# JENNIFER LI
*Curriculum Vitae*

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## EMPLOYMENT

**Princeton University**
Mathematics Postdoctoral Research Associate                          *Jul. 2024-current*
Instructor of Mathematics                                            *Sep. 2021-Jun. 2024*

## RESEARCH AREA

**Algebraic Geometry**

## EDUCATION

**University of Massachusetts, Amherst**                             *Sep. 2015-May 2021*
Ph.D., Mathematics
Thesis: *A cone conjecture for log Calabi-Yau surfaces*              *Mar. 26, 2021 (Defense)*
Advisor: Paul Hacking

**Louisiana State University**                                       *Aug. 2013-May 2015*
M.S., Mathematics

**University of Michigan, Ann Arbor, MI**                            *Sep. 2011-May 2012*
Ph.D. candidate, Computer Science

**Louisiana State University**                                       *Aug. 2007-May 2011*
B.A., Mathematics and B.S., Computer Science

## PAPERS

L. Esser, J. Li, Weighted surfaces with maximal Picard number (`https://arxiv.org/pdf/2506.14037`), 2025.

J. Enwright, J. Li, J. Yáñez, Complexity one varieties are cluster type (`https://arxiv.org/pdf/2504.17369`), 2025.

J. Kollár, J. Li, The Mordell-Schinzel conjecture for cubic Diophantine equations (`https://arxiv.org/pdf/2412.12080`), 2024.

L. Esser, J. Li, Hypersurfaces with large automorphism groups (`https://arxiv.org/abs/2405.11666`), 2024, to appear in Transactions of the American Mathematical Society.

J. Li, On the cone conjecture for log Calabi-Yau mirrors of Fano 3-folds (`https://arxiv.org/abs/2310.02962`), 2023, submitted.

J. Li, S. Torres, Rational surfaces with a non-arithmetic automorphism group (`https://arxiv.org/abs/2310.08768`), 2023, The Bulletin of the London Mathematical Society.

J. Li, A cone conjecture for log Calabi-Yau surfaces (`https://arxiv.org/abs/2207.12483`), 2022, to appear in Forum of Mathematics, Sigma.

R. Bell, P. Comparin, J. Li, A. Rincón-Hidalgo, A. Sarti, and A. Zanardini, "Automorphisms of $K3$ surfaces", Journal of Pure and Applied Algebra , Vol.228, Issue 4, April 2024. (`https://www.sciencedirect.com/science/article/abs/pii/S0022404923001998`).

J. Li, A cone conjecture for log Calabi-Yau surfaces (`https://scholarworks.umass.edu/dissertations_2/2194`), 2021, UMass Amherst Scholarworks, Doctoral Dissertations.

## AWARDS, SCHOLARSHIPS, AND FUNDING

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

## INVITED TALKS

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| Brown University Algebraic Geometry Seminar | *Jun. 2, 2025* |
| Northwestern University Algebraic Geometry Seminar | *May 30, 2025* |
| UPenn Algebraic Geometry Seminar | *Dec. 2, 2024* |
| The University of Maryland Algebraic Geometry Seminar | *Nov. 25, 2024* |
| UIUC Algebraic Geometry Seminar | *Nov. 4, 2024* |
| The Kinosaki Symposium | *Oct. 23, 2024* |
| The University of Tokyo Algebraic Geometry Seminar | *Oct. 18, 2024* |
| The University of Tokyo Graduate Algebraic Geometry Seminar | *Oct. 17, 2024* |
| AIM Workshop: Higher dimensional log Calabi-Yau pairs | *Oct. 5, 2024* |
| Joaquín Moraga's Birational Algebraic Geometry Seminar (virtual) | *Jun. 28, 2024* |
| Fordham University Math Department Colloquium | *Apr. 17, 2024* |
| The University of Nottingham Algebraic Geometry Seminar (virtual) | *Nov. 30, 2023* |
| Joaquín Moraga's Birational Algebraic Geometry Seminar (virtual) | *Nov. 24, 2023* |
| Johns Hopkins University Algebraic Geometry Seminar | *Sep. 12, 2023* |
| Women and Math Program at IAS | *May 24, 2023* |
| University of Utah Algebraic Geometry Seminar | *Mar. 14, 2023* |
| Brown University Algebraic Geometry Seminar | *Oct. 7, 2022* |
| Purdue University Algebraic Geometry Seminar (virtual) | *Oct. 5, 2022* |

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| Stability and Moduli at the Simons Center, Stony Brook University | *Aug. 22, 2022* |
| Columbia Algebraic Geometry Seminar | *Apr. 22, 2022* |
| JMM: AMS-AWM Special Session on Women in Algebraic Geometry | *Apr. 8, 2022* |
| ECOS-ANID Workshop (virtual) | *Jul. 19-20, 2021* |
| University of Connecticut Algebra Seminar (virtual) | *Apr. 28, 2021* |
| Princeton Algebraic Geometry Seminar (virtual) | *Apr. 27, 2021* |
| Boston College Algebraic Geometry and Number Theory Seminar (virtual) | *Apr. 1, 2021* |

## PREPRINT AND LEARNING SEMINAR TALKS

Abstracts and notes for some talks are posted at `https://web.math.princeton.edu/~jl5270/`

### Talks on papers by others

· 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 P3 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

· 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
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| 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**

· SRI in Algebraic Geometry *Jul. 14-18, 2025*
· AGNES (Algebraic Geometry Northeastern Series) at Boston College *Mar. 15-17, 2024*
· Higher Dimensional Algebraic Geometry Celebrating James McKernan's 60th *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)

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| · 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)

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| · 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

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

### Other

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| · 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 and postdoc 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*