

ROBERTO SVALDI: Curriculum Vitae

Università degli Studi di Milano
Dipartimento di Matematica “F. Enriques”
Via Saldini 50
Milan (MI) 20133 Italy

email: roberto.svaldi@unimi.it
home page: rsvaldi.github.io
Phone number: +39 02 503 16153
ORCID ID: 0000-0003-1489-5899

CURRENT POSITION

Ricercatore a tempo determinato di tipo B (RTDB) and Rita Levi Montalcini Fellow. 09.2022-present

Università degli Studi di Milano, Dipartimento di Matematica “F. Enriques”.

The position of RTDB is a 3-year tenure-track position in the Italian system.

As a Montalcini Fellow, I have been carrying out research on my project “From birational geometry to its applications: Minimal Model Program, moduli spaces, and algebraic foliations” since 15.12.2022.

EMPLOYMENT HISTORY

Bernoulli Instructor and Marie Curie Fellow. 07.2019-08.2022

École polytechnique fédérale de Lausanne, Institut de Mathématiques.

The position of Bernoulli Instructor at EPFL is comparable to a fixed-term Lectureship or to an Assistant Professorship without tenure-track.

As a Marie Curie Fellow, hosted by the Chair of Algebraic Geometry, I carried out research on my project “Moduli and boundedness problems in Algebraic Geometry” from 01.07.2019 to 31.12.2021.

University Research Fellow. 09.2015-06.2019

University of Cambridge, Department of Pure Mathematics and Mathematical Statistics.

Visiting Scholar at SISSA during academic year 2016-17.

The University Research Fellowship is comparable to an independent postdoc position.

Fellow and College Lecturer in Pure Mathematics. 10.2015-06.2019

Churchill College, Cambridge.

Visiting Scholar at SISSA during academic year 2016-17.

Assegnista di ricerca (Post-Doc). 10.2016-09.2017

Scuola Internazionale di Studi Superiori Avanzati, Area di Matematica.

Supervisor: Prof. Jacopo Stoppa. Funded under ERC Starting Grant no. 307119.

I visited Professor Jacopo Stoppa at SISSA Trieste as part of a collaboration at the interface between birational algebraic geometry and complex geometry focused on the study of Kähler–Einstein metrics on algebraic varieties.

RESEARCH INTERESTS

Minimal Model Program and its applications.

Birational geometry of Calabi–Yau and Fano varieties with applications to physics.

Boundedness questions in algebraic geometry and their topological implications.

The topology of singularities in algebraic geometry and interactions with physics.

Holomorphic foliations and dynamics on projective varieties.

Toric geometry and toroidal compactifications.

Hyperbolicity questions in algebraic geometry.

EDUCATION

-
- Ph. D. in Mathematics.** 09.2010-06.2015
Massachusetts Institute of Technology, Department of Mathematics.
Thesis: “*Log geometry and extremal contractions*”. Thesis defended on 27.03.2015.
Advisor: Prof. J. M^cKernan.
- Laurea Specialistica in Matematica** (equivalent of M.S. in Mathematics). 09.2008-05.2010
Università degli Studi di Roma 3, Faculty of Sciences.
Thesis: “*On the cohomology algebras of compact Kähler manifolds and the Kodaira problem*”.
Advisor: Prof. L. Caporaso.
Graduated on 19.05.2010, with grade 110/110 cum laude.
- Laurea Triennale in Matematica** (equivalent of B.S. in Mathematics). 10.2005- 09.2008
Università degli Studi di Pavia, Faculty of Sciences.
Thesis: “*Riemann’s singularity theorem*”.
Advisor: Prof. M. D. T. Cornalba.
Graduated on 16.09.2008 with grade 110/110 cum laude.

AWARDS, FELLOWSHIPS, GRANTS, HABILITATIONS, SCHOLARSHIPS

Awards

- Federigo Enriques Prize**, 2016, €2000. 03.2017
Awarded by Unione Matematica Italiana and Fondazione Federigo Enriques.

Research grants obtained as PI

- PSR Grant**, PI, €24000. 08.2023
Project title: *Moduli problems in algebraic geometry and foliation theory*.
Funding by the University of Milan for incoming researchers that were attracted through a special recruiting program.
- Postdoctoral Grant**, Co-PI, €56400. 11.2022
Project title: *Boundedness and moduli problems in algebraic geometry and foliation theory*.
Funded by the University of Milan for a 2-year postdoctoral research assistantship.
- Rita Levi Montalcini Fellowship**, PI, €233427,59. 12.2022-present
Project title: *From birational geometry to its applications: Minimal Model Program, moduli spaces, and algebraic foliations*.
Funded by the Italian Ministry for University and Research.
- Marie Skłodowska Curie Individual Fellowship**, PI, €191149,44. 07.2019-12.2021
Project title: *Boundedness and Moduli problems in birational geometry*. Grant No. 842071.
Funded by the European Commission.
- EPSRC Postdoctoral Fellowship**, PI, £293505,40. 02.2019
Project title: *Moduli and boundedness problems in geometry*. Grant No. EP/S024808/1.
Funded by the Engineering and Physical Sciences Research Council , UK. The fellowship was rejected for incompatibility with the MSCA Fellowship.

Research funding obtained as a mentor

- Postdoctoral Fellowship**, PI: Dr. P. Chaudhuri, €70000. 05.2023
Funded by the Istituto Nazionale di Alta Matematica “F. Severi”, to be spent at Università degli Studi di Milano.

Travel grants and funding for academic events

- Grant** No. 550, Co-PI, Foundation Compositio, €9500. 03.2022
Funding for the organization of the workshop in September 2022.

| | |
|--|---------|
| Grant , Co-PI, Bernoulli Center for Fundamental Studies, 35000CHF. <i>Funding for the organization of the workshop in September 2022.</i> | 02.2022 |
| Scheme 4 Grant , Co-PI, London Mathematical Society, Ref.41916, £1000. <i>Funding for the visit to King's College London in February 2020.</i> | 10.2019 |
| Scheme 8 Grant , PI, London Mathematical Society, Ref.81613, £4000. <i>Funding for the organization of the PhD School of December 2017.</i> | 06.2017 |
| AMS Graduate Student Travel Grant , \$250. | 03.2015 |

Habilitations

| | |
|---|---------|
| Abilitazione scientifica nazionale alla funzione di professore ordinario. <i>Italian national habilitation to the ranking of full professor.</i> | 05.2023 |
| Abilitazione scientifica nazionale alla funzione di professore associato. <i>Italian national habilitation to the ranking of associate professor.</i> | 02.2022 |
| Qualification aux fonctions de Maître de Conférences. <i>French national habilitation to the ranking of Maître de Conférences.</i> | 01.2019 |

Fellowships and Scholarships

| | |
|--|-----------------|
| Full tuition and salary , Massachusetts Institute of Technology. | 09.2011-06.2015 |
| Praevis Presidential Fellowship , Massachusetts Institute of Technology, \$40000. | 09.2010-05.2011 |
| INdAM scholarship for students of the Laurea Specialistica program, awarded by the National Institute for High Mathematics 'F. Severi', €9000. | 04.2009-03.2011 |
| INdAM scholarship for students of the Laurea Triennale program, awarded by the National Institute for High Mathematics 'F. Severi', €12000. | 01.2006-12.2008 |
| Scholarship at Collegio Borromeo and University Institute for Higher Studies, Pavia, Italy. | 10.2005-10.2008 |

VISITING POSITIONS

| | |
|--|-----------------|
| Participation to the Junior Hausdorff Trimester Program "Algebraic geometry: derived categories, Hodge theory, and Chow groups" | 09.2023-12.2023 |
| Visitor at Università di Roma Tor Vergata (Host: M. McQuillan). | 04.2022 |
| Visitor at King's College London (Host: C. Spicer). | 02.2020 |
| Visitor at University of Bonn (Host: L. Tasin). | 10.2018 |
| Visitor at Princeton University (Host: G. Di Cerbo). | 03.2018 |
| Visitor at BICMR, Beijing (Host: C. Xu). | 10.2017 |
| Visitor at SISSA, Trieste (Host: J. Stoppa). | 10.2016-09.2017 |
| Visitor at IMPA, Rio de Janeiro (Host: J. V. Pereira). | 03.2016-04.2016 |
| Visitor at Mathematics Department, UC San Diego. | 02.2015-06.2015 |
| Visitor at Mathematics Department, Princeton University under the Exchange Scholar Program. | 09.2014-12.2014 |
| Visitor at Mathematics Department, UC San Diego. | 10.2013-06.2014 |

PUBLICATIONS

Articles in peer-reviewed journals

13. (with S. Filipazzi), On the connectedness principle and dual complexes for generalized pairs, *Forum Math. Sigma* 11 (2023), Paper No. e33, 39pp. DOI: 10.1017/fms.2023.25.
12. (with C. Spicer), Effective generation for foliated surfaces: Results and applications, *J. Reine Angew. Math. (Crelle's Journal)* 795 (2023), 45–84. DOI: 10.1515/crelle-2022-0067.
11. (with H. Liu), Rational curves and strictly nef divisors on Calabi–Yau threefolds, *Doc. Math.* 27 (2022), 1581–1604. DOI: 10.4171/DM/904.
10. (with C. Spicer), Local and global applications of the Minimal Model Program for co-rank one foliations on threefolds, *J. Eur. Math. Soc. (JEMS)* 24 (2022), no. 11, 3969–4025. DOI: 10.4171/JEMS/1173.

9. (with L. Braun, J. Moraga, S. Filipazzi), The Jordan property for local fundamental groups, *Geom. Topol.* 26 (2022), no. 1, 283–319. DOI: 10.2140/gt.2022.26.283.
8. (with G. Di Cerbo), Birational boundedness of low dimensional elliptic Calabi-Yau varieties with a section, *Compos. Math.* 157 (2021), no. 8, 1766–1806. DOI: 10.1112/S0010437X2100717X.
7. (with W. Chen, G. Di Cerbo, J. Han, and C. Jiang), Birational boundedness of rationally connected Calabi-Yau threefolds, *Adv. Math.* 378 (2021), Paper No. 107541, 32 pp.. DOI: 10.1016/j.aim.2020.107541.
6. (with S. Filipazzi), Invariance of plurigenera and boundedness for generalized pairs, *Mat. Contemp.* 47 (2020), 114–150. DOI: 10.21711/231766362020/rmc476. Proceedings of the ICM Satellite “Moduli spaces in Algebraic Geometry and Applications”, Campinas, Brazil 2018.
5. Hyperbolicity for log canonical pairs and the Cone Theorem, *Sel. Math. New Ser.* (2019), no. 5, Paper No. 67, 23 pp.. DOI: 10.1007/s00029-019-0512-9.
4. (with J. V. Pereira), Effective algebraic integration in bounded genus, *Algebr. Geom.* 6 (2019), no. 4, 454–485. DOI: 10.14231/AG-2019-021.
3. (with A. Fanelli, G. Codogni, and L. Tasin), A note on the fibres of Mori fibre spaces, *Eur. J. Math.* 4 (2018), no. 3, 859–878. DOI: 10.1007/s40879-018-0219-z.
2. (with M. Brown, J. McKernan, H. R. Zong), A geometric characterization of toric varieties, *Duke Math. J.*, 167 (2018), no. 5, 923–968. DOI: 10.1215/00127094-2017-0047.
1. (with G. Codogni, A. Fanelli, L. Tasin), Fano varieties in Mori fibre spaces, *Int. Math. Res. Not. IMRN* 2016, no. 7, 2026–2067. DOI: 10.1093/imrn/rnv173.

Pre-prints

14. (with C. Birkar, G. Di Cerbo), Boundedness of elliptic Calabi–Yau varieties with a rational section, submitted to *Journal of Differential Geometry* dal 07.2021, 44 pp., arXiv:2010.09769.
15. (with J. Moraga), A characterization of toric singularities, submitted to *Journal de Mathématiques Pures et Appliquées* since 02.2023, 57 pp., arXiv:2108.01717.
16. (with S. Filipazzi, C. Hacon), Boundedness of elliptically fibered Calabi–Yau threefolds, submitted to *Journal of the European Mathematical Society (JEMS)* since 12.2021, 49pp., arXiv:2112.01352.

Surveys

17. On the structure of local and global singularities: Shokurov’s Conjecture, Proceedings of the “Kinosaki Algebraic Geometry Symposium 2017”, 12 pp., available electronically on the Kyoto University Research Information Repository.
18. Recent progress on the birational geometry of foliations on threefolds, *Oberwolfach Reports* 17 (2020), no. 2/3, 1002–1006 DOI: 10.4171/OWR/2020/19

INVITED TALKS

Invited lectures series

- | | |
|---|---------|
| Boundedness for foliated surfaces, Final conference of the ANR Project ‘Foliage’, Quimper, France. | 03.2022 |
| A geometric characterization of toric varieties, BAGS, Université de Lorraine. | 03.2018 |

Colloquia

- | | |
|--|---------|
| The geometry of projective varieties, online talk, SISSA, Trieste. | 04.2021 |
|--|---------|

Invited conference talks

- | | |
|---|---------|
| Birational geometry of surface foliations: towards a moduli theory. International workshop on Birational Geometry, Nagoya University. | 10.2023 |
|---|---------|

| | |
|---|---------|
| Spazi di moduli per superfici foliate di tipo generale, 23rd Congress of the Unione Matematica Italiana, Pisa. | 09.2023 |
| Birational geometry of surface foliations: towards a moduli theory. Workshop on dynamics and birational geometry, King's College London. | 03.2023 |
| Minimal model program for foliated surfaces: a different approach, Higher Dimensional Geometry in New York: Stability and Moduli, Simons Centre for Geometry and Physics, Stony Brook. | 08.2022 |
| A geometric characterization of toric singularities and toric morphisms, Birational Geometry Conference and 2022 meeting of the Swiss Mathematical Society, École polytechnique fédérale de Lausanne. | 06.2022 |
| A characterization of toricness, 2021 Workshop on Algebraic Geometry: Generalised Pairs and Applications, online conference, Chinese Academy of Sciences & Tsinghua University. | 08.2021 |
| Boundedness of elliptic fibrations, Projective and birational higher dimensional geometry, online conference, Università di Trieste. | 04.2021 |
| Recent progress on the birational geometry of foliations on threefolds, Algebraic Geometry: Moduli Spaces, Birational Geometry and Derived Aspects, MFO Oberwolfach. | 07.2020 |
| Minimal Model Program for foliations on threefolds and applications, Geometry and Dynamics of Foliations, online conference, CIRM, Marseille. | 05.2020 |
| Birational boundedness of elliptic Calabi-Yau varieties, Workshop on the geometry of elliptic fibrations & COW Seminar, University of Warwick. | 02.2020 |
| A geometric characterization of toric morphisms, From Trento to Geometry and back, Università di Trento. | 12.2019 |
| Birational boundedness of elliptic Calabi-Yau varieties, Moduli and stability conditions, Leibniz Universität Hannover. | 07.2019 |
| Birational boundedness of elliptic Calabi-Yau varieties, Western Algebraic Geometry Symposium, UC Berkeley. | 04.2019 |
| Towards birational boundedness of elliptic Calabi-Yau varieties, Moduli spaces in Algebraic Geometry and applications, ICM Satellite Conference, short communication, Campinas. | 07.2018 |
| On the birational boundedness of the bases of elliptically fibered Calabi-Yau manifolds in low dimension, Geometry and Physics of F-theory, BIRS, Banff. | 01.2018 |
| On the geometry of Calabi-Yau varieties in low dimension, Korean-Italian Meeting on Algebraic Geometry 2018, KIAS, Seoul. | 01.2018 |
| Global vs. Local structure of singularities, Kinosaki Algebraic Geometry Conference, Kinosaki, Japan. | 10.2017 |
| Log birational boundedness of Calabi-Yau pairs, Workshop on Fano varieties and Calabi-Yau varieties, Kobe University. | 01.2017 |

| | |
|---|---------|
| Log birational boundedness of Calabi-Yau pairs, Birational Geometry and Characteristic $p > 0$, CIRM, Marseille. | 09.2016 |
| A geometric characterization of toric varieties, Giornate di Geometria Algebrica ed Argomenti Correlati XXIII, Università di Catania. | 05.2016 |
| Adjoint dimension of foliations, Cambridge–Tokyo Workshop, I, University of Cambridge. | 11.2015 |
| Hyperbolicity for log pairs, Postgraduate Conference in Complex Geometry, University of Cambridge. | 09.2015 |
| Hyperbolicity for log pairs, Distribution of Rational and Holomorphic Curves in Algebraic Varieties, BIRS, Banff. | 03.2015 |
| A geometric characterization of toric varieties, The Geometry of Algebraic Varieties, AMS Sectional Meeting, Michigan State. | 03.2015 |
| A geometric characterization of toric varieties, Geometria e Rappresentazioni nella Capitale, II, Università degli Studi Roma 3. | 12.2014 |

Invited seminar talks

| | |
|--|---------|
| Algebraic Geometry Seminar, UC San Diego. | 03.2023 |
| Oberseminar Algebraische Geometrie, Leibniz Universität Hannover. | 01.2023 |
| Seminario di Geometria ed Algebra, Università degli Studi di Milano. | 10.2022 |
| Algebraic Geometry Seminar, Universiteit van Amsterdam. | 06.2022 |
| Seminario di Geometria, Università di Roma Tre. | 04.2022 |
| Seminario di Geometria, Università di Roma Tor Vergata. | 04.2022 |
| Seminario di Algebra e Geometria, Sapienza Università di Roma. | 04.2022 |
| Explicit Birational Geometry Seminar, Fudan University. | 02.2022 |
| Algebraic Geometry Seminar, Columbia University. | 01.2022 |
| Oberseminar: Algebra, Zahlentheorie und algebraische Geometrie, online talk, Albert-Ludwigs-Universität Freiburg. | 07.2021 |
| Algebraic Geometry seminar, online talk, University of Kansas. | 04.2021 |
| Algebraic Geometry Seminar, online talk, Université de Bordeaux. | 04.2021 |
| Dutch online Algebraic Geometry seminar, online talk, Universiteit van Amsterdam. | 03.2021 |
| Algebraic Geometry Seminar, online talk, University of Utah. | 02.2021 |
| Algebraic Geometry Seminar, online talk, UC San Diego. | 01.2021 |
| Iskovskikh Seminar (online), Steklov Mathematical Institute, Moscow. | 11.2020 |
| Algebraic Geometry Seminar, online talk, Ohio State University. | 11.2020 |
| Algebraic Geometry Seminar, online talk, Max Planck Institute, Bonn. | 05.2020 |
| Algebraic Geometry Seminar, University of Princeton. | 03.2020 |
| KCL/UCL Geometry seminar, University College London. | 02.2020 |
| Seminario di Geometria Algebrica, Università di Torino. | 03.2019 |
| Edinburgh Geometry Seminar, University of Edinburgh. | 03.2019 |

| | |
|--|---------|
| Séminaire d'homotopie en géométrie algébrique, Université de Toulouse. | 01.2019 |
| Oberseminar Algebraische Geometrie, Universität des Saarlandes. | 11.2018 |
| Algebraic Geometry Seminar, Max Planck Institute, Bonn. | 10.2018 |
| Groups, Arithmetic & Algebraic Geometry Seminar, EPF Lausanne. | 09.2018 |
| Seminario di Geometria Algebrica, Università di Trento. | 05.2018 |
| Geometry and Mathematical Physics seminar, Loughborough University. | 05.2018 |
| Warwick Algebraic Geometry Seminar, University of Warwick. | 05.2018 |
| Algebraic Geometry Seminar, UC San Diego. | 04.2018 |
| Algebraic Geometry Seminar, University of Utah. | 04.2018 |
| Algebraic Geometry Seminar, Princeton. | 03.2018 |
| Math-Physics Joint Seminar, UPenn. | 03.2018 |
| Mathematics–String Theory Seminar, IPMU, Tokyo. | 10.2017 |
| Algebraic Geometry Seminar, University of Tokyo. | 10.2017 |
| Log birational boundedness of Calabi-Yau pairs, BICMR, Beijing. | 10.2017 |
| Algebraic Geometry Seminar, University of Oslo. | 04.2017 |
| Seminario di Geometria Algebrica, SISSA, Trieste. | 03.2017 |
| Algebraic Geometry Seminar, University of Cambridge | 03.2017 |
| Algebraic Geometry Seminar, University of Tokyo. | 01.2017 |
| Groups, Arithmetic & Algebraic Geometry Seminar, EPFL. | 11.2016 |
| Algebraic Geometry Seminar, UC San Diego. | 11.2016 |
| Seminario de Álgebra, IMPA, Rio de Janeiro. | 03.2016 |
| Algebraic Geometry Seminar, Princeton University. | 03.2016 |
| Algebraic Geometry Seminar, Columbia University. | 03.2016 |
| Geometry and Mathematical Physics seminar, Loughborough University. | 02.2016 |
| EDGE Seminar, University of Edinburgh. | 01.2016 |
| Geometry and Topology Seminar, Imperial College. | 11.2015 |
| Algebraic Geometry Seminar, University of Cambridge. | 11.2015 |
| Seminario di Geometria Algebrica, Università degli Studi di Pavia. | 10.2015 |
| CIRGET Seminar, UQAM, Montreal. | 03.2015 |
| Algebraic Geometry Seminar, Johns Hopkins University. | 02.2015 |
| Algebraic Geometry Seminar, UT Austin. | 02.2015 |
| Seminario di Geometria Algebrica, Università degli Studi Roma 3. | 12.2014 |
| Algebraic Geometry Seminar, UC San Diego. | 05.2014 |

Contributed talks

| | |
|--|---------|
| Hyperbolicity for log pairs, AMS Summer Institute in Algebraic Geometry, Salt Lake City. | 07.2015 |
|--|---------|

POSTDOC SUPERVISION

Postdocs

| | |
|---|-----------------|
| Priyankur Chaudhuri, funded by a grant from INDAM. | 10.2023-present |
| Saverio Andrea Secci, funded by a grant of the University of Milan. | 09.2023-present |

TEACHING

Teaching as a RTDB in Università degli Studi di Milano

| | |
|--|-----------|
| Matematica, 1st year service course for the Bachelor in Biotechnology (16 hours). | Fall 2022 |
| Matematica Generale, 1st year service course for the Bachelor in Biology (44 hours). | Fall 2022 |

Teaching as Bernoulli Instructor at EPFL

| | |
|---|-------------|
| Complex Manifolds, Mathematics Master's course (28 hours). | Spring 2022 |
| Analysis I, 1st year service course for students of several departments of EPFL (56 hours). | Fall 2021 |
| Analysis I, 1st year service course for students of several departments of EPFL (56 hours). | Fall 2020 |
| Rings and modules, 3rd year Mathematics Bachelor course (28 hours). | Fall 2019 |
| Complex Manifolds, Mathematics Master's course (28 hours). | Fall 2019 |

Teaching as a Research Fellow at University of Cambridge

| | |
|--|--------------------|
| Positivity in Algebraic Geometry, Part III course (16 hours). | Lent (Spring) 2018 |
| Linear Series, Part III course (16 hours). | Lent (Spring) 2017 |
| Introduction to birational geometry, Minicourse in 6 lectures (12 hours), part of the Ph.D. course "Topics in algebro-geometric stability", SISSA, Trieste. | 12.2016-1.2017 |

Teaching as a College Lecturer at Churchill College

| | |
|---|------------------------|
| Groups, Rings and Modules. Supervisor for 10 students (25 hours). | Lent (Spring) 2019 |
| Geometry 1B. Supervisor for 7 students (16 hours). | Lent (Spring) 2019 |
| Groups 1A. Supervisor for 12 students (30 hours). | Michaelmas (Fall) 2018 |
| Group, Rings and Modules. Supervisor for 9 students (26 hours). | Lent (Spring) 2018 |
| Geometry 1B. Supervisor for 7 students (16 hours). | Lent (Spring) 2018 |
| Linear Algebra 1B. Supervisor for 13 students (35 hours). | Michaelmas (Fall) 2017 |
| Group, Rings and Modules. Supervisor for 8 students (16 hours). | Lent (Spring) 2017 |
| Geometry 1B. Supervisor for 9 students (15 hours). | Lent (Spring) 2017 |
| Group, Rings and Modules. Supervisor for 9 students (25 hours). | Lent (Spring) 2016 |
| Geometry 1B. Supervisor for 10 students (16 hours). | Lent (Spring) 2016 |
| Analysis 1B. Supervisor for 12 students (28 hours). | Michaelmas (Fall) 2015 |
| Topology and Metric Spaces. Supervisor for 8 students (12 hours). | Michaelmas (Fall) 2015 |

Teaching as a graduate student at MIT

| | |
|--|-------------|
| 18.095, Mathematics Lecture Series, Organizer and Recitation Leader. | IAP 2015 |
| 18.085, Computational Science and Engineering, Course Instructor. | Summer 2013 |
| 18.095, Mathematics Lecture Series, Organizer and Recitation Leader. | IAP 2013 |
| 18.02, Multivariable Calculus, Teaching Assistant. | Fall 2012 |
| 18.085, Mathematical Methods for Engineering, Grading Assistant and responsible for Office Hours. | Spring 2012 |
| 18.112, Complex Analysis, Grading Assistant and responsible for Office Hours. | Fall 2011 |
| 18.755, Lie Groups, Grading Assistant and responsible for Office Hours. | Fall 2011 |

Teaching as an undergraduate student in Italy

| | |
|--|-------------|
| Complex Analysis, Teaching Assistant, University of Rome 3. | Spring 2010 |
| Calculus 1, Teaching Assistant, University of Rome 3. | Fall 2009 |
| General topology, Teaching Assistant, University of Rome 3. | Spring 2009 |
| General Mathematics for Biological Sciences, Teaching Assistant, University of Pavia. | Fall 2008 |

STUDENT SUPERVISION

Thesis supervision

| | |
|--|-----------------|
| Linus Rösler , MA Thesis, "The geometry of elliptic fibrations", EPFL. | 02.2021-09.2021 |
| Anaëlle Pfister , BA project (equivalent to a bachelor's thesis), "An introduction to toric geometry", EPFL. | 02.2021-06.2021 |

| | |
|--|-----------------|
| Luca Nyckess , BA project (equivalent to a bachelor's thesis), "An introduction to complex manifolds and Hodge Theory", EPFL. | 02.2020-06.2020 |
| Simen Moe , Part III essay (equivalent to a master's thesis), "An introduction to the Minimal Model Program", University of Cambridge. | 12.2018-05.2019 |

Study projects supervision

| | |
|--|-----------------|
| Alberto Smailovic Funcasta , one-semester study project, "Introduction to algebraic structures: from groups to modules", EPFL. | 02.2022-06.2022 |
| Linus Rösler , MA project (one-semester project), "Elliptic surfaces in Algebraic Geometry", EPFL. | 09.2020-12.2020 |
| Maxime Matthey , MA project (one-semester project), "Advanced topics in Commutative Algebra: Completions", EPFL. | 09.2020-12.2020 |
| Gheehyun Nahm , one-semester study project on advanced topics in Algebraic Geometry, University of Cambridge. | 08.2018-03.2019 |
| Leon Zhang , Direct Reading Program, Supervisor for an undergraduate student on topics in Hodge Theory, MIT. | IAP 2015 |
| Minseon Shin , Direct Reading Program, Supervisor for an undergraduate student on topics in Scheme Theory, MIT. | IAP 2013 |

Thesis committee participation

| | |
|---|---------|
| Peter Simko , "Fano varieties", Master thesis, EPFL. | 07.2017 |
|---|---------|

ORGANIZATION OF CONFERENCES, SEMINARS AND WORKSHOPS

Conferences and workshops

| | |
|---|---------|
| Birational workshop , five-day workshop (team of 4), part of the activities of the research trimester "Algebraic geometry: derived categories, Hodge theory, and Chow groups", Hausdorff Institute for Mathematics, Bonn, Germany. | 11.2023 |
| Foliations in Algebraic and Birational Geometry , five-day workshop (team of 4), Bernoulli Center for Fundamental Studies, Lausanne, Switzerland. | 09.2022 |
| Basel-Dijon-EPFL Workshop , two-day workshop (team of 2), Lausanne, Switzerland. | 05.2022 |
| Basel-Dijon-EPFL Workshop , two-day workshop, (team of 5), Basel, Switzerland. | 11.2021 |
| Basel-Dijon-EPFL Workshop , two-day workshop, (team of 4), Lausanne, Switzerland. | 11.2019 |
| Cambridge-Tokyo Algebraic Geometry Workshop, III , two-day workshop, (team of 4), Cambridge, UK. | 12.2018 |
| New advances in Fano manifolds , five-day school for Ph.D. students, (team of 4), Cambridge, UK. | 12.2017 |
| British Algebraic Geometry , three-day conference, (local organizer), Cambridge, UK. | 09.2017 |
| Cambridge-Tokyo Algebraic Geometry Workshop, II , two-day workshop, (team of 4), Cambridge, UK. | 03.2017 |
| MIT-RTG Mirror Symmetry Workshop , five-day workshop, (team of 6), Big Bear Lake, US. | 05.2013 |

Seminars

| | |
|---|-----------------|
| Organizer for the Groups, Arithmetic & Algebraic Geometry Seminar, EPFL. | 09.2019-08.2022 |
| Organizer for the Algebraic Geometry Seminar, University of Cambridge. | 10.2017-06.2019 |

OUTREACH ACTIVITIES

| | |
|--|---------|
| HE+ Masterclass , Churchill College, Cambridge <i>I gave a lecture on modern geometry and organized an exercise session for high school students.</i> | 04.2019 |
| Open days , Churchill College, Cambridge <i>I gave a lecture on symmetries and geometry and organized an exercise session for high school students.</i> | 07.2018 |
| Orientation for high-school students, Liceo Classico "G. Prati", Trento <i>I spoke to high school students about what are the challenges of becoming a maths student starting from a</i> | 04.2012 |

background in humanities.

ACADEMIC SERVICES

Refereeing and reviewing activity

Referee for academic journals: (unless otherwise stated, 1 report per journal) Since 2015

Journal list: Mathematics Research Letter, Michigan Journal of Mathematics, International Mathematics Research Notices (6 reports), Mathematische Annalen (2 reports), Annali della Scuola Normale Superiore di Pisa, Journal of Algebraic Geometry (3 reports), Inventiones Mathematicae (2 reports), International Journal of Mathematics (2 reports), Manuscripta Mathematica, Advances in Mathematics (2 reports), Transactions of the AMS (2 reports), Annales de l'Institut Fourier, Journal of Differential Geometry (2 reports), Proceedings of the LMS (2 reports), Advances in geometry, Forum Math Pi (2 reports), Journal of the LMS, Electronic Research Archive, Mathematische Zeitschrift, Journal of the AMS, Compositio Mathematica (2 reports), Bulletin of the LMS.

Referee for conference proceedings: (by conference title) Since 2013

Groups of Automorphisms in Birational and Affine Geometry;
Moduli of K-stable Varieties;
Birational geometry, Kähler-Einstein metrics and degenerations.

Referee for grants and fellowships applications submitted to the Since 09.2019
Engineering and Physical Sciences Research Council, UK (3 grants).

Reviewer for Zentralblatt and Mathscinet (7 reviews). Since 2014

Mentoring activity

Mentor for 1st year students of the Bachelor in Mathematics, 10.2022-present
Università degli Studi di Milano.

Mentor for the students of the Institute of Mathematics, EPFL. 11.2020-07.2021

Mentor for postgraduate students, Churchill College. 10.2017-06.2019

Committee participation

Postdoc Selection Committee for the Chair of Algebraic Geometry, EPFL. 02.2021 and 02.2022

Doctoral students Selection Committee for the Chair of Algebraic Geometry, EPFL. 02.2022

Admission Selection Interviews, Churchill College, Cambridge. 12.2018

LANGUAGES

Italian: mother tongue.

English: professional proficiency.

French: intermediate level.

German: beginner level.

Last update: September 12th, 2023