

CURRICULUM VITÆ

Lidia Stoppino

Lidia Stoppino,
Born on June 17, 1977 in
Pavia (Italy).
Nationality : Italian.
Position: Associate Professor,
University of Pavia.
Married, one child.

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Education

- 2006 **Ph.D. in Mathematics and Scientific Calculus** at the University of Pavia, discussed on 2 February 2006. Title: *Stability of maps to projective spaces, with application to the slope of fibred surfaces*. Supervisor: Prof. Maurizio Cornalba.
- 2000 **Graduation in Mathematics** with full marks (110 e lode) at the University of Pavia. Date 23 November. Title of dissertation: *Aritmetica di schemi ellittici*. Advisor: Prof. Lambertus van Geemen.
- 1995 **High school degree** (Classical studies) at the Liceo Classico Ugo Foscolo, Pavia.

Positions

- Oct 2018- Since 1 October 2018 **Professore associato** (Associate Professor) at the Department of Mathematics of Pavia.
- 2016 -18 From 1 October 2016 to 31 September 2018 **Professore associato** (Associate Professor) at the Dipartimento Scienza e Alta Tecnologia, University of Insubria (Como).
- 2008 -16 From 30 December 2008 to 30 September 2016 **Ricercatrice** (Assistant Professor) at the Dipartimento di Matematica e Fisica (since 2013 Dipartimento di Scienza e Alta Tecnologia) of the University of Insubria (Como). From 23 September 2010 to 12 April 2011 **maternity leave**.
- 2008 **Post Doc** position at the Math. Department of the University of Pavia.
- 2006-08 **Post Doc** position at the Math. Department of the University of Roma Tre.
- 2005-06 **Pre-Doc** position issued by the University of Pavia.
- 2000-01 **Pre-Doc** position at the Math Department of Cambridge University, sponsored by an INDAM scholarship.

Fellowships and awards

- 2018 March 30, winner of the Italian **Abilitazione Scientifica Nazionale 2016** for the s.s.c. 01/A2 (Algebra e Geometria)- I Fascia (valid until 30/03/2024)
- 2013 December 24, winner of the italian **Abilitazione Scientifica Nazionale 2012** for the s.s.c. 01/A2 (Algebra e Geometria)- II Fascia (habilitation for associate professorship).
- Jan 2008 winner of a post-doc fellowship issued by University of Pavia.
- Mar 2006 winner of a post-doc fellowship issued by University of Roma Tre.
- Jul 2005 winner of a pre-doc fellowship issued by University of Pavia.
- Oct 2001 winner of a Ph.D fellowship in Mathematics and Statistics, XVII Ciclo (Curriculum in Algebraic Geometry) at the University of Pavia.
- 2001 winner of the **Prize Cinquini-Cibrario** for the best Thesis in Mathematics in the University of Pavia in the a.y. 2000-2001.
- 2001 winner of a **INDAM scholarship** for studies abroad.

Fundings and grants

- 2016 Winner of a grant for issuing a Junior Post Doc scholarship at the University of Insubria. Research project with title: *Fibred irregular surfaces*.
- 2015– Participant to the research program PRIN 2015 “Moduli Spaces and Lie Structures”
- 2012-14 Participant to the research program PRIN 2012 “Spazi di Moduli e Teorie di Lie”.
- 2010-12 Participant to the research program PRIN 2009 “Moduli, strutture geometriche e loro applicazioni”.
- 2008-10 Participant to the research program PRIN 2007 “Moduli, strutture geometriche e loro applicazioni”.
- 2009– Responsible of FAR Fundings (Fondi Ateneo Ricerca) of the Algebra and Geometry group of the Dipartimento di Scienza e Alta Tecnologia dell’Università dell’Insubria “Strutture algebro-geometriche e loro classificazione”.

Affiliations

- 2015– Member of EWM: European Women in Mathematics.
- 2014– Member of Unione Matematica Italiana.
- 2008– Member of INDAM-GNSAGA.

Academic visits

- 2015 November. University Politècnica de Catalunya, Barcelona (Spain), invited by Prof. Barja.
March. Bielefeld University (Germany), invited by Prof. Rollenske.
- 2014 February. University Politècnica de Catalunya, Barcelona (Spain), invited by Prof. Barja.
- 2013 June. University Politècnica de Catalunya, Barcelona (Spain), invited by Prof. Barja.
October. University of Roma Tre, invited by Prof. Viviani.
- 2010 October. University of Trieste, invited by Dr. Beorchia.
- 2008 May. Bergen University (Norway), invited by Prof. Knutsen.
- 2009 Nov-Dic, University Politècnica de Catalunya, Barcelona (Spain), invited by Prof. Barja
- 2007 May. University Politècnica de Catalunya, Barcelona (Spain), invited by Prof. Barja.

SCIENTIFIC ACTIVITY

Research Fields and Interests

Algebraic Geometry. In particular I am interested in:

- Geography of algebraic varieties; slope inequalities for fibrations.
- Topology and geometry of irregular varieties.
- GIT stability of polarized varieties, stability of vector bundles and relations between them.
- Combinatorics of stable curves; birational geometry of the moduli space of stable curves.

Journal Papers

1. V. González-Alonso, L. Stoppino, S. Torelli, *On the rank of the flat unitary summand of the Hodge bundle*, to appear in Transactions of the AMS, preprint arXiv: 1709.05670[math.AG]
2. M. A. Barja, R. Pardini, L. Stoppino, *Linear systems on irregular varieties*, to appear in the Journal of the Institute of Mathematics of Jussieu, preprint arXiv: 1606.03290 [math.AG]
3. M. A. Barja, R. Pardini, L. Stoppino, *The eventual paracanonical map of a variety of maximal Albanese dimension*, Algebraic Geometry no. 6 (3) (2019) pp. 302–311.
4. M. A. Barja, R. Pardini, L. Stoppino, *Surfaces on the Severi line*, Journal de Mathématiques Pures et Appliquées, no. 5 (2016), pp. 734–743.
5. M. A. Barja, L. Stoppino, *Stability and singularities of relative hypersurfaces*, International Math. Research Notices, no. 4 (2016), pp. 1026–1053.
6. E. C. Mistretta, L. Stoppino, *Linear series on curves: stability and Clifford index*, International J. Math., **23**, Issue No. 12 (2012), pp. 1250121, 25 pp.
7. L. Stoppino, *Fibrations of Campana general type on surfaces*, Geometriae Dedicata, vol. 155, n. 1 (2011), pp. 69–80.
8. S. Busonero, M. Melo, L. Stoppino, *On the complexity group of stable curves*, Adv. in Geometry, Vol. 11, Issue 2 (2011), pp. 241–272.
9. F. Bastianelli, G. P. Pirola, L. Stoppino, *Lagrangian surfaces and Galois closures*, Adv. in Math. 225 (2010), vol. 6, pp. 3463–3501.
10. M. A. Barja, L. Stoppino, *Slopes of trigonal fibred surfaces and of higher dimensional fibrations*, Ann. Scuola Norm. Sup. Pisa Cl. Sci. (5) Vol. VIII (2009), pp. 647–658.
11. M. A. Barja, L. Stoppino, *Linear stability of projected canonical curves, with applications to the slope of fibred surfaces*, J. of the Math. Soc. of Japan, Vol. 60, No. 1 (2008), pp. 171–192.
12. M. Cornalba, L. Stoppino, *A sharp bound for the slope of double fibrations*, Michigan Mathematical J., Volume 56, Issue 3 (2008), pp. 551–561.
13. L. Stoppino, *Slope inequalities for fibered surfaces via GIT*, Osaka J. Math., Vol. 45, No. 4 (2008), pp.1027–1041.
14. S. Busonero, M. Melo, L. Stoppino, *Combinatorial aspects of nodal curves*, “Le Matematiche”, vol. LXI (2006), Fasc. I, pp. 109–141.

Chapters in Volumes and Proceedings (with referees)

15. M. A. Barja, L. Stoppino, *Stability conditions for fibrations over curves*, volume 71 of Springer Proc. Math. & Stat., dedicated to K. Hulek, 2014, pp.1–40.
16. L. Stoppino, *Contribution to the Open Problems List*, to appear in a special volume of the Bollettino dell’UMI (Unione Matematica Italiana) dedicated to the Workshop “Birational Geometry of Surfaces”, 11–15 January 2016, Roma Tor Vergata.

Preprints on arXiv

17. M. A. Barja, R. Pardini, L. Stoppino, *Higher dimensional Clifford-Severi equalities*. Preprint arXiv:1806.03005 [math.AG]
18. M. A. Barja, L. Stoppino, *Stability and geometry of relative complete intersections*. Preprint arXiv: 1410.3009 [math.AG]

Written memoirs

- L. Stoppino, *Stability of maps to projective spaces, with applications to the slope of fibred surfaces*. Ph.D. Thesis Università di Pavia, Dottorato in Matematica e Statistica XVII Ciclo. a.a. 2004-2005. Relatore: Prof. Maurizio Cornalba.

Invited talks at international conferences

- 2018 6-15 September: **"Differential, Algebraic and Topological Methods in Complex Algebraic Geometry"**, Grand Hotel San Michele, Cetraro. *Irregular varieties on the Clifford-Severi lines*
- 2017 9 Oct: **Workshop Fibrations and second Fujita decomposition**, Dipartimento di Matematica dell'Università di Milano. *On the rank of the flat unitary summand of the Hodge bundle of a fibred surface.*
- 2016 Jan 11-15: Workshop **Birational Geometry of Surfaces**, Department of Mathematics of the University of Roma Tor Vergata.
Jan 20-22: **Workshop on Algebraic Geometry and Physics**, Villa del Grumello, Como.
April 11- 15: Workshop **Algebraic Surfaces and Moduli** KAIST, Daejeon (Korea). *Eventual properties of linear systems on irregular varieties.*
Feb 18-19: **Workshop "Geometria in Bicocca 2016"**, Milano Bicocca. *Linear systems on irregular varieties.*
- 2015 Sep 7-12: **XX congresso dell'UMI**, Siena, *Superfici sulla retta di Severi.*
- 2014 October: **Workshop on positivity of cycles**, Marrakech. Sponsored by Projet ANR "CLASS", *The Movable cone of cycles.*
January: Trieste. **Vector Bundles Days II**, *Stability and geometry of relative hypersurfaces.*
- 2010 December: **V Iberoamerican Congress on Geometry**, Pucòn, Chile. *Galois closures and Lagrangian varieties.*
- 2008 **Giornate genovesi II**, Genova. *On the slope of trigonal fibrations.*
- 2007 December: **Workshop of Algebraic Geometry** Seminario di Natale, Milano. *Fibrazioni di tipo generale secondo Campana.*
- 2006 May: Trieste, **Giornate di Geometria Algebrica ed argomenti correlati VIII**, *Disuguaglianze di slope per superficie fibrato: influenza dell'indice di Clifford e dell'irregolarità relativa.*

Invited seminars

- 2017 April: Genova, *New Severi inequalities for irregular varieties.*
- 2015 April: Milano, *Surfaces on the Severi line.*
- 2013 October: Roma Tre. *Geography of fibred varieties and stability.*
September: Milano Bicocca. *Geography of fibred varieties and stability.*
June: UB/UPC of Barcelona (Spain). *Stability conditions and invariants of fibrations.*
- 2011 April: Politecnico di Torino. *Stabilità e geografia di fibrazioni in dimensione alta.*
May: Pisa. *Indice di Clifford e stabilità.*
- 2010 October: Padova, *Stability conditions and inequalities for surfaces.*
- 2009 January: Pavia. *Galois closure and Lagrangian varieties, part II.*
- 2008 May: Bergen University (Norway). *Combinatorics of stable curves.*

- 2007 February-May: Roma Tre, sponsored by INDAM: **Seminario di Studio sulle varietà di dimensione n** . *Existence of minimal models, of Birkar-Cascini-Hacon-McKernan*
 May: Roma "La Sapienza". *Gonality of fibered surfaces*.
 UB/UPC (Barcelona), *Lower bounds for the slope of fibered surfaces: old and new*.
- 2006 May: Trento, *Influenza dell'indice di Clifford e dell'irregolarità relativa sulla slope di superficie fibrata*,
 April: Pisa, *Influenza dell'indice di Clifford e dell'irregolarità relativa sulla slope di superficie fibrata*.
- 2005 October: Università di Milano, *Una limitazione inferiore ottimale per la slope di fibrazioni doppie*.
 March: Roma Tre, *Limiti inferiori per la slope di superficie fibrata*.
- 2004 May: Pavia, *Disuguaglianze slope ottimali per famiglie generali di curve*
- 2003 January: Milano, *Sull'articolo di Gibney-Keel-Morrison, Towards the Ample cone of $\overline{M}_{g,n}$, parte I*.

Participation to schools and conferences (selection)

- 2018 (planned) Trieste Algebraic Geometry Summer School II: "Summer School on Geometry of Moduli Spaces of Curves", at ICTP, Trieste, Italy, June 18-22.
- 2017 Ph.D. Course "Groups of Symmetries", held by Prof. Lafforgue September -December, Dipartimento di Scienza e Alta Tecnologia, Università dell'Insubria.
 "Modern Algebra and Classical Geometry", Trento, Italy, on the occasion of Edoardo Sernesi's 70th birthday.
 GMT Commutative Algebra and Algebraic Geometry at Genova.
 18-19 September, Workshop "Algebraic Geometry in Torino".
- 2016 MANCA
- 2015 *Algebraic Geometry "Catanese 65"*, Bayreuth, Germany.
- 2014 *First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI*, Bilbao, Spain.
- 2013 *Classification of algebraic varieties and related topics*, Cetraro, Italy.
New Trends in arithmetic and geometry of algebraic surfaces, CIRM Luminy, France.
- 2010 *Perspectives on Algebraic Varieties* Levico Terme (Trento, Italia).
Conference Complex Algebraic Geometry Institut Henri Poincaré, Paris.
- 2008 *Oberwolfach-Seminar: Higher Dimensional Algebraic Geometry*. MFO, Germany.
School and Workshop on Aspects of Moduli, Centro De Giorgi e Scuola Normale Superiore, Pisa.
Winter school and conference on Moduli spaces, Max Plank Institute for Mathematics, Bonn, Germany.
- 2007 *Algebraic Geometry in Higher Dimensions*, Levico Terme, Trento.
Curves, abelian varieties and their interactions, a conference on the occasion of the 65th birthday of Roy Smith, Athens, Georgia.

- 2006 Topology of complex algebraic varieties, Alghero.
 “Birational Geometry of Varieties”, Università di Pisa.
- 2004 *PRAGMATIC 2004: Hyperbolicity of complex varieties*, Università di Catania.
Algebraic curves, monodromy and related topics, Politecnico di Milano.
Workshop on Deformation Theory, School for Advanced Studies e dall’Abdus Salam ICTP a Trieste.
- 2002 *The Fano Conference*, Torino.
EAGER 2002 Advanced school in Algebraic Geometry, Levico Terme, Trento.

Organization of Workshops and seminars

- 2018 member of the organizing committee of the School and Conference **Toposes in Como** School: 24-26 June 2018 - Conference: 27-29 June 2018 Lake Como School of Advanced Studies and Università degli Studi dell’Insubria.
 member of the Organizing and Scientific committee of the **Workshop on Complex Algebraic Geometry - Pirola 60th**, Barcelona (Spain), February 5-9 2018.
- 2017 13 December, open conference on “**Matematica e verità**” of Prof. Laurent Lafforgue, Pinacoteca Civica di Como.
 PhD School “**Linear systems on Irregular Varieties**”, Lake Como School of Advanced Studies, Villa del Grumello, Como, 5-9 June.
An Algebraic Geometry Day at Insubria, Dipartimento di Scienza e Alta Tecnologia, Università dell’Insubria, 6 July.
- 2015/16 Workshop “**Fibrations on Algebraic Varieties and Variation of Hodge Structure**” Milano, 25-26 May 2016.
 Joint Working seminars Milano-Pavia on *The Hodge bundle for varieties fibred over curves*. <http://stoppino.it/files/seminari-2015-16.htm>
- 2008– *Algebraic Geometry Seminars* at the University of Insubria.
- 2007/08 Working seminars in Roma Tre: **Seminario di Studio sulle varietà di dimensione n** (on the work of Birkar-Cascini-Hacon-McKernan).
- 2001/02 ToPMAG Seminars (Algebra and Geometry seminars held by Ph.D. students of Torino, Pavia e Milano).

Other academic activities

2018 23 March: member of the Committee for the Valuative Procedure for the call of an Associate Professor, SC 01/A2 - Geometria e Algebra (S.S.D. MAT/03 - Geometria), Dipartimento di Scienza e Alta Tecnologia, Università degli Studi dell'Insubria.

15 March: member of the Ph.D. jury at the Università degli Studi di Milano for the Ph.D. defenses of E. Coscelli, S. Noja, M. Ornaghi.

2015 -18 member of the commission PLS (Progetto Lauree Scientifiche) of the Department of Science and High Technology of Insubria University.

2013 - 18 Assistant to the CINECA "Test di verifica delle conoscenze di base" (test for verifying the basic skills) for scientific courses taken by high school students at the Insubria University.

Referee for Advances in Mathematics
 Collectanea Mathematica
 Compositio Mathematica
 Journal of Algebraic Geometry
 IMRN
 Le Matematiche (Catania)

Reviewer for Zentralblatt MATH

TEACHING ACTIVITY

Teaching at University of Pavia (from 2018):

- 2018-19 *Geometria e Algebra (Linear Algebra)* - 6CFU (Course of Biomedical Engineering),
Geometria 1 (General Topology)- 8CFU (1st year Math.)

Teaching at University of Insubria (from 2008 to 2018):

- 2018-19 *Geometria 1 (General Topology and intro to Algebraic Topology)* - 8CFU(2nd year Math.),
- 2017-18 *Geometria 1 (General Topology and intro to Algebraic Topology)* - 8CFU(2nd year Math.),
Topics in Advanced Geometry (Algebraic Topology)- 8CFU (3ty year Math.);
Exercise classes for *Algebra Lineare e Geometria*- 1CFU (1st year Math. and Physics);
- 2016-17 *Geometria 1 (General Topology and intro to Algebraic Topology)* - 8CFU(2nd year Math.),
Advanced Geometry (Introduction to Algebraic Geometry)- 8CFU (4-5ty year Math.);
Exercise classes for *Algebra Lineare e Geometria*- 1CFU (1st year Math. and Physics);
- 2015-16 *Geometria 1 (General Topology and intro to Algebraic Topology)* - 8CFU(2nd year Math.),
Istituzioni di Geometria Superiore (Algebraic Topology)- 8CFU (3ty year Math.);
- 2014-15 *Geometria 1* - 8CFU (2nd year Math),
Geometria Superiore (Riemann Surfaces and Algebraic Curves) - 8CFU(3rd and 4ty year Math.);
- 2013-14 *Geometria 1* (8CFU)(2nd year Math.),
Istituzioni di Geometria Superiore (Algebraic Topology) - 8CFU (3rd and 4ty year Math.);
- 2012-13 *Algebra Lineare, Mod. B* (2CFU), (1st year degree in Math. and Physics)
- 2011-12 Maternity leave.
Geometria Superiore (Algebraic plane curves) - 8CFU (4th year Math.);
- 2010-11 *Geometria Superiore (Riemann Surfaces and Algebraic Curves)* - 8CFU (4th year Math.);
- 2009-10 *Geometria 1 (General Topology)* - 8CFU (1st year Math);
Matematica Discreta , Mod. B (4CFU) (1st year Math. and Computer Science);
- 2008-09 *Geometria 1* - 8CFU (1st year Math);
- 2007-08 Exercise classes for *Geometria 1* (1st year Math) taught by Dr. Pigola;

Other teaching activities at Uninsubria

- Sep. 2015 PRECORSO di MATEMATICA: two weeks (of which I made one for a total of 15 hours) intensive course of mathematical basic knowledge for students enrolled in scientific courses at the University of Insubria.
- Feb. 2013 "Introduzione all'uso del programma di matematica dinamica GeoGebra: geometria euclidea e studio di funzioni" (with Dr. Monti), course for high school Math teachers.
- Sep. 2010 PRECORSO di MATEMATICA (15 hours).

Students

- 2018-19 I am currently supervising one graduate students for the Master degree in Mathematics (Laurea Magistrale) at Insubria,
- G. Ceriani: (*Severi inequality for surfaces of maximal Albanese dimension*), expected July 2019.
and two undergraduate students for the degree in Mathematics (Laurea Triennale).
- D. Panzeri *Il lemma zig-zag e alcune applicazioni*.
- D. Furchi *La coomologia di fasci*.
- 2017-18
- M. Simone: (*Monodromy of rational dominant maps and Galois closures*), December 2018.
- 2016-17 - Post doc Student: Dr. Andrea Cattaneo, Assegno di Ricerca Junior "Fibred irregular surfaces", November 2016- November 2017.
- G. Ceriani (Laurea Triennale): (*Curve algebriche piane*) October 2017.
- M. Simone (Laurea Triennale): (*Il Teorema di Van-Kampen dimostrato con i rivestimenti*), November 2016.
- 2013 I was co-advisor of the Ph.D. Thesis in Physical and Mathematical Sciences of S. A. Filippini. Title "*Rigid Calabi-Yau threefolds and Hodge structures of Calabi-Yau type*" Advisor: Dr. Sergio L. Cacciatori.
- 2011 A. Pisoni (Laurea Triennale): "*Varietà affini e proiettive e loro morfismi*".
- 2010 Local advisor (relatore interno) for the Master Thesis in Mathematics of A. Berti "*On the parity conjecture*". Advisor: Prof. Massimo Bertolini.

Teaching 2000-2008

University of Pavia:

- 2008-09 exercise classes for *Introduzione alla Topologia Algebrica* held by Dott. Pernazza, exercise classes for *Geometria e Algebra* (degree in Engineering) held by Dott. Bonsante.
- 2005-06 exercise classes for *Geometria e Algebra* (degree in Engineering) held by Prof. Grieco;
- 2004-05 exercise classes for *Geometria e Algebra* (degree in Engineering) taught by Prof. Brivio; exercise classes for *Algebra lineare* taught by Prof. Cornalba; exercise classes for the course *Analisi B* taught by Prof. Boella at the Politecnico of Milano;
- 2003-04 *Algebra*, exercise classes for *Teoria dei gruppi e sue applicazioni* taught by Prof. Frediani;

University of Pavia:

- 2002-03 exercise classes for *Teoria dei gruppi e sue applicazioni* taught by Prof. Frediani;
- 2001-02 exercise classes for *Algebra* taught by Prof. van Geemen, *Curve e superficie* taught by Prof. Demichelis;
- 1998-00 tutoring for the course *Algebra*, degree in Math, taught by Prof. van Geemen.

University of Roma Tre:

- 2006-07 teaching seminars for the course *Geometria Algebrica I (GE7)* held by Dott. Knutsen.

University of Roma La Sapienza:

- 2006-07 exercise classes for *Algebra Lineare* held by Prof. Arbarello and Prof. Manetti.

PhD Courses

- 2016 20/06– 10/07: Assistant of Prof. Pirola at the 2016 edition of PRAGMATIC at the University of Catania.

Spoken languages

- Italian mother-tongue
English spoken fluently, written and read
French basics

Pavia, April 4, 2019