

Academic Positions

UC Irvine

Associate Professor & Chancellor's Fellow

2024 - Pres.

UC Irvine

Assistant Professor

2021 - 2024

Princeton University

Instructor & NSF Postdoctoral Fellow

Fall 2018 - Spring 2021

Mathematical Sciences Research Institute – Berkeley, CA

Postdoc Research Member

Spring 2019

Massachusetts Institute of Technology

NSF Postdoctoral Fellow

Fall 2017- Spring 2018

Visiting Positions

University of Sydney & University of New South Wales

Visiting Researcher at the Sydney Mathematical Research Institute

8/22 - 9/22

Education

Brown University

Ph.D. Mathematics

2017

Stony Brook University

B.S. Mathematics

2012

Publications and Preprints

22. Boundedness results for families of non-canonically polarized projective varieties. (with Behrouz Taji). *Submitted*.
21. Moduli of boundary polarized Calabi-Yau pairs. (with Dori Bejleri, Harold Blum, Kristin DeVleming, Giovanni Inchiostro, Yuchen Liu, and Xiaowei Wang). *Submitted*.
20. Wall crossing for moduli of stable log varieties (with Dori Bejleri, Giovanni Inchiostro, and Zsolt Patakfalvi). **Annals of Mathematics**, (2) 198(2): 825-866 (2023).
19. K-stability and birational models of moduli of quartic K3 surfaces (with Kristin DeVleming and Yuchen Liu). **Inventiones Mathematicae**, 232(2023), no.2, 471–552.
18. Smoothability of relative stable maps to stacky curves (with Dori Bejleri), **Épjournal de Géométrie Algébrique**, Vol 7, February 2023.
17. Moduli of curves on a quadric surface and K3 surfaces (with Kristin DeVleming and Yuchen Liu). **Journal of the Institute of Mathematics of Jussieu**, 22(2023), no.3, 1251–1291.
16. Hyperbolicity of varieties of log general type (with Amos Turchet). **Arithmetic geometry of logarithmic pairs and hyperbolicity of moduli spaces – hyperbolicity in Montréal**, 197-247, CRM Short Courses, Springer, Cham, 2020.

15. Moduli of double covers and degree one del Pezzo surfaces (with Dori Bejleri). **European Journal of Mathematics**, 7, 557-569 (2021).
14. Wall crossings for K-moduli spaces of plane curves (with Kristin DeVleming and Yuchen Liu). **Proceedings of the London Mathematical Society**, *To appear*.
13. Compact moduli of elliptic K3 surfaces (with Dori Bejleri). **Geometry & Topology**, 27(5):1891–1946, 2023. .
12. The Erdős-Ulam problem, Lang’s conjecture, and uniformity (with Lucas Braune and Amos Turchet). **Bulletin of the London Mathematical Society**, 52 issue 6, 1053-1063 (2020).
11. Hyperbolicity and uniformity of varieties of log general type (with Kristin DeVleming and Amos Turchet). **International Mathematics Research Notices**, Vol 2022, 4, 2532-2581 (2022).
10. Moduli of degree one del Pezzo surfaces (with Dori Bejleri). **Mathematische Annalen**, 384, 1-31 (2022).
9. Enumerating Hassett’s wall and chamber decomposition of the moduli space of weighted stable curves (with Connor Dubé, Daniel Gershenson, Elaine Hou) **Experimental Mathematics**, Vol 29 (2020) 36-53.
8. Moduli of weighted stable elliptic surfaces and invariance of log plurigenera (with Dori Bejleri). **Proceedings of the London Mathematical Society**, 122: 617-677 (2021).
7. Moduli of fibered surface pairs from twisted stable maps (with Dori Bejleri). **Mathematische Annalen** Vol 374 (2019) 1007-1032.
6. Log canonical models of elliptic surfaces (with Dori Bejleri). **Advances in Mathematics** Vol 320 (2017) 210-243.
5. Bounding heights uniformly in families of hyperbolic varieties (with Ariyan Javanpeykar). **New York Journal of Mathematics** Volume 23 (2017) 1791-1808.
4. A generic slice of the moduli space of line arrangements (with Patricio Gallardo). **Algebra and Number Theory**, 12-4 (2018), 751–778.
3. A fibered power theorem for varieties of log general type (with Amos Turchet). **Algebra and Number Theory**, 10-7 (2016), 1581–1600.
2. Twisted derived equivalence and rational points on K3 surfaces (with K. Dasaratha, A. Perry, R. Zhou). **Brauer groups and obstruction problems: Moduli and arithmetic**.
1. Logarithmic stable toric varieties and their moduli (with Sam Molcho). **Algebraic Geometry** (3) 2016, 296-319.

Grants

2024 - Present: UCI Chancellor’s Fellowship

2023 - Present: NSF grant DMS-2302550

2020 - Present: NSF grant DMS-2140781 (formerly DMS-2001408)

2017 - 2020: NSF Postdoctoral Fellowship

Conference Talks

2024:

- Moduli of K-trivial varieties, Institute for Basic Science, Daejeon – Korea (Feb)

2023:

- Fano varieties, their geometry and moduli, KIAS – Korea (Oct).
- Western Algebraic Geometry Symposium (WAGS), University of Washington – Seattle (Apr).
- Special month on birational geometry and singularities, University of Michigan (May).
- Arithmetic, Birational Geometry, and Moduli Spaces at Brown University (June).
- International Conference on Rationality and Hyperbolicity at Notre Dame (June).

2022:

- Oppenheim Lecture 2022 @ National University of Singapore – Recent Progress in Algebraic Geometry supporting lecture for Caucher Birkar.

2021:

- Geometry via arithmetic Banff

2020:

- Geometry and Arithmetic of Algebraic Varieties (AMS sectional) @ Penn State University (Online)

2019:

- Fall 2019 Algebraic Geometry Northeastern Series (AGNES) @ Boston College
- Topics on Nevanlinna Theory and Complex Hyperbolicities @ Shanghai Center for Mathematical Sciences at Fudan University [China]
- Discrete groups and moduli @ Nagoya University [Japan]
- Diophantine Approximation and Value Distribution Theory @ UQAM [Montreal, Canada]
- Arithmetic geometry and its connections (AMS sectional) @ University of Hawaii

2018:

- Special session on algebraic geometry (AMS sectional) @ Portland State Univ.
- Workshop on algebraic surfaces and related topics @ Xiamen University [China]

2016:

- Moduli of Curves workshop @ CIMAT [Guanajuato, Mexico]

2015:

- Workshop on Higher Dimensional Algebraic Geometry @ IMPA [Brazil]

Invited Lecture Series / Minicourses

2021: AGNES goes to school (virtual, mini-course on hyperbolicity in algebraic geometry)

2018: Geometry & arithmetic of orbifolds @ UQAM [Montreal, Canada] (Dec. 2018) – Minicourse on hyperbolicity and birational geometry of log pairs

Seminar Talks

2024:

- Università degli Studi Roma Tre (Rome, Italy) Geometry Seminar (May)
- University of Maryland – College Park Algebraic Geometry Seminar (Mar)
- UC Irvine Graduate seminar (Feb)

2023:

- UCSD algebraic geometry seminar (Nov)
- UCLA algebraic geometry seminar (Mar)
- University of Washington – Seattle algebraic geometry seminar (Mar).

2022:

- UC Santa Barbara Geometry & Arithmetic seminar (May)
- UC Irvine Differential Geometry Seminar (Mar)
- Utah Algebraic Geometry seminar (Mar)

2021:

- UC Davis algebraic geometry seminar
- ZAG (Zoom algebraic geometry) seminar
- Unicamp (Brazil) AG seminar

2020:

- University of Illinois – Chicago, Algebraic Geometry Seminar (Feb)

2019:

- Northwestern Algebraic Geometry Seminar (April)

2018:

- Princeton Algebraic Geometry Seminar (September)
- UCLA Algebra Seminar (June)
- UC Santa Barbara Algebraic Geometry Seminar (June)
- Stony Brook Algebraic Geometry Seminar (April)

2017:

- University of Massachusetts (Amherst) Algebraic Geometry Seminar (Nov.)
- UC San Diego Algebraic Geometry Seminar (Nov.)
- University of Washington (Seattle) Algebra Seminar (Oct.)
- Washington University (St. Louis) Algebraic Geometry Seminar (Sep.)
- Princeton University Algebraic Geometry Seminar (Feb.)
- Yale Algebraic Geometry Seminar (Jan.)
- Brown Algebraic Geometry Seminar (Jan.)

2016:

- New York University Algebraic Geometry Seminar (Nov.)
- Harvard/MIT Algebraic Geometry Seminar (Nov.)
- Yale Number Theory Seminar (Nov.)
- University of Washington (Seattle) Algebra Seminar (Oct.)
- EPFL (Lausanne) Algebraic Geometry Seminar (Sep.)

2015:

- University of Georgia Algebraic Geometry Seminar (Oct.)
- Brown University Algebraic Geometry Seminar (Oct.)
- Chalmers University (Sweden) Algebraic Geometry Seminar (Mar.)

Colloquium Talks

1. Smith Colloquium at University of Kansas (Apr 2024)
2. SMRI (Sydney Math Research Institute at Uni. of Sydney) What is...? Seminar (Aug 2022)
3. University of New South Wales Pure Maths Seminar (Sydney, Australia – Aug 2022)
4. UC Irvine (Jan 2020)
5. Rice University (Dec 2019)

Mentoring

Summer 2017: SUMRY (Summer Research for Yale Undergraduates) Mentor – Mentored 3 Yale Undergraduates on an algebraic geometry research project. (resulted in a published paper in **Exper. Math.**) One student now in the math Ph.D. program at UC Berkeley

Winter 24: Reading course in algebraic geometry with an undergraduate

Outreach Activities

Feb 2024: Guest lecturer at MATHCOUNTS – gave public lecture to Orange County middle school students and their teachers/parents

Jan 2023: EmpowHer – led a two hour hands on math activity for predominantly Latinx women at Godinez High School in Santa Ana.

Jan 2022 - Present : Faculty Mentor for Math CEO high school program – outreach to underserved communities in Southern California (e.g. Valley High School in Santa Ana)

Mar 2022: Orange County Science & Engineering Fair Judge (Final round, Math and related fields)

Mar 2022: Orange County Science & Engineering Fair Judge (Seniors, Math & Computers division)

Fall 2021: Coffee with undergrads participant

Summer 2018, 2019: Special lecturer for the SIMUW program at the University of Washington (high school summer math program)

2014-2017: Brown Math CoOp (discuss, prepare, and deliver presentations on mathematics and their applications for K-12 students in the Boston & Providence area).

Conference Organization

June 2023: Arithmetic, Birational Geometry, and Moduli Spaces @ Brown University

February 2023: Explicit higher dimensional moduli @ Banff

Fall 2018: Organizer of Workshop in algebraic geometry @ Princeton

2016-2018: Co-organizer BATMOBYLE conference (Brown & Yale Tropical Geometry)

Service

Fall 21, Winter 24: Coffee/Lunch with a Math Professor

Fall 23 / Winter 24: Applied & Computational Math BS Task Force

Fall 23: Advancement Committee Member (Yuxiang Yao)

Fall 23: Algebra Qualifying exam committee member

Summer 23: Algebra qualifying exam committee member

Winter 23: Advancement Committee Member (Anubhav Nanavaty)

Fall 22: Advancement Committee Member (Maureen Zhang)

Spring 22: Algebra qualifying exam committee member

Spring 22: Thesis Committee Member (Alex Sutherland)

Spring 22: Thesis Reader (David Villalobos Paz – Princeton)

Spring 22: Advancement Committee Member (Yasmeen Baki)

Spring 22: Advancement Committee Member (Ashley Shade)

F22 - S 23: UC Irvine Department of Mathematics Presidential Postdoctoral Fellow committee

F 22 - S 23: UC Irvine Department of Mathematics outreach committee

F 21 - S 22: UC Irvine Department of Mathematics inclusive excellence committee

F 21 - S 22: UC Irvine Department of Mathematics Grad studies committee

F 21: Algebra qualifying exam committee member

2013-2016: Cofounder and officer of AMS Graduate Student Chapter @ Brown University

2013-2016: Sheridan Center Certificates I & IV, (Certified Brown University Teaching Consultant)

Awards

2019: Stony Brook University Honors College Commencement Speaker & Alumni Recognition Award

2017: Joukowsky Outstanding Dissertation Prize (Given to 1 PhD graduate in the physical sciences)

2017: Outstanding Teaching Award – Brown Department of Mathematics

Last updated: September 20, 2024