

CURRICULUM VITAE

IGNACIO BARROS

09/07/2021

PERSONAL DATA

PLACE AND DATE OF BIRTH: Chile | 29 June 1988
ADDRESS: Université Paris-Saclay
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RESEARCH INTERESTS

Algebraic geometry with connections to other fields. More specifically: algebraic curves, hyperkähler varieties, K3 surfaces, abelian varieties, sheaves and their moduli spaces. Also strata of differentials, flat geometry and Teichmüller dynamics.

EMPLOYMENT

2021 – present	Université Paris–Saclay , Paris, France. Postdoctoral position, part of ERC Synergy Grant HyperK with O. Debarre, D. Huybrechts, E. Macrì, and C. Voisin. No teaching load and frequent/extended visits to Bonn.
2018 – 2020	Northeastern University , Boston, USA. Zelevinsky Postdoctoral Fellow Postdoctoral position with teaching load of 2+1.
JAN. – APRIL 2019 MARCH – APRIL 2021	Parental leave

EDUCATION

PhD in Mathematics , Humboldt Universität zu Berlin, Germany Advisers: Gavril Farkas and Rahul Pandharipande Tesis: <i>K3 surfaces and moduli of holomorphic differentials</i> Grade: <i>summa cum laude</i>	2015 – 2018
M.S. in Mathematics Freie Universität Berlin, Germany Tesis: <i>On abelian varieties, derived categories and A-infinity structures</i>	2012 – 2014
B.S. in Mathematics Pontificia Universidad Católica de Chile	2008 – 2011

VISITING (MORE THAN 2 WEEKS)

Pontificia Universidad Católica de Chile, Chile	JUNE – JULY 2020 (postponed due to COVID19)
University of Georgia, USA	OCTOBER 2017
ETH, Switzerland	DECEMBER 2017

AWARDS AND GRANTS

IGAFA Finalist in Adlershof thesis award, Germany	2019
Einstein Stiftung Berlin PhD scholarship, Germany	2015 – 2018
Berlin Mathematical School M.S. scholarship, Germany	2012 – 2014
Scholarship for Outstanding Performance , Chile	2010 – 2011
Best student of each generation, half of the yearly tuition	
Rolando Chuaqui Scholarship , Chile	2009 – 2011
Two best students of each generation, half of the yearly tuition	
Teaching Assistant of Excellence , Chile	2010 – 2011
Based on student evaluations. The award came with an increase of the TA salary.	

PUBLICATIONS AND PREPRINTS

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- (8) With S. Mullane, *On the birational geometry of the moduli of hyperelliptic curves*, **preprint** (2021). ArXiv: 2106.13774.
 - (7) With D. Agostini and K.-W. Lai, *On the irrationality of moduli spaces of $K3$ surfaces*, **preprint** (2020). ArXiv: 2011.11025.
 - (6) With D. Agostini, *Pencils on surfaces with normal crossings and the Kodaira dimension of $\mathcal{M}_{g,n}$* , **Forum of Mathematics, Sigma** 9 (2021), e31, 1–22.
 - (5) With L. Flapan, A. Marian, and R. Silversmith, *On product identities and the Chow rings of holomorphic symplectic varieties*, **preprint** (2019). ArXiv: 1912.13419.
 - (4) With S. Mullane, *Two moduli spaces of Calabi-Yau type*, **Int. Math. Res. Not. IMRN** (2019), rnz264, <https://doi.org/10.1093/imrn/rnz264>.
 - (3) *Geometry of the moduli space of n -pointed $K3$ surfaces of genus 11*, **Bulletin of the London Mathematical Society** 50 (2018), 1071–1084.
 - (2) *Uniruledness of strata of holomorphic differentials in small genus*, **Advances in Mathematics** 333 (2018), 670 – 693.
 - (1) *$K3$ surfaces and moduli of holomorphic differentials*, **PhD Thesis**, Humboldt-Universität zu Berlin, Mathematisch-Naturwissenschaftliche Fakultät, 2018

MEETINGS AND SEMINARS ORGANIZATION

2021	Moduli of curves, Hilbert schemes, and Tropical Geometry. AMS Spring Eastern Sectional Meeting (Special Session) formerly at Brown, now meeting virtually. Organized with N. Giansiracusa and R. Silversmith.
2020	Moduli of curves, Hilbert schemes, and Tropical Geometry (canceled due to COVID19). AMS Sectional Meeting (Special Session) at Tufts, Boston.
2019 – 2020	Geometry, Physics, and Representation Theory Seminar, Northeastern. Research seminar
2019 – 2020	Pick My Brain, Northeastern. Colloquium

CONFERENCE TALKS

2019	ELGA IV Latin American Algebraic Geometry School, Talca, Chile.
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2018	Moduli spaces in algebraic geometry and applications Satellite conference of ICM, Campinas, Brazil. Classical algebraic geometry Organized by O. Debarre, D. Eisenbud, G. Farkas, and R. Vakil, Oberwolfach, Germany.
2017	Moduli of curves, sheaves and K3 surfaces Organized by G. Farkas and R. Pandharipande, Berlin, Germany.
2016	BMS student conference Berlin, Germany.

SEMINAR TALKS

2021	Humboldt Universität zu Berlin, Germany (via Zoom) Université Paris-Saclay, France Derived seminar , virtual ETH, Switzerland (via Zoom) Michigan State University, USA (via Zoom)
2020	Boston University, USA Harvard University, CMSA, USA University of California, Berkeley, USA (Canceled due to COVID19) University of California, San Diego, USA (via Zoom) ETH, Switzerland (via Zoom) Pontificia Universidad Católica, Chile (via Zoom) Boston College, USA (via Zoom)
2019	Stony Brook University, USA University of Massachusetts Amherst, USA Humboldt Universität zu Berlin, Germany Virginia Commonwealth University, USA
2018	Pontificia Universidad Católica, Chile Boston College, USA Colorado State University, USA University of Washington, USA Leibniz Universität, Germany Harvard/MIT Algebraic Geometry Seminar, USA Northeastern University, USA
2017	ETH, Switzerland University of Georgia, USA
2016	ETH, Switzerland

TEACHING

Northeastern University

- MATH 1341: Calculus 1, Fall 2020.
- MATH 3175: Group Theory, Spring 2020.
- MATH 7735: Readings in Algebraic Geometry, Fall 2019.
- MATH 1365: Introduction to Math Reasoning, Fall 2018, Spring 2019 (Multi-section coordinator).

Humboldt Universität zu Berlin

- Algebraic Geometry II (TA), WiSe 2016/2017.

Pontificia Universidad Católica

- Topology (TA)
- Advanced Calculus (TA)
- Calculus I (TA)

Mini courses in Conferences/Graduate Schools

- Training Sessions for the mini-course *Prym varieties and Prym maps* imparted by Angela Ortega. Five one-hour sessions. ELGA IV, Talca, Chile 2019.

MENTORING

- I am a Math Alliance undergraduate mentor. Alliance pre-doctoral Mentors are typically math sciences faculty at colleges and universities who have committed themselves to mentoring and encouraging undergraduate students who come from ethnic groups, families and/or regions that have had little prior experience with doctoral study in the mathematical sciences. See mathalliance.org for more information about the goals of the Alliance.
- Undergraduate mentoring:
 - Amy Piccolo, Spring 2020. Now a graduate student at the University of Connecticut.
 - Weekly meeting with a small group of graduate and undergraduate students interested in Algebraic Geometry, Fall 2019.

SERVICE

- Member of the committee for an undergraduate Honors thesis. Felipe Castellano-Macias, *Elliptic fibrations and string geometry*. Fall 2019.
- Panelist for the series [Lunch in the Time of Covid](#). Topic: *Balancing family, Covid and Academia*
- Referee: Transactions of the American Mathematical Society, Mathematische Zeitschrift, Advances in Mathematics, American Journal of Mathematics.

LANGUAGES

ENGLISH: Fluent
GERMAN: Advanced
FRENCH: Beginner
SPANISH: Mothertongue