seminar
UIC Algebraic Geometry Seminar
University of Chicago Algebraic Geometry Seminar
Brown Algebraic Geometry Seminar

	2016	Princeton Algebraic Geometry Seminar
	2015	Yale Algebraic Geometry Seminar
	2014	Harvard/MIT Algebraic Geometry Seminar
	2010	Rutgers University Lie Group/ Quantum Math Seminar
	2008	University of Oregon Geometric-Analysis Seminar

TEACHING

BROWN UNIVERSITY, Assistant Professor (tenure-track)

Fall	2022	Math 2050: Algebraic Geometry
		Undergraduate reading supervisor: Tyler Lane on Intersection Theory
Summer	2022	Undergraduate research supervisor: Luke Choi
Spring	2021	Math 1580: Cryptography
Fall	2021	Math 1530: Abstract Algebra

UNIVERSITY OF WASHINGTON, Assistant Professor (tenure-track)

Spring	2021	Math 308: Matrix Algebra with Applications

STANFORD UNIVERSITY, Assistant Professor (postdoc)

Winter	2020	Math 216B: Introduction to algebraic geometry
Fall	2019	Math 245A: Topics in algebraic geometry (geometry of curves in projective space)

MIT, Teaching Assistant (graduate student)

Fall	2015	18.02: undergraduate multivariable calculus

HARVARD UNIVERSITY, Course Assistant (undergraduate student)

Fall	2012	Math 124: undergraduate elementary number theory
Spring	2012	Math 129: undergraduate elementary number theory
Fall	2011	Math 124: undergraduate elementary number theory
Spring	2011	Math 129: undergraduate elementary number theory
Fall	2010	Math 231a: graduate algebraic topology

DEPARTMENT SERVICE

2021 –	Algebraic Geometry Seminar Organizer
	Co-organizers: Dan Abramovich, Brendan Hassett, Isabel Vogt
2021 –	Putnam Supervisor, Brown University
	Co-supervisor for 2021–2022: Jeremy Kahn
2022 – 2023	Colloquium Chair, Brown University
2021 – 2022	Diversity and Inclusion Committee, Brown University
2020 – 2021	Putnam Committee, University of Washington
2020 – 2021	Library Committee, University of Washington
2020	Thesis Committee member for Ben Lim, Stanford University
2020	Area Exam Committee member for Libby Taylor, Stanford University

SERVICE TO THE PROFESSION AND COMMUNITY

2022	Conference Organizer: AGNES Summer School on Higher Dimensional Moduli
	Co-organizers: Dan Abramovich, Melody Chan, Brendan Hassett, Isabel Vogt
2021	Instructor, Math Olympiad Program
2022 –	Math Reviews contributor
2021 –	Professional Membership: American Mathematical Society
2011 –	Referee for 13 papers at: *Albanian J. Math.*, *Arch. Math.*, *Asian J. Math.*, *Canad. Math. Bull.*, *Eur. J. Math.*, *Glasg. Math. J.*, *J. Pure Appl. Algebra*, *Manuscripta Math.*, *Proc. Amer. Math. Soc.*, *Res. Number Theory*, and *Trans. Amer. Math. Soc.*