

JENNIFER LI

Curriculum Vitae

Address:

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EMPLOYMENT

Princeton University

Mathematics Postdoctoral Research Associate
Instructor of Mathematics

Jul. 2024-current
Sep. 2021-Jun. 2024

RESEARCH AREA

Algebraic Geometry

EDUCATION

University of Massachusetts, Amherst

Ph.D., Mathematics

Sep. 2015-May 2021

Thesis: *A cone conjecture for log Calabi-Yau surfaces*

Mar. 26, 2021 (Defense)

Advisor: Paul Hacking

Louisiana State University

M.S., Mathematics

Aug. 2013-May 2015

University of Michigan, Ann Arbor, MI

Ph.D. candidate, Computer Science

Sep. 2011-May 2012

Louisiana State University

B.A., Mathematics and B.S., Computer Science

Aug. 2007-May 2011

PAPERS

- Weighted projective degenerations of \mathbb{P}^n (with K. DeVleming, S. Torres). Arxiv2606.21660.
- Deformations of fibered Calabi-Yau varieties (with B. Bakker, K. DeVleming, S. Filipazzi, R. Laza, R. Svaldi, C. Wang, J. Zhao). Arxiv2604.14024. Submitted.
- Weighted surfaces with maximal Picard number (with L. Esser). Arxiv2506.14037. Submitted.
- Complexity one varieties are cluster type (with J. Enwright, J. Yáñez). Arxiv2504.17369.
- The Mordell-Schinzal conjecture for cubic Diophantine equations (with J. Kollár). Arxiv2412.12080. Submitted.

- Hypersurfaces with large automorphism groups (with L. Esser). *Trans. Amer. Math. Soc.* 378 (2025), no. 5, 3667-3698.
- On the cone conjecture for log Calabi-Yau mirrors of Fano 3-folds. Arxiv2310.02962. Submitted.
- Rational surfaces with a non-arithmetic automorphism group (with S. Torres). *Bull. Lond. Math. Soc.* (2024), 56: 3895-3904.
- A cone conjecture for log Calabi-Yau surfaces. *Forum Math. Sigma* 13 (2025), p. e15.
- Automorphisms of $K3$ surfaces (with R. Bell, P. Comparin, A. Rincón-Hidalgo, A. Sarti, A. Zanardini). *Journal of Pure and Applied Algebra*, Vol.228, Issue 4, 2024.
- A cone conjecture for log Calabi-Yau surfaces, 2021, UMass Amherst Scholarworks, Doctoral Dissertations.

AWARDS, SCHOLARSHIPS, AND FUNDING

NSF summer research funding (PI: Paul Hacking)	<i>Summers 2018, 2019, 2020</i>
UMass Amherst Math Department Fellowship	<i>Fall 2015</i>
LA-STEM Undergraduate Research Scholarship	<i>Fall 2007-Spring 2011</i>
Louisiana Taylor Opportunity for Students Award	<i>Fall 2007-Spring 2011</i>
LSU Chancellor's Aid: Work-Study Scholarship	<i>Fall 2007-Spring 2011</i>
LSU Centennial Scholarship	<i>Fall 2007-Spring 2011</i>

INVITED TALKS

Joint Mathematics Meetings Special Session on Moduli of Surfaces	<i>Jan. 6, 2026</i>
Joint Columbia-CUNY-NYU Number Theory Seminar, at NYU Courant Institute	<i>Oct. 30, 2025</i>
University of Washington Algebra and Algebraic Geometry Seminar	<i>Oct. 14, 2025</i>
Brown University Algebraic Geometry Seminar	<i>Jun. 2, 2025</i>
Northwestern University Algebraic Geometry Seminar	<i>May 30, 2025</i>
UPenn Algebraic Geometry Seminar	<i>Dec. 2, 2024</i>
The University of Maryland Algebraic Geometry Seminar	<i>Nov. 25, 2024</i>
UIUC Algebraic Geometry Seminar	<i>Nov. 4, 2024</i>
The Kinosaki Symposium	<i>Oct. 23, 2024</i>
The University of Tokyo Algebraic Geometry Seminar	<i>Oct. 18, 2024</i>
The University of Tokyo Graduate Algebraic Geometry Seminar	<i>Oct. 17, 2024</i>
AIM Workshop: Higher dimensional log Calabi-Yau pairs	<i>Oct. 5, 2024</i>
Joaquín Moraga's Birational Algebraic Geometry Seminar (virtual)	<i>Jun. 28, 2024</i>
Fordham University Math Department Colloquium	<i>Apr. 17, 2024</i>
The University of Nottingham Algebraic Geometry Seminar (virtual)	<i>Nov. 30, 2023</i>
Joaquín Moraga's Birational Algebraic Geometry Seminar (virtual)	<i>Nov. 24, 2023</i>
Johns Hopkins University Algebraic Geometry Seminar	<i>Sep. 12, 2023</i>
Women and Math Program at IAS	<i>May 24, 2023</i>

University of Utah Algebraic Geometry Seminar	<i>Mar. 14, 2023</i>
Brown University Algebraic Geometry Seminar	<i>Oct. 7, 2022</i>
Purdue University Algebraic Geometry Seminar (virtual)	<i>Oct. 5, 2022</i>
Stability and Moduli at the Simons Center, Stony Brook University	<i>Aug. 22, 2022</i>
Columbia Algebraic Geometry Seminar	<i>Apr. 22, 2022</i>
JMM: AMS-AWM Special Session on Women in Algebraic Geometry	<i>Apr. 8, 2022</i>
ECOS-ANID Workshop (virtual)	<i>Jul. 19-20, 2021</i>
University of Connecticut Algebra Seminar (virtual)	<i>Apr. 28, 2021</i>
Princeton Algebraic Geometry Seminar (virtual)	<i>Apr. 27, 2021</i>
Boston College Algebraic Geometry and Number Theory Seminar (virtual)	<i>Apr. 1, 2021</i>

PREPRINT AND LEARNING SEMINAR TALKS

Abstracts and notes for some talks are posted at <https://web.math.princeton.edu/~j15270/>

Talks on papers by others

- By Araujo, Corti, and Massarenti: Birational geometry of Calabi-Yau pairs and 3-dimensional cremona transformations, Princeton preprint seminar *Sep. 30, 2025*
- By Oguiso from Jan. 9, 2024: Fibered Calabi-Yau threefolds with relative automorphisms of positive entropy and c_2 -contractions, Princeton preprint seminar *Apr. 2, 2024*
- By Stenger and Xie from May 17, 2023: Cone of divisors on P^3 blown up at eight very general points, Princeton preprint seminar *Nov. 21, 2023*
- By Oguiso from Nov. 15, 2021: A counterexample of Morrison's cone conjecture for a strict Calabi-Yau 3-fold, Princeton preprint seminar *Feb. 7, 2023*
- By P.M.H. Wilson from Apr. 29, 2022: The topology of Calabi-Yau 3-folds, Princeton preprint seminar *Sep. 27, 2022*
- By Hoff and Stenger from Nov. 26, 2021: On the numerical dimension of Calabi-Yau 3-folds of Picard number two, Princeton preprint seminar *Feb. 22, 2022*
- By Felten, Petracci, Robins from Sep. 1, 2021: Deformations of log Calabi-Yau pairs can be obstructed, Princeton preprint seminar *Oct. 26, 2021*
- By Dinh, Oguiso, and Yu from Jun. 10, 2021: Smooth complex projective rational surfaces with infinitely many real forms, Princeton preprint seminar (virtual) *Aug. 10, 2021*

Learning seminar talks

- Weighted projective degenerations of \mathbb{P}^n (joint work in progress with Kristin DeVleming and Sebastián Torres), Princeton Noetherian Ring *Nov. 19, 2025*
- Baily-Borel and toroidal compactifications, SRI (Summer Research Institute) Bootcamp reading group (virtual) *Oct. 16, 2025*
- An introduction to weighted projective spaces, UW Algebra and Algebraic Geometry Seminar Pretalk *Oct. 14, 2025*
- An overview of the proof in Birkar-Cascini-Hacon-McKernan, Princeton MMP Learning Seminar *Sep. 17, 2021*

- A cone conjecture for log Calabi-Yau surfaces, Princeton Noetherian Ring *Dec. 10, 2021*
- Hurwitz numbers and monodromy representations, GRASS (graduate student seminar) at UMass Amherst (virtual) *Apr. 16, 2021*
- Automorphisms of $K3$ Surfaces, ICERM Women in Algebraic Geometry Workshop *Jul. 31, 2020*
- 10-minute research talks on The Kawamata-Morrison-Totaro cone conjecture
ICERM *Jul. 30, 2020*
- New Facets conference at University of Michigan *Oct. 18, 2019*
- Brown University *Sep. 21, 2018*
- Elliptic fibrations of a $K3$ surface, UMass algebraic geometry reading seminar *Nov. 8, 2019*
- The cone theorem for smooth projective varieties, UMass algebraic geometry reading seminar *Apr. 19, 2019*
- The ample cone of a $K3$ surface, UMass algebraic geometry reading seminar *Dec. 7, 2018*
- Moduli of weighted marked points on curves of genus zero, UMass grad student seminar *Nov. 2, 2018*
- Symplectic toric manifolds and Delzant polytopes *May 4, 2018*
- Classification of Gorenstein Fano toric varieties, MIT *Feb. 17, 2018*
- Toric surface singularities and their resolutions, UMass algebraic geometry reading seminar *Mar. 9, 2018*
- Du Val singularities, UMass algebraic geometry reading seminar *Nov. 30, 2017*
- Toric varieties as quotients of affine space, UMass Amherst *Apr. 17, 2017*
- The Riemann-Hurwitz formula, UMass algebraic geometry reading seminar *Feb. 8, 2016*
- Quadratic reciprocity, LSU *May 8, 2015*
- Winding numbers and the Fundamental Theorem of Algebra, LSU *Apr. 29, 2014*

POSTER PRESENTATIONS

On the cone conjecture for log Calabi-Yau mirrors of Fano 3-folds

- Higher Dimensional Algebraic Geometry Celebrating James McKernan's 60th *Jan. 9, 2024*

Rational surfaces with a non-arithmetic automorphism group

- AGNES (Algebraic Geometry Northeastern Series) at UPenn *Oct. 14, 2023*

On the cone conjecture for log Calabi-Yau 3-folds

- Arithmetic, Birational Geometry, and Moduli Spaces at Brown University *Jun. 12-16, 2023*
- MPS Higher Dimensional Geometry at the Simons Center NYC *Oct. 24, 2022*
- AGNES at UMass Amherst *Nov. 18, 2022*

A cone conjecture for log Calabi-Yau surfaces

- MPS Higher Dimensional Geometry at the Simons Center NYC *Feb. 24, 2022*
- Special Month on Singularities and K -Stability at University of Utah (virtual) *Jun. 10-11, 2021*
- AGNES at Stony Brook University (virtual) *Oct. 24, 2020*

The Kawamata-Morrison-Totaro cone conjecture for log Calabi-Yau surfaces

- Arithmetic and Algebraic Geometry Conference at the University of Michigan *Aug. 5, 2019*
- Ideals, Varieties, and Algorithms: a Celebration of the Influence of David Cox *Jun. 11, 2019*
- AWM Research Symposium at Rice University *Apr. 6, 2019*
- AGNES (Algebraic Geometry Northeastern Series) at UMass Amherst *Mar. 23, 2019*
- MSRI: Birational Geometry, Moduli Spaces, and Derived Categories Workshop *Jan. 29, 2019*

WORKSHOPS, SUMMER SCHOOLS, AND CONFERENCES

Workshops and Summer Schools

- SRI (Summer Research Institute) Bootcamp *Jul. 8-12, 2025*
- AIM Workshop: Higher Du Bois and higher rational singularities *Oct. 28-30, 2024*
- AIM Workshop: Higher dimensional log Calabi-Yau pairs *Sep. 30-Oct. 4, 2024*
- AGGITatE 2024: Workshop on Moduli Theory at the University of Essex *Jul. 22-26, 2024*
- The Stacks Project Workshop at the University of Michigan *Aug. 7-11, 2023*
- ICERM Women in Algebraic Geometry Workshop (virtual) *Aug. 27-Jul. 31, 2020*
- MSRI Workshop: Derived AG, Birational Geometry, Moduli Spaces *Jan. 31-Feb. 8, 2019*
- Graduate Workshop in AG for Women and Minority Genders, at Harvard and MIT *Feb. 27-18, 2018*
- MSRI Geometry and Analysis Summer Graduate School *Jul. 28-Aug. 8, 2014*

Conferences

- Forty Years of Higher Dimensional Geometry at Princeton University *Jun. 8-12, 2026*
- AGNES at Rutgers University *May 1-3, 2026*
- A Tour Through Algebraic Geometry Celebrating Alessio Corti's 60th, Cortona, Italy *Sep. 15-19, 2025*
- SRI in Algebraic Geometry *Jul. 14-18, 2025*
- AGNES at Boston College *Mar. 15-17, 2024*
- Higher Dimensional Algebraic Geometry Celebrating James McKernan's 60th, UCSD *Jan. 10-14, 2024*
- MPS Higher Dimensional Geometry at the Simons Center NYC *Oct. 25-27, 2023*
- AGNES at UPenn *Oct. 13-15, 2023*
- 100 Years Noetherian Rings Conference, IAS *Jun. 19-23, 2023*
- Arithmetic, Birational Geometry, and Moduli Spaces at Brown University *Jun. 12-16, 2023*
- FRG Special Month in Ann Arbor *May 25-28, 2023*
- MPS Higher Dimensional Geometry at the Simons Center, Stony Brook University *May 8-12, 2023*
- Explicit Moduli Problems in Higher Dimensions at Banff *Feb. 26-Mar. 3, 2023*
- AGNES at UMass Amherst *Nov. 18-20, 2022*
- MPS Higher Dimensional Geometry at the Simons Center NYC *Oct. 24-28, 2022*
- Stability and Moduli at the Simons Center, Stony Brook *Aug. 22-26, 2022*
- JAMI: Higher Dimensional Algebraic Geometry at Johns Hopkins University *May 3-8, 2022*
- AMS Joint Mathematics Meeting in Seattle (virtual) *Apr. 6-8, 2022*
- MPS Higher Dimensional Geometry at the Simons Center NYC *Feb. 23-25, 2022*
- ECOS-ANID Workshop (virtual) *Jul. 19 - 20, 2021*

- Special Month on Singularities and K -Stability at University of Utah (virtual) *May 17-Jun. 11, 2021*
- Western Algebraic Geometry Symposium (virtual) *Apr. 23-24, 2021*
- AGNES at Stony Brook (virtual) *Oct. 23-25, 2020*
- Facets of Algebraic Geometry at University of Michigan *Oct. 19-20, 2019*
- New Facets Algebraic Geometry Conference at University of Michigan *Oct. 18, 2019*
- AGNES at Boston College *Sep. 20-22, 2019*
- Arithmetic and Algebraic Geometry Conference at the University of Michigan *Aug. 5-9, 2019*
- Ideals, Varieties, and Applications: a Celebration of David Cox, at Amherst College *Jun. 10-14, 2019*
- BATMOBYLE (Bi-annual Algebraic and Tropical Meetings of Brown and Yale) *May 2, 2019*
- AWM Research Symposium at Rice University *Apr. 6-7, 2019*
- AGNES at UMass Amherst *Mar. 22-24, 2019*
- Symposium Celebrating the Mathematical Work of David Mumford, at Harvard *Aug. 20, 2018*
- BATMOBYLE at Yale *Nov. 30, 2018*
- AGNES at Northeastern University *Oct. 13-15, 2017*
- The Georgia Algebraic Geometry Symposium at the University of Georgia *Mar. 3-5, 2017*
- AGNES at UMass Amherst *Nov. 4-6, 2016*
- AGNES at Yale *Apr. 8-10, 2016*
- Discrete Math Days in the Northeast at Smith College *Apr. 30, 2016*
- AGNES at Brown University *Oct. 2-4, 2015*
- BC Northeastern Algebraic Geometry Conference at Northeastern University *Sep. 8, 2015*
- Applications in Automorphic Forms in Number Theory and Combinatorics at LSU *Apr. 12-15, 2014*

CONFERENCE AND SEMINAR ORGANIZATION

Princeton Math Department Colloquium

Fall 2022 - Sp 2023

- Co-organized with Mihalis Dafermos, Casey Kelleher, and Emmy Murphy

American Graduate Student Algebraic Geometry Seminar (AGSAGS) *Fall 2020-Spring 2021*

- Nationwide virtual seminar for graduate students, co-organized with Aline Zanardini, Lena Ji, Samir Canning, and Roberto Albesiano

GRAduate Student Seminar (GRASS)

Fall 2018-Spring 2019

- Graduate seminar at UMass, co-organized with Tori Day, Tetsuya Nakamura, Cristian Rodriguez, Angelica Simonetti, and Sebastian Torres, at UMass Amherst

Two-part Mini Workshop on Algebraic Varieties, Hypergeometric Series, and Modular Forms

Spring 2015

- Research workshop at LSU, co-organized with Luca Candelori, Ling Long, and Robert Perlis

TALKS FOR UNDERGRADUATES

Abstracts and notes for all talks are posted at <https://web.math.princeton.edu/~jl5270/>

Mathematics in Kaleidoscopes *Dec. 4, 2019*

- Undergraduate Math Club at UMass Amherst

Plabic Graphs and the Totally Nonnegative Grassmannian *Feb. 27, 2019*

- Undergraduate Math Club at UMass Amherst

Convex Reflexive Lattice Polygons and the Number 12 *Apr. 18, 2018*

- Undergraduate Math Club at UMass Amherst

Bézout's Theorem *Nov. 30, 2016*

- Undergraduate Math Club at UMass Amherst

An Introduction to SAGE *May 4, 2015*

- Presentation for math summer REU students at LSU

Congruent Numbers and Elliptic Curves *Mar. 2, 2015*

- Undergraduate Math Club at LSU

A Variation on the Four Color Problem *Sep. 21, 2015*

- Presentation for GEAUX (Graduate Education and Acclimation to the University eXperience) Program

COMPUTER SKILLS

Programming Languages

- SAGE: I wrote SAGE scripts to test cases in my thesis
- MATLAB: I wrote MATLAB scripts for my undergraduate research project in Electrical Engineering
- Java: I programmed in this language for my undergraduate coursework

TEACHING

Instructor (asterik*: was course head)

- Multivariable Calculus at Princeton *Spring 2024**, *Fall 2021*
- Linear Algebra and Applications at Princeton *Fall 2023*, *Spring 2023*, *Fall 2022**, *Spring 2022*
- Introduction to Linear Algebra at UMass Amherst *Spring 2021, 2020*; *Fall 2019*
- Calculus II at UMass Amherst *Fall 2020*
- Multivariable Calculus at UMass Amherst *Fall 2018*

Teaching Assistant (Discussion Leader)

- Calculus II at UMass Amherst *Spring 2019, 2017*
- Honors Calculus II at UMass Amherst *Fall 2016*
- Calculus I at UMass Amherst *Fall 2017*, *Spring 2016*, *Fall 2015*
- Calculus I at LSU *Fall 2015*, *Spring 2015*, *Fall 2014*
- Discrete Mathematics at University of Michigan (EECS Department) *Fall 2011*, *Spring 2012*

Grader

- Theory of Numbers at UMass Amherst *Fall 2020, Spring 2019*
- Discrete Structures at UMass Amherst *Spring 2018*

Other

- Leader of the graduate algebra qualifying exam review *Summer 2018, Summer 2019*
- Discrete mathematics and algebra tutor for Tutor.com *Fall 2013-Fall 2014*

MENTORING**Mentor for Princeton Math REU** *Summer 2023*

- Mentored Princeton undergraduate math junior, Cooper Kofron, on Toric Varieties

Mentor for LSU Math REU *Summer 2015*

- Mentored undergraduate math majors from various universities on algebraic varieties, hypergeometric series, and modular forms

LA-STEM Summer Bridge Mentor *Summer 2008*

- Mentored incoming LSU LA-STEM scholars in physics and calculus

COMMUNITY OUTREACH**UIUC AWM Teaching and Diversity Seminar**

- Gave a talk for UIUC math graduate students on my graduate experiences in math *Nov. 5, 2024*

Association for Women in Mathematics

- Managed the UMass Amherst Chapter website *Fall 2016-Fall 2019*
- Managed the LSU Chapter website *Fall 2013-Spring 2015*

Sonia Kovalevsky Day

- Led a workshop on Tessellations with Maggie Smith at Mt. Holyoke College for elementary and middle school students *Nov. 10, 2018*

Girls' Math Day

- Volunteered at a workshop on knot theory for middle school students *May 2, 2015*

PREVIOUS EMPLOYMENT**Undergraduate researcher at Louisiana State University** *Fall 2008-Spring 2010*

- Advisor: Georgios Veronis, LSU Electrical Engineering and Center for Computation and Technology
- Topic: *Design of efficient grating-assisted organic solar cells using computational electromagnetics*
- Summer REU through LASTEM OSI (Office of Strategic Initiatives)
- LSU SURF (Summer Undergraduate Research Forum) Poster Session

Undergraduate Publication

- C. Min, J. Li, G., Veronis, J-Y. Lee, S. Fan, and P. Peumans, Enhancement of optical absorption in thin-film organic solar cells through the excitation of plasmonic modes in metallic gratings, *Applied Physics Letters*, 96, 133302, 2010.

Undergraduate researcher at UC Berkeley

Summer 2009

- Participant in TRUST (Team for Research in Ubiquitous Secure Technology) REU at UC Berkeley
- Poster presentation at UC Berkeley on *Mining Trends in Network Traffic Data*