

## Javier Reyes Bastidas

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Date of Birth: April 4, 1998.

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### Education

- **2022 - present** PhD in Mathematics, University of Maryland, College Park (UMD).
  - **2020 - 2022**, M.S. in Mathematics, Pontificia Universidad Católica de Chile (PUC Chile). Thesis: “On finding surfaces via  $\mathbb{Q}$ -Gorenstein deformations and its automatization”. Advisor: Giancarlo Urzúa.
  - **2016 - 2019**, B.S. in Mathematics, PUC Chile.
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### Publications and Preprints

- “An exotic  $5\mathbb{R}P^2$  in the 4-sphere” (with Gordana Matić, Ferit Öztürk, András I. Stipsicz, Giancarlo Urzúa), submitted; arXiv:2312.03617.
  - “Exotic Surfaces”, (with Giancarlo Urzúa), to appear in *Mathematische Annalen* (2024); arXiv:2211.13163
  - “Rational configurations in  $K3$  surfaces and simply-connected  $p_g = 1$  surfaces for  $K^2 = 1, 2, 3, 4, 5, 6, 7, 8, 9$ ”, (with Giancarlo Urzúa), *Math. Z.* 302, 2435-2467 (2022); arXiv:2110.10629.
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### Talks at Seminars

- **November 2024**, The moduli of polarized  $K3$ s, RIT on Algebraic Geometry -  $K3$  surfaces, UMD.
  - **October 2024**, Linear series and Reidler’s method, RIT on Algebraic Geometry -  $K3$  surfaces, UMD.
  - **June 2024**, Moduli of weighted stable curves after Hassett - Maryland Informal Moduli Seminar, UMD.
  - **November 2023**, Ehresmann’s Theorem and the Kodaira-Spencer map - Hodge Theory RIT, UMD.
  - **October - December 2022** Organizer and speaker (along with Drimik Roy) of an étale cohomology reading seminar, UMD.
  - **December 2018 - December 2019, April 2021 - June 2022**, Founder and organizer (along with Renato Lewin, Gabriel Ramirez and Nicholas Mc-Donnell) of the Model Theory Seminar, PUC Chile.  
Speaker in topics such as Model Theory, Universal Algebra, the method of Forcing and the independence of the Axiom of Choice.
  - **October 2020**, Toric Examples via Fans - Baby Algebraic Geometry Seminar, PUC Chile.
  - **October 2020**, Markov’s Equation - Number Theory Seminar, PUC Chile.
  - **October 2020**, Toric Singularities - Baby Algebraic Geometry Seminar, PUC Chile.
  - **June 2020**, The Modular Polynomial - Complex Multiplication Seminar, PUC Chile.
  - **October 2019**, Rational Points in Analytic Curves - Number Theory Seminar, PUC Chile.
  - **May 2019**, Fundamental Group and Knots - Computations in Algebraic Geometry Seminar, PUC Chile.
  - **March 2019**, Monsky’s Theorem - Number Theory Seminar, PUC Chile.
  - **October 2018**, Diophantine Sets, Hilbert’s tenth problem and polynomials that produce primes - Number Theory Seminar, PUC Chile.
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### Assistance to Conferences and Workshops

- **November 2024**, Moduli of Varieties, University of Utah.
- **April 2024**, Algebra and Number Theory Day, UMD.
- **November 2023**, Algebra and Number Theory Day, John Hopkins University.
- **October 2023**, Algebraic Geometry Northeastern Section, University of Pennsylvania.

- **April 2023**, Algebra and Number Theory Day, John Hopkins University.
- **November 2022**, Algebra and Number Theory Day, UMD.
- **January 2020**, Brazilian ICPC Summer School, Universidade Estadual de Campinas.
- **December 2019**, XVIII Simposio Latinoamericano de Lógica Matemática, Universidad de Concepción.
- **December 2018**, LXXXVII Encuentro Anual de la Sociedad Matemática de Chile, Universidad de O'Higgins, Rancagua.

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#### Other Relevant Academic Activities

- **January 2018 - March 2018**, I was enrolled in a summer program at Instituto de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil. There I took the courses “Fundamental Group and Covering Spaces”, and “Non-Cooperative Game Theory”.

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#### Work as Teaching Assistant

- **Fall 2024**, Algebraic Geometry I (MATH606), grader, UMD.
- **Fall 2024**, Abstract Algebra I (MATH600), grader, UMD.
- **Spring 2024**, Introduction to Abstract Algebra (MATH403), grader, UMD.
- **Spring 2024**, Complex Variables (MATH463), grader, UMD.
- **Fall 2023**, Calculus II (MATH141), UMD.
- **Spring 2023**, Calculus III (MATH241), UMD.
- **Fall 2022**, Calculus I (MATH140), UMD.
- **1<sup>st</sup> semester 2021**, Introduction to Algebraic Geometry (MAT2335), PUC Chile
- **1<sup>st</sup> semester 2021**, Topology y Geometry de Manifolds (MPG3403), PUC Chile
- **1<sup>st</sup> semester 2020**, Introduction to Algebraic Geometry (MAT2335), PUC Chile
- **1<sup>st</sup> semester 2019**, Math Tutoring (SAM2010), Facultad de Matemáticas, PUC Chile.
- **1<sup>st</sup> semester 2019**, Calculus I (MAT1610), Facultad de Matemáticas, PUC Chile.
- **1<sup>st</sup> semester 2018**, Calculus III Lab (MAT1136L), Facultad de Matemáticas, PUC Chile.
- **1<sup>st</sup> semester 2017**, Math Workshop (MAT0006), Facultad de Matemáticas, PUC Chile.

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#### Other Math Related Activities

- **Spring 2024**, Directed Reading Program mentor on Differential Geometry, UMD.
- **2021**, Part of the organizing team of Competencia Chilena de Computación Competitiva (C4), Chile.
- **2017, 2019 - 2020**, Member of the grading team of Olimpiada Nacional de Matemáticas, Chile.
- **April 2019**, Assistant in an exposition about the Penrose tessellation in the outreach program Abstracta UC.
- **2016 - 2017**, Member of both the academic team and the grading team, as well as assistant during competitions of Campeonato Escolar de Matemáticas (CMAT), Chile.

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#### Scholarships

- **2022-present** Fulbright Scholarship, Fulbright Chile.
- **2020-2021**, Magister Nacional Scholarship, ANID.
- **2020-2021**, Matrícula Facultad Scholarship for Master's Degree Students, PUC Chile.
- **2016-2019**, Matrícula Facultad Scholarship for Undergraduate Students, PUC Chile.

- **2019**, Rolando Chuaqui Scholarship, PUC Chile.
- **2018**, Special Scholarship, for Programa de Verão do Instituto de Matemática Pura e Aplicada (IMPA), IMPA.
- **2017**, Scholarship for Academic Merit, PUC Chile.
- **2016**, Honor Scholarship, PUC Chile.

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**Prices and Awards**

- **2021**, 4<sup>th</sup> place (1<sup>st</sup> in Chile), The 2020 ICPC South America / South Finals.
- **2020**, Jorge Billeke Prize 2020. This prize is awarded to the best Math graduate that year.
- **2019**, 26<sup>th</sup> place (4<sup>th</sup> in Chile), The 2019 ICPC South America / South Finals.
- **2018**, 2<sup>nd</sup> place, 3<sup>er</sup> Torneo Chileno de Programación.
- **2018**, 25<sup>th</sup> (4<sup>th</sup> in Chile), The 2018 ICPC South America / South Finals.
- **2018**, 2<sup>nd</sup> place, Torneo Chileno de Programación.
- **2017**, 43<sup>rd</sup> place (5<sup>th</sup> en Chile), The 2017 ICPC South America / South Finals.
- **2016**, Honorable Mention, XXXI Olimpiada Iberoamericana de Matemática.
- **2015**, Highest score in the Math section of the national university entrance exam (PSU).
- **2015**, Gold Medal, 27<sup>o</sup> Olimpiada Nacional de Matemática, nivel Mayor.
- **2013**, Silver Medal, 25<sup>o</sup> Olimpiada Nacional de Matemática, nivel Menor.

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**Skills**

- Experience in competitive programming and in the programming languages C++, Python and Sage.
- Fluent in English and Spanish

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Updated: November 13, 2024.