

# Justin Lacini

## PERSONAL DATA

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ADDRESS: University of Kansas  
Department of Mathematics  
643 Snow Hall  
E-MAIL: jlacini@ku.edu  
WEBSITE: <http://people.ku.edu/~j4201166/>  
CITIZENSHIP: Albanian, Italian.

## RESEARCH INTERESTS

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

## EMPLOYMENT

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AUGUST 2020 - PRESENT *Visiting Assistant Professor* at the University of Kansas

## EDUCATION

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AUGUST 2015 - MAY 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's degree 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's degree in Mathematics*, Università di Pisa  
Thesis: Il teorema di Chevalley-Shephard-Todd  
Advisor: Prof. Angelo Vistoli  
Grade: 110/110 cum laude

## AWARDS AND FELLOWSHIPS

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

## PUBLICATIONS

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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

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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

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- 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

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- 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

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- 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

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- 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

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### 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	<i>Math 103A, Math 190A</i> , Modern Algebra I, Foundations of Topology I
SUMMER SESSION 2, 2019	<i>Math 109</i> , Mathematical Reasoning
SUMMER SESSION 1, 2019	<i>Math 109</i> , Mathematical Reasoning
WINTER 2019	<i>Math 109</i> , Mathematical Reasoning
FALL 2018	<i>Math 20C, Math 100A</i> , Calculus and Analytic Geometry for Engineering, Abstract Algebra I
SUMMER SESSION 2, 2018	<i>Math 20C</i> , Calculus and Analytic Geometry for Engineering
SPRING 2018	<i>Math 104C</i> , Number Theory III
WINTER 2018	<i>Math 104B</i> , Number Theory II
SUMMER SESSION 2, 2017	<i>Math 18</i> , Linear Algebra
SUMMER SESSION 1, 2017	<i>Math 20C</i> , Calculus and Analytic Geometry for Engineering
SPRING 2017	<i>Math 20C</i> , Calculus and Analytic Geometry for Engineering
WINTER 2017	<i>Math 103B</i> , Modern Algebra II
FALL 2016	<i>Math 20C</i> , Calculus and Analytic Geometry for Engineering
SUMMER SESSION 2, 2016	<i>Math 10C</i> , Calculus III
SPRING 2016	<i>Math 20C</i> , Calculus and Analytic Geometry for Engineering
WINTER 2016	<i>Math 20D</i> , Introduction to Differential Equations
FALL 2015	<i>Math 20C</i> , Calculus and Analytic Geometry for Engineering

## SERVICE

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- Reviewer for 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.
- 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

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- Albanian (native)
- Italian (native speaker level)
- English (fluent)