# Anthony Várilly-Alvarado

#### Curriculum Vitae December 2023

Department of Mathematics Rice University, MS 136 6100 Main St. Houston, TX 77005

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# Employment

2009-	Rice University, Houston, TX
	Professor of Mathematics, 2019–present
	Associate Professor of Mathematics, 2016–2019
	Assistant Professor of Mathematics, 2012–2016
	G. C. Evans Instructor, 2009–2012 (mentor : Brendan Hassett)
2012 (Fall)	École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

# Postdoctoral Researcher

Harvard University, Cambridge, MA

#### **Visiting Appointments**

2023 (Spring.)	) Simons Laufer Mathematical Sciences Institute (formerly MSRI), Berkeley, CA
	Research Professor in the program Diophantine Geometry
2019 (Sum.)	Universität Bonn, Bonn, Germany
	Academic Guest (Daniel Huybrechts)
2019 (May)	Institute Henri Poincaré, Paris, France
	Participant in the program À la Redécouverte des Points Rationnels
2016 (April)	Pacific Institute for the Mathematical Sciences, SFU, Burnaby, Canada
	Distinguished Visitor
2012 (Sum.)	Centre Interfacultaire Bernoulli, EPFL, Lausanne, Switzerland
	Academic Guest
2007 (Sum.)	IRMAR, Université de Rennes 1, Rennes, France
	Marie Curie Early-stage Researcher
Education	
2009	University of California at Berkeley, Berkeley, CA
	Ph.D. in Mathematics (advisor : Bjorn Poonen)
2004	University of Cambridge, Cambridge, UK
	Certificate of Advanced Study in Mathematics with distinction

# Grants

2003

2023-2028	Howard Hughes Medical Institute (co-PI, \$2,500,000) : Driving Change Grant
2023-2026	NSF grant DMS-2302231 (sole PI, \$380,000) : Probabilistic Approaches to Brauer Groups and
	Rationality Problems
2022-2025	NSF grant DMS-2200721 (co-PI, \$448,399) : Conference: Southwest Conference of Arithmetic
	Geometry
2019-2023	NSF grant DMS-1902274 (sole PI, \$360,000) : Level structures on K3 surfaces, and constrained
	rational points on log Fano varieties
2018-2023	NSF grant DMS-1745670 (co-PI, \$1,997,027) : RTG Building Communities in the Mathematical
	Sciences at Rice University
2014-2019	NSF CAREER grant DMS-1352291 (sole PI, \$405,090) : Arithmetic of Surfaces
2012-2018	NSF grant DMS-1148609 (co-PI, \$1,627,723) : RTG Analysis, Geometry, and Topology at Rice
	University
2011-2015	NSF grant DMS-1103659 (sole PI \$101 149) · Algebraic surfaces · Rational points and Cox rings

A.B. Mathematics magna cum laude (senior thesis advisors: Benedict Gross & Frank Calegari)

2011–2012 NSF grant DMS-1101618 (PI, \$14,700) : Texas Algebraic Geometry Symposium

### **Honors and Awards**

2023	Rice University Faculty Award for Excellence in Research, Teaching, and Service		
	(awarded to one faculty member university-wide per year)		
2023	Wiess School of Natural Sciences: Exemplary Faculty Award		
	(awarded to one faculty member in the Wiess school of Natural Sciences per year)		
2021	Fellow of the American Mathematical Society		
2020	AMS Invited Address, Joint Mathematics Meetings		
2020	George R. Brown Award for Superior Teaching, Rice University (2016, 2018, 2020)		
2017	Faculty Fellow, Center for Teaching Excellence, Rice University (2017-2023)		
2013	Sophia Meyer Farb Prize for Teaching, Phi Beta Kappa, Rice University		
2009	Nikki Kose Memorial Teaching Prize, Mathematics Department, UC Berkeley		
2007	Outstanding Graduate Student Instructor Award recipient, UC Berkeley		
2003-2004	Herchel Smith Fellowship for study at Emmanuel College, Cambridge University		
2004	Herman Peries Prize, for excellent performance in Part III of the Mathematical Tripos		
2003	Phi Beta Kappa		
2001-2002	Derek Bok Center Certificate of Distinction in Teaching, Harvard University (awarded 4 times		
2003	Blumberg Creative Science Prize (undergraduate thesis award; Mather House)		
2000	The Key Innovator Award for research using The Geometer's Sketchpad.		

# Publications

# **Research Articles**

- 1. Reduction of Brauer classes on K3 surfaces, rationality and derived equivalence (w/ S. Frei and B. Hassett) *Journal für die reine und angewandte Mathematik* (Crelle), **792** (2022), 289–305.
- 2. Explicit quasi-hyperbolicity of nodal surfaces via symmetric differentials (w/ N. Bruin, J. Thomas) *Algebra & Number Theory*, **16** (2022), 1377–1405.
- 3. Locally recoverable codes from algebraic surfaces (w/ C. Salgado, F. Voloch) *IEEE Transactions on Information Theory*, **69** (2021), 5765–5777.
- 4. The Geometric Disposition of Diophantine Equations *Notices of the American Mathematical Society*, **68** (2021), 1291–1300.
- Campana points of bounded height on vector group compactifications (w/ M. Pieropan, A. Smeets, S. Tanimoto)

Proceedings of the London Mathematical Society (relaunched), 123 (2021) 57–101.

- 6. Odd-torsion obstructions to the Hasse principle on general K3 surfaces (w/ J. Berg) *Mathematics of Computation*, **89** (2020), 1395–1416.
- 7. Cubic fourfolds fibered in sextic del Pezzo surfaces (w/ N. Addington, B. Hassett, Yu. Tschinkel) *American Journal of Mathematics*, **141** (2019), 1479–1500.
- 8. Kodaira dimension of moduli of special cubic fourfolds (w/ S. Tanimoto) Journal für die reine und angewandte Mathematik (Crelle), **752** (2019), 265–300.
- Campana points, Vojta's conjecture, and level structures on semistable abelian varieties. (w/ D. Abramovich) Journal de Théorie des Nombres de Bordeaux, 30 (2018), 525–532.
- 10. Level structures on abelian varieties, Kodaira dimensions, and Lang's conjecture (w/ D. Abramovich) *Advances in Mathematics*, **329** (2018), 523–540
- 11. Abelian *n*-division fields of elliptic curves and Brauer groups of product Kummer & abelian surfaces (w/ B. Viray)
  Forum of Mathematics, Sigma, 5 (2017), e26, 42, doi:10.1017/fms.2017.16
  Consistent large 8 (2020) = (0, 4, bit 10.1017/fms.2020.42)

Corrigendum: 8 (2020), e60, 4, doi:10.1017/fms.2020.42

- Locally recoverable codes from algebraic curves and surfaces (w/ A. Barg, K. Haymaker, E. Howe, G. Matthews) *Algebraic Geometry for Coding Theory and Cryptography* (E. Howe, K. Lauter, and J. Walker eds.), *Association for Women in Mathematics* 9, Springer (2017), 95–127.
- Level structures on abelian varieties and Vojta's conjecture (w/ D. Abramovich; Appendix by K. Madapusi-Pera) Compositio Mathematica, 153 (2017), 373–394.
- Brauer groups on K3 surfaces and arithmetic applications (w/ K. McKinnie, J. Sawon and S. Tanimoto) Brauer groups and obstruction problems: moduli spaces and arithmetic (A. Auel, B. Hassett, A. Várilly-Alvarado, and B. Viray eds.), Progress in Mathematics 320, Birkhäuser (2017), 177–218.
- Arithmetic of K3 surfaces (Notes for the 2015 Arizona Winter School) Geometry over nonclosed Fields, (F. Bogomolov, B. Hassett and Y. Tschinkel eds.), Simons Symposia 5, Springer (2017), 197–248.
- 16. Kodaira Dimension of certain orthogonal modular varieties *Oberwolfach Reports* **12** (2015), 1835–1837.
- 17. Smooth compactifications of certain normic bundles (w/ B. Viray) *European Journal of Mathematics* **1** (2015), 250–259.
- On the unirationality of del Pezzo surfaces of degree two (w/ C. Salgado and D. Testa) Journal of the London Mathematical Society 90 (2014), 121–139.
- 19. Arithmetic of del Pezzo surfaces of degree 4 and vertical Brauer groups (w/ B. Viray) *Advances in Mathematics* **255** (2014), 153–181.
- Cubic fourfolds containing a plane and a quintic del Pezzo surface (w/ A. Auel, M. Bernardara, and M. Bolognesi) Algebraic Geometry 1 (2014), 181–193.
- 21. Failure of the Hasse principle on general K3 surfaces (w/ B. Hassett) Journal de l'Institut de Mathématiques de Jussieu 12 (2013), 853–877.
- Arithmetic of del Pezzo surfaces Birational geometry, rational curves, and arithmetic, (F. Bogomolov, B. Hassett and Y. Tschinkel eds.) Simons Symposia 1, Springer (2013), 293–319.
- Higher dimensional analogues of Châtelet surfaces (w/ B. Viray) Bulletin of the London Mathematical Society 44 (2012), 125–135. Corrigendum: 47 (2015), 217–218.
- 24. Density of rational points on isotrivial rational elliptic surfaces *Algebra & Number Theory* **5** (2011), 659–690.
- 25. Transcendental obstructions to weak approximation on general *K*3 surfaces (w/ B. Hassett and P. Varilly) *Advances in Mathematics* **228** (2011), 1377–1404.
- 26. Failure of the Hasse principle for Enriques surfaces (w/ B. Viray) *Advances in Mathematics* **226** (2011), 4884–4901.
- 27. Laurent polynomials and Eulerian numbers (w/ D. Erman and G. G. Smith) *Journal of Combinatorial Theory Series A* **118** (2011), 396–402.
- 28. Big rational surfaces (w/ D. Testa and M. Velasco) *Mathematische Annalen* **351** (2011), 95–107.
- 29. Cox rings of degree one del Pezzo surfaces (w/ D. Testa and M. Velasco) Algebra & Number Theory **3** (2009), 729–761.
- 30. Arithmetic *E*<sub>8</sub>-lattices with maximal Galois action (w/ D. Zywina) *LMS Journal of Computation and Mathematics* **12** (2009), 144–165.

- 31. Arithmetic of del Pezzo surfaces of degree 1 *Ph. D. Thesis*, UC Berkeley (2009)
- 32. Weak approximation on del Pezzo surfaces of degree 1 Advances in Mathematics **219** (2008), no. 6, 2123–2145.
- 33. Location of incenters and Fermat points in variable triangles *Mathematics Magazine* **74** (2001), 123–129.

#### Books

 Brauer groups and obstruction problems: moduli spaces and arithmetic (A. Auel, B. Hassett, A. Várilly-Alvarado, B. Viray eds.) *Progress in Mathematics* 320, Birkhäuser, 2017.

#### Essays

- 35. Mentoring for tenure-track interviews *Notices of the American Mathematical Society*, **67** (2020), 1568–1570.
- 36. Testimonios: Stories of Latinx and Hispanic Mathematicians *AMS/MAA Classroom Resource Materials* **67** (2021), 235–248.

#### Preprints

- 37. Superficies racionales sobre un cuerpo (w/ D. Testa) Notes for a course in AGRA IV (Análisis, grupos, y aritmética): https://math.rice.edu/~av15/Files/NotasAGRA.pdf
- Reconstruction of generic anisotropic stiffness tensors from partial data around one polarization (w/ M. V. de Hoop, J. Ilmavirta and M. Lassas) Submitted, arXiv:2307.03312

#### Graduate Students and Post-doctoral faculty

#### Postdocs, career mentor

- 2022–2023 Emily McMillon (RTG Lovett Instructor)
- 2022–2023 Kenneth Chiu (Lovett Instructor)
- 2019–2022 Sarah Frei (RTG Lovett Instructor)
- 2018–2019 Daniel Hast (G. C. Evans Instructor)
- 2016–2019 Jennifer Berg (RTG Instructor)
- 2016–2019 Anastassia Etropolski (RTG Instructor)
- 2015–2018 John Calabrese (NSF Post-doctoral Fellow and G. C. Evans Instructor)
- 2015–2017 Ye Luo (G. C. Evans Instructor)
- 2014–2017 Richard Shadrach (G. C. Evans Instructor)
- 2012–2015 Sho Tanimoto (G. C. Evans Instructor)

#### Graduate students, primary advisor

- 2022– Olivia del Guercio
- 2021– Isaiah Mindich
- 2019– Zachary Spaulding (Ph.D. expected 2024; first position : TBD)
- 2022–2023 Hunter Sarnelli (M.A. 2023)
- 2019–2023 Kenneth Zheng (Ph.D. 2023; first position : Booz Allen Hamilton)
- 2018–2022 Austen James (Ph.D. 2022; first position : Flexport)
- 2015–2022 Stephen Wolff (Ph.D. 2022; first position : TBD)
- 2019–2020 Chloe Zhang (M.A. 2020)
- 2016–2020 Jack Petok (Ph.D. 2020; first position : Dartmouth College)
- 2014–2019 Alexis Johnson (Ph.D. 2019; first position : University of Minnesota Twin Cities)
- 2013–2018 Masahiro Nakahara (Ph.D. 2018; first position : EPSRC postdoc, University of Manchester)

#### Ph. D. Thesis committees

- 2023 Harshit Yadav (Rice; advised by Chelsea Walton)
- 2022 Nicholas Rouse (Rice; advised by Alan Reid)
- 2020 Rosa Winter (Universiteit Leiden; advised by Ronald van Luijk)

- 2018 Javier Carvajal-Rojas (University of Utah; advised by Karl Schwede)
- 2018 Tschijnmo Tschau (Rice Chemistry; advised by Gustavo Scuseria)
- 2016 Dino Festi (Leiden / Milano; advised by Ronald van Luijk / Bert van Geemen)
- 2016 Derek Allums (Rice; advised by Brendan Hassett)
- 2016 Jennifer Berg (UT Austin; advised by Felipe Voloch)
- 2015 Natalie Durgin (Rice; advised by Brendan Hassett)
- 2015 Nikita Kozin (Rice; advised by Brendan Hassett)
- 2013 René Pannekoek (Universiteit Leiden; advised by Ronald van Luijk)

#### Master's Thesis committees

- 2024 David Mis (Rice Computational Mathematics and Operations Research; advised by Maarten de Hoop)
- 2019 Yang Zhang (Rice Computer Science; advised by Ron Goldman)
- 2014 José Dario Bastidas Olaya (Universidad de los Andes; advised by Mauricio Velasco)

#### **Advanced Exam Committee**

- 2023 Jacob Kesten
- 2022 Fernando Liu López
- 2019 Nicholas Rouse
- 2016 Javier Carvajal-Rojas (University of Utah)
- 2014 Kuan-Wen Lai
- 2013 Derek Allums
- 2010 Letao Zhang

#### Service to the Rice University Mathematics Department

- 2023– Research Faculty Appointments Committee
- 2023– Teaching Faculty Appointments Committee
- 2023– Student Equity Committee
- 2013– Algebra qualifying exam
- 2020– Graduate Ombudsperson
- 2021–2022 Appointments commitee
- Spring 2022 Acting Department Chair
- 2020–2021 Evans post-doctoral hiring commitee (chair)
- 2019–2020 Graduate commitee
- 2015–2020 Appointments commitee (chair 2019–2020)
- 2016–2020 Graduate admissions commitee (chair)
- 2018–2020 Committee on Diversity
- 2015–2016 Evans post-doctoral hiring commitee
- 2014 (Fall) Calculus Coordinator
- 2012–2015 Graduate admissions commitee (co-chair 2012–2013; chair 2013–2015)
- 2012–2013 Evans post-doctoral hiring committee.
- 2010–2012 Colloquium commitee (chair 2011–2012)
- 2009–2012 Computer committee.

#### Service to Rice University

- 2023– Dean of Undergraduates Review Committee (chair)
- 2023– Wiess School of Natural Sciences DEI Committee
- 2020– Office of Undergraduate Research and Inquiry Faculty Advisory Committee
- 2020–2022 University Promotion & Tenure Committee
- 2016–2022 Faculty Advisory Board for the Program for Writing & Communication (chair 2019–2022)
- 2020–2021 Search Committee for the Dean of Natural Sciences
- 2019–2021 Faculty Advisory Board for the Doerr Institute for New Leaders
- 2017–2018 Search Committee for the Dean of Undergraduates
- 2015–2016 University Committee on Examinations and Standing
- 2014–2015 University Committee for Faculty & Staff Benefits
- 2013–2014 President's Lecture Series Committee

- 2013–2014 First Year Mentor for an O-week group, McMurtry College
- 2010– Faculty Associate, McMurtry College

### Service to the Community

- 2015–2022 Founder and Director, Patterns, Math & You (program for middle school students)
- 2013 Lecture to Math Club at Lanier Middle School, Houston.
- 2019 Enhancement Panel member at the 2019 Tapia Camps
- 2017 Presented two enhancement lectures to high-school students in the Tapia Computer Science Camp
- 2016 Presentation aimed at the Houston community at the Rice Science Café
- 2015 Presented enhancement lecture to high-school students in the Tapia Math–Science Scholars Program
- 2013 Presented lecture to mathematics high-school students and teachers at the Rice University Mathematics Tournament
- 2012 Presented lecture to mathematics high-school students at the British School of Costa Rica
- 2010 Presented lecture to mathematics high-school teachers at the Mathematics Leadership Institute

# Service to the Profession

# **Professional Committees**

- 2024– AWM-AMS Noether Lecture Selection Committee, representative for the AMS
- 2023– Committee on Committees, American Mathematical Society
- 2022– Centennial Fellowship Committee (Chair), American Mathematical Society
- 2019– Advisory Board, Arizona Winter School
- 2020 NSF DMS Committee of Visitors Review
- 2019–2022 Mathematical Sciences Institutes Diversity Initiatives, Leadership Team
- 2019–2021 AMS Council representative to the Board of Directors of the Canadian Mathematical Society
- 2018–2021 Committee on Science Policy, American Mathematical Society.
- 2018–2021 Council of the American Mathematical Society; elected member at large.
- 2017–2020 Human Resources Advisory Committee, Mathematical Sciences Research Institute (MSRI).

# **Editorial Work**

2020-	Communications in Algebra, associate editor.
2021-	Essential Number Theory, associate editor.

# **Conference Organizer**

07.2025	Latinx in the Mathematical Sciences; IPAM (co-organizers: S. Bañuelos, A. Salerno.)
03.2025	Arizona Winter School 2025: Topic TBA
10.2023	Preliminary Arizona Winter School 2023: Abelian Varieties (organizers: A. Bucur, R. Bell, A.
	Várilly-Alvarado, with support from: B. Levin, I. Vogt, H. Xue, and D. Zureick-Brown)
03.2023	Arizona Winter School 2023: Unlikely Intersections (organizers: A. Bucur, A. Várilly-Alvarado,
	and D. Zureick-Brown, with support from: H. Xue, B. Levin)
10.2022	Preliminary Arizona Winter School 2022: Heights and Model Theory (organizers: R. Bell, I. Vogt,
	H. Xue, with support from: A. Bucur, B. Levin, A. Várilly-Alvarado, and D. Zureick-Brown)
10.2022	Texas Algebraic Geometry Symposium 2022 (co-organizers: G. Pearlstein, F. Sottile)
07.2022	Latinx in the Mathematical Sciences; IPAM (co-organizers: R. Bañuelos, S. Bañuelos, P. Harris, M.
	Vázquez)
04.2020	Texas Algebraic Geometry Symposium 2020 (co-organizers: S. Frei—Cancelled due to COVID-19)
01.2020	JMM 2020 Special Session : Rational Points on Algebraic Verieties: Theory and Computation (co-
	organizers: B. Hassett and A. Sutherland)
11.2019	Gulf Coast Undergraduate Research Symposium: Math Section; Rice University
05.2018	Birational Geometry and Arithmetic; ICERM (co-organizers: A. Auel, M. Pieropan, S. Tanimoto,
	Y. Tschinkel)
10.2017	Open source computation and algebraic surfaces; Banff International Research Station Workshop
	17w2677 (co-organizers: S. Brandhorst and U. Whitcher)
08.2017	SIAM AG 17 Mini-symposium: Algebraic coding for storage applications (co-organizer: A. Barg)
04.2017	Texas Algebraic Geometry Symposium 2017 (co-organizer: J. Calabrese)

02.2017	RTG meeting: Lectures in Arithmetic Geometry at Rice (co-organizers: J. Berg, A. Etropolski)		
05.2015 Rational Points / Pontos Racionais; IMPA, Rio de Janerio (co-organizers: A. Auel, C			
	Salgado)		
04.2014	Texas Algebraic Geometry Symposium 2014 (co-organizer: B. Hassett)		
02.2013	Brauer groups and obstruction problems: moduli spaces and arithmetic; AIM (co-organizers: A.		
	Auel, B. Hassett, B. Viray)		
04.2011	Texas Algebraic Geometry Symposium 2011 (co-organizers: E. Bullock, B. Hassett)		
Panels			
Various	Panelist for the National Science Foundation: 2015, 2016, 2019, 2022, 2023 (twice).		
04.2023	23 Panelist on Academic Job Applications at MSRI/SLMath		
01.2020	Panelist for AMS Committee on Science Policy (Joint Math Meetings; Moderator: F. Su)		
03 2018	Panal on Carages in Academia at the Lating in the Mathematical Sciences Conference (IPAM: Or		

- 03.2018 Panel on Careers in Academia at the Latinx in the Mathematical Sciences Conference (IPAM; Organizers: E. Goins and W. Velez)
- 11.2017 Panels on Fields of Research at Field of Dreams 2017 Conference (Math Alliance; Moderators: P. Kutzko and S. Hofmann)
- 03.2014 Association for Women in Mathematics panel: negotiating a salary (organizer: K. Vance)

#### Referee

Acta Arithmetica, Advances in Mathematics, Algebra and Number Theory, Algebraic Geometry, Annals of Mathematics, Bulletin of the London Mathematical Society, Canadian Mathematical Bulletin, Central European Journal of Mathematics, Compositio Mathematica, Duke Mathematical Journal, European Journal of Mathematics, International Journal of Number Theory, International Math Research Notices, Inventiones Mathematicae, Journal für die reine und angewandte Mathematik (Crelle), Journal of the American Mathematical Society, Journal of the London Mathematical Society, Journal of the London Mathematical Society, Journal de Théorie de Nombres de Bordeaux, Journal of Pure and Applied Algebra, LMS Journal of Computation and Mathematik, New York Journal of Mathematics, Notices of the American Mathematical Society, Pacific Journal of Mathematics, Proceedings of the American Mathematical Society, SIAM Journal on Applied Algebra and Geometry, Transactions of the American Mathematical Society.

#### Mentor

2023	Faculty mentor at the 'Mentoring in the Mathematical Sciences' workshop.
2018	Faculty mentor at the 'Communicating Mathematics Effectively' workshop.
2009	Post-doctoral assistant for VIGRE-funded Research Experience for Undergraduates on singularities
	of plane curves, Rice University

#### **Invited Lecture Series**

08.2021	Aritmética, Grupos y Análisis (IMPA & ICTP – online)
	Superficies racionales sobre un cuerpo (w/ D. Testa; 5 lectures)
05.2017	Positivity in Arithmetic and Geometry (Orsay, France)
	Level structures on K3 surfaces and abelian varieties (3 lectures)
03.2015	Arizona Winter School (Tucson)
	Arithmetic of K3 Surfaces (4 lectures)
06.2013	Universidad de Costa Rica (San José, Costa Rica)
	El Teorema de Hasse-Minkowski (5 lectures)
07.2012	Centre Interfacultaire Bernoulli (Lausanne, Switzerland)
	Arithmetic of del Pezzo and K3 surfaces (14 lectures)
10.2010	Lorentz Center (Leiden, The Netherlands)
	Arithmetic of del Pezzo surfaces (3 lectures)

#### **Invited Conference Talks**

- 01.2024 Special Session on Arithmetic geometry with a view toward computation, Joint Mathematical Meetings of the AMS (San Francisco)
- 01.2024 Special Session on Advances in Coding Theory, Joint Mathematical Meetings of the AMS (San Francisco)
- 10.2023 Practicum for Undergraduates in Number Theory (IPAM, UCLA)
- 09.2023 Geomathematics Minisymposium, Applied Inverse Problems 2023 (Göttingen, Germany)
- 07.2023 Rational Points 2023 (Schney, Germany)
- 06.2023 Arithmétique, Géométrie, Cryptographie et Théorie des Codes (Plenary Talk; Marseilles, France)
- 05.2023 Arithmetic Geometry & Algebraic Groups at UVA (Charlottesville)
- 02.2023 MAA Golden Section Annual Meeting (Santa Rosa)
- 10.2022 Special session on Geometry and Arithmetic of Hyperkäler Manifolds II, AMS Sectional Meeting (Chattanooga)
- 11.2021 Skorobogatov 60 (Paris, France)
- 06.2021 Geo-mathematical Imaging Group 2021 Project Review (online; Houston)
- 10.2020 Special session on Geometry and Arithmetic of Hyperkäler Manifolds, AMS Sectional Meeting (online)
- 09.2020 II Simposio Interdisciplinario de Ciencias Básicas (online; Costa Rica)
- 01.2020 Math + X Symposium on Inverse Problems and Deep Learning; Rice University (Guanacaste, Costa Rica)
- 01.2020 Joint Mathematics Meetings; American Mathematical Society Invited address (Denver)
- 12.2019 Rational points on higher dimensional varieties (RIMS Kyoto, Japan)
- 06.2019 Rational points on irrational varieties (Paris, France)
- 02.2019 Geometry and Arithmetic of Surfaces (Madison)
- 01.2019 Simons Collaboration on Arithmetic Geometry, Number Theory, and Computation Annual Meeting (Simons Foundation, New York)
- 11.2018 Blackwell–Tapia Conference (ICERM–Brown University, Providence)
- 09.2018 Algebraic Geometry Northeastern Series (AGNES–Brown University, Providence)
- 08.2018 Arithmetic Geometry, Number Theory, and Computation (Massachusetts Institute of Technology, Cambridge)
- 07.2018 Rational Points on Schiermonnikoog (Schiermonnikoog, The Netherlands)
- 05.2018 K3 surfaces and Galois Representations (London, United Kingdom)
- 03.2018 Latinx in the Mathematical Sciences 2018 (IPAM, Los Angeles)
- 11.2017 Rational Points and Zariski Density (Copenhagen, Denmark)
- 09.2017 Special Session on Numbers, Functions, Transcendence, and Geometry, AMS Sectional Meeting (Denton)
- 08.2017 Mini-symposium on Algebraic Coding for Storage Applications, SIAM AG 17 (Atlanta)
- 07.2017 Special Session on Number Theory and Analysis, Mathematical Congress of the Americas 2017 (Montréal, Canada)
- 07.2017 Rational Points 2017 (Schney, Germany)
- 04.2017 Atkin Workshop (UIC, Chicago)
- 03.2017 New Trends in Arithmetic and Geometry of Algebraic Surfaces (Banff, Canada)
- 01.2017 K3 Days (Amsterdam, The Netherlands)
- 11.2016 CA+ (Madison)
- 09.2016 Arithmetic Algebraic Geometry (Bogomolov 70; NYU, New York)
- 10.2015 Georgia Algebraic Geometry Symposium (Emory, Atlanta)
- 10.2015 Explicit methods for modularity of K3 Surfaces and other higher weight motives (ICERM, Providence)
- 07.2015 AMS Summer Institute in Algebraic Geometry (Salt Lake City)
- 07.2015 Explicit Methods in Number Theory (Oberwolfach, Germany)
- 04.2015 Special Session on Arithmetic Geometry, AMS Sectional Meeting (Las Vegas)
- 04.2015 Texas Algebraic Geometry Symposium (College Station)
- 03.2015 Simons Symposium "Geometry over non-closed fields" (Puerto Rico)

- 12.2014 Palmetto Number Theory Series XXIII; Plenary Speaker (PANTS–Columbia, South Carolina)
- 11.2014 K3, Enriques surfaces, and related topics (Nagoya, Japan)
- 07.2014 Frontiers of Rationality (Spitsbergen, Norway)
- 05.2014 Rational and integral points on higher-dimensional varieties (AIM, Palo Alto)
- 03.2014 Special Session on Galois cohomology and the Brauer group, AMS Sectional Meeting (Knoxville)
- 08.2013 SIAM Conference on Applied Algebraic Geometry (Fort Collins)
- 03.2013 New Trends in arithmetic and geometry of algebraic surfaces (CIRM Luminy, France)
- 09.2012 Rational and integral points, with special reference to homogeneous spaces (Beijing, China)
- 07.2012 Summer Workshop in Algebraic and Arithmetic Geometry, (Münich, Germany)
- 02.2012 Simons Symposium "Geometry over non-closed fields" (U. S. Virgin Islands)
- 01.2012 Special Session on Rational Points on Varieties, Joint Mathematical Meetings of the AMS (Boston)
- 05.2011 Ramification in Algebra and Geometry (Atlanta)
- 04.2011 Western Algebraic Geometry Symposium (WAGS–Stanford, Palo Alto)
- 07.2010 Rational Points 3 (Thurnau, Germany)
- 05.2010 Rational Points: Theory & Experiment (Zürich, Switzerland)
- 01.2010 Special Session on Arithmetic Geometry, Joint Mathematical Meetings of the AMS (San Francisco)
- 10.2009 Special Session on Arithmetic Geometry, AMS Sectional Meeting (Boca Raton)
- 04.2009 Counting points on varieties (Leiden, The Netherlands)
- 06.2008 Rational points on curves and higher dimensional varieties (Warwick, UK)

# Seminar and Colloquium Talks

- 12.2023 Emory University, Department Colloquium
- 10.2023 Michigan State University, Department Colloquium
- 07.2023 Nagoya University, Algebraic Geometry Seminar
- 04.2023 Simons Laufer Mathematical Sciences Institute, Member's Seminar
- 03.2023 University of California at Berkeley, Commutative Algebra and Algebraic Geometry Seminar
- 11.2022 University of Pennsylvania, Department Colloquium
- 07.2022 Park City Mathematics Institute, Research Program Seminar
- 06.2022 Simons Collaboration on Arithmetic Geometry, Number Theory, and Computation (online)
- 05.2022 Greek Mathematical Seminar (online)
- 05.2022 Northwestern University, Algebraic Geometry Seminar
- 05.2022 Northwestern University, Causeway Seminar
- 12.2021 Clemson University, Algebra and Discrete Mathematics Seminar (online)
- 10.2021 San Francisco State University, Algebra, Geometry and Combinatorics Seminar (online)
- 06.2021 University of California at Santa Barbara, Geometry and Arithmetic Seminar (online)
- 05.2021 Worldwide, Zoom Algebraic Geometry Seminar (online)
- 05.2021 Carleton University, Department Colloquium (online)
- 04.2021 University of Kentucky, Algebra Seminar (online)
- 04.2021 University of Texas at Austin, Geometry Seminar (online)
- 04.2021 University of Texas at Austin, Distinguished Mathematicians of Color Colloquium Series (online)
- 03.2021 VaNTAGe-virtual seminar on open conjectures in number theory and arithmetic geometry (online)
- 03.2021 Bay Area Mathematical Adventures, invited talk (online)
- 03.2021 Shanghai Center for Mathematical Science, Algebraic Geometry Seminar (online)
- 03.2021 Seminario Latinoamericano de Teoría de Números (online–in Spanish)
- 01.2021 University of Washington, Number Theory Seminar (online)
- 12.2020 Cornell University, Algebraic Geometry and Representation Theory Seminar (online)
- 10.2020 Webinario FUNDAPROMAT (online–in Spanish)
- 08.2020 Cibercoloquio Latinoamericano de Matemáticas (online-in Spanish)
- 06.2020 Simon Fraser University, Quarantined Number Theory and Algebraic Geometry Seminar (online)
- 05.2020 University of Warwick, Algebraic Geometry Seminar (online)
- 04.2020 University of South Carolina, Department Colloquium (Cancelled due to COVID-19)
- 03.2020 University of California at Berkeley, Arithmetic Geometry and Number Theory Seminar
- 02.2020 University of Georgia, Algebraic Geometry Seminar
- 04.2018 University of Chicago, Number Theory Seminar

04.2018 Northwestern University, Number Theory Seminar 04.2018 Amherst College, Department Math Talk 03.2018 Bowdoin College, Math Student Seminar 03.2018 Bates College, Department Math Talk 02.2018 New York University, Algebraic Geometry Seminar 02.2018 Dartmouth College, Department Colloquium 02.2018 Max Planck Institute for Mathematics, Seminar Algebraic Geometry (SAG) 03.2017 Yale University, Algebraic and Tropical Geometry Seminar 11.2016 University of Houston, Complex Geometry Seminar University of Washington, UW-PIMS Colloquium 04.2016 04.2016 University of Washington, Number Theory Seminar 04.2016 Simon Fraser University, CRG Abelian Varieties Multi-site Seminar 04.2016 Simon Fraser University, PIMS-SFU Colloquium 03.2016 Brown University, Algebra Seminar University of Virginia, Department Colloquium 03.2016 03.2016 University of Utah, Algebraic Geometry Seminar 02.2016 Sam Houston State University, Department Colloquium 02.2016 Stony Brook University, Algebraic Geometry Seminar 02.2016 University of Oregon, Number Theory Seminar 02.2016 University of Oregon, Department Colloquium 12.2015 Wesleyan University, Department Colloquium 10.2015 University of Texas at Austin, Number Theory Seminar 09.2015 Rice University, Department Colloquium 05.2015 Universidade Federal do Rio de Janeiro, Algebra Seminar 04.2015 Stanford University, Number Theory Seminar 02.2015 Boston College, Number Theory & Algebraic Geometry Seminar Queen's University, Algebraic Geometry Seminar 01.2015 09.2014 University of Texas at Austin, Number Theory Seminar Joint IMPA/UFRJ/UFF Colóquio de Geometria e Aritmética, Rio de Janeiro 04.2014 04.2014 Texas A & M University, Algebraic Geometry Seminar 02.2014 Universidad de los Andes, Department Colloquium University of North Carolina at Chapel Hill, Arithmetic Geometry Seminar 10.2013 10.2013 University of Wisconsin, Number Theory Seminar University of Washington, Algebraic Geometry Seminar 05.2013 04.2013 University of Houston, Complex Geometry Seminar 01.2013 Texas Christian University, Department Colloquium 01.2013 Rice University, Department Colloquium 12.2012 Humboldt Universität zu Berlin, Forschungsseminar Arithmetische Geometrie 12.2012 Leibnitz Universität Hannover, Algebraic and Arithmetic Geometry Seminar 12.2012 University of Warwick, Algebraic Geometry Seminar 11.2012 University of Bristol and Heilbronn Institute, Number Theory Seminar 10.2012 Centre Interfacultaire Bernoulli (École Polytechnique Fédéral de Lausanne), RatPAC Seminar Universidad de Costa Rica, Department Colloquium 06.2012 05.2012 University of Texas at Austin, Number Theory Seminar 04.2012 Texas A & M University, Number Theory Seminar 04.2012 Joint Columbia/CUNY/NYU Number Theory Seminar 02.2012 Michigan State University, Department Colloquium 01.2012 University of Alberta, Department Colloquium 01.2012 Colorado State University, Department Colloquium University of North Carolina at Chapel Hill, Department Colloquium 01.2012 01.2012 University of Illinois at Urbana-Champaign, Department Colloquium 01.2012 University of Notre Dame, Department Colloquium 11.2011 Rice University, Department Colloquium 10.2011 California Institute of Technology, Algebraic Geometry Seminar

- 05.2011 Brown University, Algebra Seminar
- 02.2011 University of Wisconsin Madison, Number Theory Seminar
- 02.2011 University of Wisconsin Madison, Algebraic Geometry Seminar
- 09.2010 Rice University, Algebraic Geometry Seminar
- 09.2009 Rice University, Algebraic Geometry Seminar
- 09.2009 Texas A&M University, Algebraic Geometry Seminar
- 08.2009 Rice University, Department Colloquium
- 02.2009 Emory University, Algebra Seminar
- 11.2008 Massachusetts Institute of Technology, Number Theory Seminar
- 06.2008 École Normale Supérieur, Séminaire variétés rationnelles
- 11.2007 Brown University, Algebraic Geometry Seminar
- 10.2007 Boston University, Algebra Seminar
- 06.2007 Université de Rennes 1 (IRMAR), Séminaire de géométrie algébrique
- 04.2007 UC Berkeley, Number Theory Seminar
- 11.2006 UC Berkeley, Number Theory Seminar

### Teaching

**Rice University** 

	Average teaching evaluation score: 1.187/5 (1 = "Outstanding"; 1082 students)
2024, Spring	Math 567 : Foundations of Algebraic Geometry
2023, Fall	Math 354 : Honors Linear Algebra
2022, Fall	Math 463/563 : Advanced Algebra I
2021, Spring	Math 464/564 : Advanced Algebra II
2020, Fall	Math 567 : Topics in Algebraic Geometry : Rational Points on Varieties
2020, Fall	Math 102 : Single Variable Calculus II
2019, Fall	Math 354 : Honors Linear Algebra
2019, Fall	Math 463/563 : Rings, Modules, and Galois Theory
2019, Spring	Math 464/564 : Commutative and homological algebra
2017, Fall	Math 376 : Algebraic Geometry
2017, Fall	Math 354 : Honors Linear Algebra
2016, Fall	Math 463/563 : Rings, Modules, and Galois Theory
2016, Fall	Math 354 : Honors Linear Algebra
2015, Fall	Math 354 : Honors Linear Algebra
2014, Fall	Math 567 : Topics in Algebraic Geometry : Arithmetic of Elliptic Curves
2014, Fall	Math 101 : Single Variable Calculus I
2014, Spring	Math 466/566 : Algebraic Number Theory
2013, Fall	Math 463/563 : Rings, Modules, and Galois Theory
2013, Spring	Math 464/564 : Commutative and homological algebra
2012, Spring	Math 102 : Single Variable Calculus II
2011, Fall	Math 101 : Single Variable Calculus I
2011, Fall	Math 365 : Number Theory
2011, Spring	Math 567 : Topics in Algebraic Geometry: Algebraic Surfaces
2011, Spring	Math 102 : Single Variable Calculus II
2010, Fall	Math 373 : Elliptic Curves
2010, Spring	Math 112 : Calculus and its applications
2010, Spring	Math 464 : Commutative and homological algebra
2009, Fall	Math 101 : Single Variable Calculus I

# University of California at Berkeley

		Average teaching evaluation score: 6.8/7 (7 = "Excellent"; 221 students)
2009, S	pring	Math 300 : Teaching Workshop for graduate student instructors (Lecturer)
2008, F	Fall	Math 300 : Teaching Workshop for graduate student instructors (Assistant)
2008, S	Summer	Math 115 : Introduction to Number Theory (Lecturer)
2008, S	pring	Math 74 : Transition to Upper Division Mathematics (Lecturer)
2007, S	pring	Math 1b : Calculus in One Variable II (Professional Development Program)
2006, F	Fall	Math 1a : Calculus in One Variable I (Professional Development Program)
2005, F	Fall	Math 53 : Multivariable Calculus (Graduate Student Instructor)
2005, S	pring	Math 1b : Calculus in One Variable II (Graduate Student Instructor)
2004, F	Fall	Math 1a : Calculus in One Variable I (Graduate Student Instructor)
Harvard Un	iversity	
2003, S	pring	Math 123 : Abstract Algebra II (Course Assistant)
2002, F	Fall	Math 113 : Complex Analysis (Course Assistant)
2002, S	pring	Math 112 : Real Analysis (Course Assistant)
2001, F	Fall	Math 25a : Honors Advanced Multivariable Calculus (Course Assistant)
2001, S	pring	Math 21a : Multivariable Calculus (Course Assistant)
2000, F	Fall	Math 21a : Multivariable Calculus (Course Assistant)