Justin Lacini

Personal Data

ADDRESS:	Princeton University
	Department of Mathematics
	Fine Hall 320
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CITIZENSHIP:	Albanian, Italian.

Research Interests

- Higher dimensional birational geometry
- Minimal Model Program
- Syzygies and linear series
- Algebraic geometry in positive characteristic

Employment

09/2023 - PRESENT	*Postdoctoral Research Associate* at Princeton University
08/2020 - 05/2023	*Visiting Assistant Professor* at the University of Kansas

Education

AUGUST 2015 - JUNE 2020	*Ph.D in Mathematics*, University of California, San Diego
	Thesis: On rank one log del Pezzo surfaces in characteristic different from two and three
	Advisor: Prof. James McKernan
SEPTEMBER 2010 - JULY 2015	*Diploma in Matematica*, Scuola Normale Superiore di Pisa
JULY 2013 - JULY 2015	*Master of Science in Mathematics*, Università di Pisa
	Thesis: On the essential dimension of central simple algebras
	Advisor: Prof. Angelo Vistoli
	Grade: 110/110 cum laude
SEPTEMBER 2010 - JULY 2013	*Bachelor of Science in Mathematics*, Università di Pisa
	Thesis: Il teorema di Chevalley-Shephard-Todd
	Advisor: Prof. Angelo Vistoli
	Grade: 110/110 cum laude

Awards and Fellowships

August 2015	*James B. Ax Graduate Fellowship*, University of California, San Diego.
September 2010 - July 2015	*Fellow of the Scuola Normale Superiore di Pisa*, Scuola Normale Superiore di Pisa.
May 2010	*Gold Medal* at the Italian National Math Olympiad.
May 2008	*Bronze Medal* at the Italian National Math Olympiad.

Publications

1. *Boundedness of fibers for pluricanonical maps of varieties of general type.* Mathematische Annalen (2023), 385, 693–716. https://doi.org/10.1007/s00208-022-02360-5

2. *On the Kawamata–Viehweg vanishing theorem for log del Pezzo surfaces in positive characteristic.* (joint work with E. Arvidsson and F. Bernasconi) Compositio Mathematica (2022), 158(4), 750-763. https://doi.org/10.1112/S0010437X22007394

Submitted papers

1. *On rank one log del Pezzo surfaces in characteristic different from two and three.* Preprint, available at https://arxiv.org/abs/2005.14544

2. *Logarithmic bounds on Fujita's conjecture.* (joint work with L. Ghidelli) Preprint, available at https://arxiv.org/abs/2107.11705.

3. *Syzygies of adjoint linear series on projective varieties.* (joint work with Purnaprajna Bangere) Preprint, available at https://arxiv.org/abs/2302.02517.

Conference Talks

May 2023	*Syzygies of adjoint linear series on projective varieties*, Higher dimensional geometry (Simons conference at Stony Brook)
October 2022	*Syzygies of adjoint linear series on projective varieties*, KUMUNU (University of Nebraska-Lincoln)
August 2021	*Logarithmic bounds on Fujita's conjecture*, Kansas geometry day (University of Kansas, via Zoom)

Invited Talks

September 2023	*Syzygies of adjoint linear series on projective varieties*, Princeton University
May 2023	*Syzygies of adjoint linear series on projective varieties*, University of Chicago
April 2023	*Syzygies of adjoint linear series on projective varieties*, University of California, San Diego
March 2023	*Syzygies of adjoint linear series on projective varieties*, Harvard/MIT

JANUARY 2023	*Syzygies of adjoint linear series on projective varieties*, Colloquium, Oklahoma State University
JANUARY 2023	*Syzygies of adjoint linear series on projective varieties*, University of Washington
NOVEMBER 2022	*Syzygies of adjoint linear series on projective varieties*, University of Utah
MAY 2022	*Logarithmic bounds on Fujita's conjecture*, University of Chicago (via Zoom)
APRIL 2022	*Logarithmic bounds on Fujita's conjecture*, Northwestern University
APRIL 2022	*Logarithmic bounds on Fujita's conjecture*, École Polytechnique Fédérale de Lausanne (via Zoom)
MARCH 2022	*Logarithmic bounds on Fujita's conjecture*, University of Michigan
OCTOBER 2021	*Logarithmic bounds on Fujita's conjecture*, University of California, San Diego (via Zoom)
OCTOBER 2021	*On pluricanonical maps of varieties of general type*, National Center for Theoretical Sciences in Taipei, Taiwan (via Zoom)
AUGUST 2021	*Logarithmic bounds on Fujita's conjecture*, Princeton University (via Zoom)
MARCH 2021	*On log del Pezzo surfaces in positive characteristic*, Rutgers University (via Zoom)
SEPTEMBER 2020	*Coverings with log canonical centers*, University of Kansas
SEPTEMBER 2020	*On pluricanonical maps of varieties of general type*, University of Kansas
NOVEMBER 2019	*On log del Pezzo surfaces in positive characteristic*, University of California, Los Angeles
OCTOBER 2019	*On pluricanonical maps of varieties of general type*, University of California, San Diego
NOVEMBER 2018	*On log del Pezzo surfaces in positive characteristic*, University of California, San Diego.

Posters

FEBRUARY 2022	*Logarithmic bounds on Fujita's conjecture*, MPS Conference on Higher Dimensional Geometry 2022
NOVEMBER 2019	*On pluricanonical maps of varieties of general type*, WAGS, University of Utah

Conferences attended

MAY 2023	*Algebraic geometry and cohomology in mixed characteristic - an event in honor of Bhargav Bhatt*, Northwestern University
MAY 2023	*Higher dimensional geometry*, Simons conference at Stony Brook
OCTOBER 2022	*KUMUNU*, University of Nebraska-Lincoln
MAY 2022	*JAMI 2022: Higher dimensional algebraic geometry - an event in honor of Prof. Shokurov's 70th Birthday*, Johns Hopkins University
FEBRUARY 2022	*MPS Conference on Higher Dimensional Geometry 2022*, New York
AUGUST 2021	*Kansas geometry day*, University of Kansas (via Zoom)
NOVEMBER 2019	*WAGS*, University of Utah
MAY 2019	*Recent progress in Moduli Theory*, MSRI
APRIL 2019	*WAGS*, University of California, Berkeley
APRIL 2019	*Birational Geometry and Moduli Spaces*, MSRI
JANUARY 2019	*Complex Algebraic Geometry II*, University of California, San Diego
MAY 2018	*Birational Geometry and Arithmetic*, ICERM, Brown University
MARCH 2018	*WAGS*, San Francisco State University
OCTOBER 2017	*WAGS*, University of California, Los Angeles
MAY 2017	*Geometry of Moduli Spaces*, University of California, San Diego
APRIL 2017	*WAGS*, University of British Columbia
OCTOBER 2016	*WAGS*, Colorado State University
JULY 2016	*Higher Dimensional Algebra and Geometry*, University of Utah
FEBRUARY 2016	*Unramified cohomology, derived categories, and rationality*, University of Utah
JANUARY 2016	*Complex Algebraic Geometry I*, University of California, San Diego
JULY 2014	*Second ERC Research Period on Diophantine Geometry*, Scuola Normale Superiore di Pisa

Teaching

Visiting Assistant Professor, University of Kansas

FALL 2022	*Math 220*, Applied differential equations (two sections)
SPRING 2021	*Math 127*, Calculus 3
FALL 2021	*Math 220*, Applied differential equations
SPRING 2021	*Math 220, Math 409, Math 410*, Applied differential equations, Topics in Geometry and History of mathematics
FALL 2020	*Math 116*, Calculus 2

Instructor at the University of California, San Diego

FALL 2017	*Math 3C*, Precalculus

Teaching Assistant at the University of California, San Diego

Fall 2019	*Math 103A, Math 190A*, Modern Algebra I, Foundations of Topology I
Summer Session 2, 2019	*Math 109*, Mathematical Reasoning
Summer Session 1, 2019	*Math 109*, Mathematical Reasoning
Winter 2019	*Math 109*, Mathematical Reasoning
Fall 2018	*Math 20C, Math 100A*, Calculus and Analytic Geometry for Engineering, Abstract Algebra I
Summer Session 2, 2018	*Math 20C*, Calculus and Analytic Geometry for Engineering
Spring 2018	*Math 104C*, Number Theory III
Winter 2018	*Math 104B*, Number Theory II
Summer Session 2, 2017	*Math 18*, Linear Algebra
Summer Session 1, 2017	*Math 20C*, Calculus and Analytic Geometry for Engineering
Spring 2017	*Math 20C*, Calculus and Analytic Geometry for Engineering
Winter 2017	*Math 103B*, Modern Algebra II
Fall 2016	*Math 20C*, Calculus and Analytic Geometry for Engineering
Summer Session 2, 2016	*Math 10C*, Calculus III
Spring 2016	*Math 20C*, Calculus and Analytic Geometry for Engineering
Winter 2016	*Math 20D*, Introduction to Differential Equations
Fall 2015	*Math 20C*, Calculus and Analytic Geometry for Engineering

Service

- Reviewer for Mathematical Reviews and zbMath.

- Referee for Journal of Algebraic Geometry, International Mathematics Research Notices, Mathematische Zeitschrift, Épijournal de Géométrie Algébrique, Pacific Journal of Mathematics, Journal of Algebra, Proceedings of the London Mathematical Society etc.

- Co-organizer of the Geometry seminar at the University of Kansas

- Advisor for the AGNES Summer School on Higher Dimensional Moduli at Brown University (August 2022).

- Mentor of a graduate student group reading Hartshorne's Algebraic Geometry book at the University of Kansas (Fall 2022).

Languages

- Albanian (native)

- Italian (native speaker level)

- English (fluent)