

Prof Francesco Zucconi

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EMPLOYMENT	Università degli Studi di Udine, Italia Associate Professor	2005–2016
	Università degli Studi di Udine, Italia Lecturer	1996–2004
LONG TERM	DPMMS, Cambridge, United Kingdom	Sept 2003–Feb 2004
ACADEMIC VISITS	Visiting Lecture; awarded a grant from CNR-OTAN to spend 6 months at DPMMS-Cambridge (United Kingdom)	
	DPMMS, Cambridge, United Kingdom Visiting Lecture (on leave from Università degli Studi di Udine) awarded a grant from Royal Society-Accademia dei Lincei to do research in Great Britain for the year 2000-2001	Sept 2000–Dec 2002
	St Edmund's College, Cambridge, United Kingdom Visiting Scholar of the St Edmund' s College	Sept 2001–Sept 2002
	Newton Institute, Cambridge, United Kingdom Invited by the director of the Newton Insitute, Prof. J. Kingman, to partecipate to the program <i>Higher Dimensional Complex Geometry</i>	Feb 2001–July 2002
SHORT TERM	Math Department, University of Bristol, England	Feb 2016
ACADEMIC VISITS	Invited as a Visiting Professor.	
	Steklov Institute, State University-HSE, Moscow, Russia Invited as a Visiting Professor.	Oct 2015
	Max Planck Institute for Mathematics, Bonn, Germany Invited as a Visiting Professor.	Feb 2014
	RICAM, Linz, Austria Prof. Josef Schicho invited me as visiting Professor at at Radon Institute (RICAM), Austrian Academy of Sciences Linz, Austria.	Jan 2014
	CIRM, Trento, Italy Research in pairs fellowship to do research at CIRM-Department of Mathematics.	Sep 2013
	RICAM, Linz, Austria Prof Josef Schicho invited me as visiting Professor at at Radon Institute (RICAM), Austrian Academy of Sciences Linz, Austria.	June 2013
	Graduate School, The University of Tokyo, Japan Invited by prof. Hiromichi Takagi as visiting professor at Graduate school of Mathematical Sciences, The University of Tokyo.	Jan–Feb 2012
	CRM, Barcelona, Spain Awarded of a grant by the CRM-Barcelona to work at CRM for one month.	June 2009
	Graduate School, The University of Tokyo, Japan Invited by prof. Hiromichi Takagi as visiting professor at Graduate school of Mathematical Sciences, The University of Tokyo.	Feb 2009

	Math. Dep. University of Warwick, United Kingdom	Jan 2008–Ap 2008
	Invited by Prof. Miles Reid as a visiting professor at the Math. Dep. of the University of Warwick.	
	Math. Dep., University of Kent United Kingdom	Prof. Gavin Brown Invited to the Workshop "Birational Geometry and grdb" at University of Kent Math. Dep., Sept. 2005
	Math. Sci. Inst., Canberra, Australia	Jan 2003
	Invited to the 2003 - <i>Special Year on Algebraic Geometry and Topology</i> within the Mathematical Sciences Institute of the Australian National University.	
	Dep. de Mat. ETSEIB. Universitat Politècnica de Catalunya	Sept 2001–Nov 2001
	Visiting Professor (on leave from Università degli Studi di Udine) invited by Universitat Politècnica de Catalunya	
	Dep. de Mat. ETSEIB. Universitat Politècnica de Catalunya	Feb-1998
	Visiting Professor, invited by Universitat Politècnica de Catalunya	
SHORT TERM APPOINTMENTS	Politecnico di Torino, Torino Italy	1996-1997
	Post Doctoral fellowship to do research at Dipartimento di Matematica del Politecnico di Torino.	
	Consiglio Nazionale delle Ricerche	1995-1996
	Visiting researcher at the Dipartimento di Matematica of Università degli Studi di Pisa.	
EDUCATION	Università degli Studi di Pisa, Pisa, Italia	1994
	PhD Pure Mathematics (Algebraic Geometry)	
	Università degli Studi di Pisa, Pisa, Italia	1990
	Laurea 110/110 summa cum laude Pure Mathematics (Algebraic Geometry)	
	Liceo Scientifico Barsanti e Matteucci, Viareggio, Italia	1983
	Diploma di maturità Scientifica 60/60	
STUDENTS	I'm supervisor of the Ph.D. student Luca Rizzi. I've been involved in the Ph.D. thesis of M.Á. Barja. I've been involved in the preparation of several Master's theses and I have been supervisor of the following Master's theses all of which have obtained the perfect score:	
	Paolo Dolce , Master's thesis, <i>On projective varieties defined over $\overline{\mathbb{Q}}$.</i>	Aa. 2013- 2014
	Luca Rizzi , Master's thesis, <i>Il teorema dell'aggiunta per varietà algebriche.</i>	Aa. 2012- 2013
	Luca Ceserano , Master's thesis, <i>Una nuova dimostrazione del teorema di Torelli mediante la teoria dell'aggiunta.</i>	Aa. 2011- 2012
	Umberto Garra , Master's thesis, <i>Fasci di torsione su curve iperellittiche e problema di Torelli per Superficie Algebriche.</i>	Aa. 2003- 2004
PUBLICATIONS	1. Generalized adjoint forms on algebraic varieties, Ann.Mat. Pura e Applicata ,(2016), Article in press. Joint with Luca Rizzi (Udine, Italy).	
	2. Birational rigidity of Fano 3-folds and Mori dream spaces, Adv. in Math. vol. 292 ,(2016), 410–445. Joint with Hamid Ahamadinezhad (Bristol, United Kingdom).	

3. Circle of Sarkisov links on a Fano 3-fold, **Proc. Edinburgh Math. Soc.**, accepted (2014), arXiv:1304.6009, Joint with Hamid Ahamadinezhad (Bristol, United Kingdom).
4. A note on Harris Morrison sweeping families, **Collect. Math.** 66 (2015), no. 2, 191–202. Joint with Valentina Beorchia (Trieste, Italy).
5. On Subcanonical Gorenstein Varieties And Apolarity. **J. Lond. Math. Soc.** (2) 87 (2013), no. 3, 819–836. Joint with Pietro De Poi (Udine, Italy).
6. Geometries of lines and conics on the quintic del Pezzo threefold and its application to varieties of power sums, **Mich. Math. Jour.**, vol. 61, (2012) p. 19–62. Joint with Hiromichi Takagi (Tokyo, Japan).
7. The moduli space of genus 4 even spin curves is rational, **Adv. in Math.**, vol. 231, (2012) p. 2413–2449. Joint with Hiromichi Takagi (Tokyo, Japan).
8. Spin curves and Scorza quartics, **Math. Annalen**, 349 N. 3, (2011) p. 623–645. Joint with Hiromichi Takagi (Tokyo, Japan).
9. Fermat hypersurfaces and subcanonical curves, **Int. Journal of Math.**, vol. 22, (2011) p. 1763–1785. Joint with Pietro De Poi (Udine, Italy).
10. Gonality, apolarity and hypercubics, **Bull. of LMS.**, vol. 45, (2011) p. 849–858. Joint with Pietro De Poi (Udine, Italy).
11. Graded rings of rank 2 Sarkisov links, **Nagoya Math. Journal**, vol. 197, (2008), 1–44. Joint with Gavin Brown (Canterbury, United Kingdom).
12. Very Ampleness and the infinitesimal Torelli problem, **Math. Zeitsch.**, vol. 260, 31–46. Joint with Umberto Garra (Udine, Italy).
13. Birational Geometry of 3-fold Mori Fiber Space, **Proceed. of the The Fano Conference. Torino** (2003), 235–275. Joint with Gavin Brown (Canterbury, United Kingdom) and Alessio Corti (Cambridge, United Kingdom).
14. Polygonal cycles in higher Chow groups of Jacobians, **Ann. Mat. Pura e Applicata**, vol. 183, (2004) 387–399. Joint with Juan Carlos Naranjo (Barcellona, Spain) and Gian Pietro Pirola (Pavia, Italy).
15. Surfaces with $p_g = q = 2$ and an irrational pencil, **Canad. J. Math.**, Vol 55, n. 3 (2003) 649–672.
16. Generalized Hyperelliptic Surfaces, **Trans. Amer. Math. Soc.**, Vol 355 (2003), 4045–4059.
17. Variations of the Albanese Morphism, **Journal of Algebraic Geometry**, Vol 2 (2003) 535–572. Joint with Gian Pietro Pirola (Pavia, Italy).
18. Abelian Covers and Isotrivial Canonical Fibrations, **Communic. in Alg.**, vol 29, n.12, (2001) 5641–5671.
19. On The Slope of Fibred Surfaces, **Nagoya Math. Journal**, vol. 164, (2001), 103–131. Joint with Miguel Ángel Barja (Barcellona, Spain).
20. A note on a conjecture of Xiao, **Journ. Math. Soc. Japan**, vol 52, n. 3, (2000), 632–635. Joint with Miguel Ángel Barja (Barcellona, Spain).
21. Numerical inequalities for surfaces with canonical map composed with a pencil, **Indag. Math.** N.S. 9 n. (3) (1998) 459–476.
22. A Note on a theorem of Horikawa, **Revista Matemática de la Universidad Complutense de Madrid** vol. 10, n. 2, (1997), 277–295.
23. Surfaces with Canonical Map Of Degree Three and $K^2 = 3p_g - 5$, **Osaka J. Math.**, Vol 34, (1997) , 411–428.

SUBMITTED
ARTICLES

1. The rationality of the moduli space of 1-pointed even spin hyperelliptic curves via an almost del Pezzo threefold 3-fold, 23 pages with H. Takagi.
2. A note on Torelli-type theorems for Gorenstein curves 17 pages arXiv:1603.09080
Submitted.
Joint with Luca Rizzi (Udine Italy).
3. Differential forms and quadrics of the canonical image 23 pages, arXiv:1409.1826
Submitted.
Joint with Luca Rizzi (Udine Italy).
4. On a slope conjecture for the fourgonal locus 20 pages, arXiv:1209.3571
Submitted.
Joint with Valentina Beorchia (Trieste Udine).

WORK IN
PROGRESS

1. *The rationality of the moduli space of ineffective spin hyperelliptic curves* , 30 pages with H. Takagi.
2. *Geometries of certain \mathbb{Q} -Fano 3-folds and the rationality of certain moduli spaces*, 66 pages. with H. Takagi.
3. *The rationality of spin genus-4 theta null loci*, 25 pages. with H. Takagi.
4. *On the moduli space of spin genus 5 curves* , 56 pages. with H. Takagi.
5. *On Schur sextics and and Clebsh cubics*, 15 pages.
6. *The slope conjecture for rational basis*, 16 pages. Joint with Valentina Beorchia (Trieste Udine).
7. *On a Green's theorem and the adjoint theorem*, 35 pages Joint with Luca Rizzi (Udine Italy).

GRANTS &
AWARDS

- **Visiting Professor**, State University-Higher School of Economics, Moscow, Russia, October 2015.
- **Guest Researcher**, Max Planck Institute for Mathematics, Bonn, Germany, February 2014.
- **EMS School New Perspectives on the classification of Fano Manifolds** , 29/09-03/10/2014 awarded with Pietro De Poi of a european grant to organise an European Mathematical School, Lecturers Alessio Corti and Yuri Prokhorov.
- **Abilitazione** On December 23 th. 2013, I was awarded of the title of *Abilitato* to enter the role of full professor in italian academy.
- **Research in pairs**, joint with Hamid Ahamadinezhad – CIRM, Trento, Italy, Sept 2013.
- **Visiting Professor** Prof. Hiromichi Takagi invited me as visiting Professor at Graduate school of Mathematical Sciences, The University of Tokyo January - March 2012.
- **Mathematisches Forschungsinstitut Oberwolfach** Invited at the Meeting "Complex Algebraic Geometry" at the "Mathematisches Forschungsinstitut Oberwolfach", Germany 25/09-30/09 2011
- **CRM-Grant** Awarded of a grant by the CRM-Barcelona to work at CRM for one month. June 2009.
- **Visiting Professor** Prof. Hiromichi Takagi invited me as visiting Professor at Graduate school of Mathematical Sciences, The University of Tokyo 10/02/09–25/02/09.
- **Visiting Lecturer** Prof. Miles Reid invited me as a long term visiting lecturer of the Math. Dep. of the University of Warwick, Jan 2008– April 2008
- **Confirmed in the role of associate professor** November 2008.
- **Mathematisches Forschungsinstitut Oberwolfach** Invited at the Meeting "Surfaces with low invariants" , at the "Mathematisches Forschungsinstitut Oberwolfach", Germany, Feb 2004.

- **Visiting Lecturer** Prof. Miles Reid and Prof. Amnon Neeman invited me to the 2003 -*Special Year on Algebraic Geometry and Topology* within the Mathematical Sciences Institute of the Australian National University, August 2003.
- **CNR-OTAN** Scholarship to do research at DPMMS Cambridge (United Kingdom) Sept 2003-Feb 2004.
- **Visiting Lecturer** Prof. Miguel Ángel Barja invited me to visit "Departament de Matemàtica Aplicada I. ETSEIB. Universitat Politècnica de Catalunya" Sept 2001 to Nov 2001.
- **Visiting Scholar at St Edmund's College** In June 2001 I was accepted by the Tutorial Committee of the St Edmund's College as Visiting Scholars for the period September 2001–September 2002.
- **Royal Society- Accademia dei Lincei** Scholarship to do research in Great Britain under the supervision of Dr. A. Corti at DPMMS Cambridge on 3-Folds theory. Sept 2000–Dec 2002.
- **Confirmed in the role of lecturer** June 2000.
- **Mathematisches Forschungsinstitut Oberwolfach** Invited at the Meeting "Complex Geometry: Varieties of low Dimensions" at the Mathematisches Forschungsinstitut Oberwolfach, Germany, August 22-28 1999.
- **PhD Studentship** to do research on "Fibrations of algebraic surfaces"
Two years funding at the Politecnico di Torino 1996-1998;
I was appointed as Lecturer at the Università di Udine on June 1997.
- **C.N.R.** Scholarship to do research after PhD 1995–1996.

TEACHING
EXPERIENCE

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|-----|--|-----------|
| 1. | University of Udine
Topology, Elementary Projective Geometry, Complex Differential Geometry. | 2015-2016 |
| 2. | University of Udine
Linear Algebra, Basic Geometry, Algebraic Topology. | 2014-2015 |
| 3. | University of Udine
Projective Geometry, Topology, Differential Geometry. | 2013-2014 |
| 4. | University of Udine
Linear Algebra, Basic Geometry, Differential Geometry, Complex Analysis. | 2012-2013 |
| 5. | University of Udine
Differential Geometry, Complex Analysis. | 2011-2012 |
| 6. | University of Udine
Complex Analysis, Differential Geometry, Algebraic Topology. | 2010-2011 |
| 7. | University of Udine
Projective Geometry, Topology, Basic Algebraic Geometry. | 2009-2010 |
| 8. | University of Udine
Linear Algebra, Basic Geometry, Complex Analysis. | 2008-2009 |
| 9. | University of Udine
Projective Geometry, Topology, Differential Geometry, Complex Analysis. | 2007-2008 |
| 10. | University of Udine
Linear Algebra, Basic Geometry, Differential Geometry, Complex Analysis. | 2006-2007 |
| 11. | University of Udine
Linear Algebra, Projective Geometry, Algebraic Geometry. | 2005-2006 |
| 12. | University of Udine
Differential Geometry, Algebraic Geometry I, Algebraic Geometry II. | 2004-2005 |

13. **University of Udine** 2003-2004
Projective Geometry, Algebraic Geometry I, Complex Analysis.
14. **University of Udine** 2002-2003
Exercises classes on Linear algebra for computer scientist, Exercises classes on Linear algebra Basic Geometry, and Projective Geometry, Algebraic Geometry I, Algebraic Geometry PhD-course
15. **University of Barcellona** 2000-2001
Ten hours on the infinitesimal invariant.
16. **University of Udine** 1999-2000
Linear algebra, Basic Geometry
17. **University of Udine** 1998-1999
Exercises classes on Linear algebra for computer scientist, Exercises classes on Linear algebra and on Basic Geometry.
18. **University of Udine** 1997-1998
Exercises classes on Linear algebra, on Basic Geometry, on Projective Geometry and on Topology.

INVITED
TALKS

1. On the rationality problem for the moduli space of hyperelliptic curves with an ineffective thêtacharacteristic and the geometry of a singular del Pezzo 3-fold *Workshop on Birational Geometry*, Department of Mathematics of the Warwick University, England, February 11, 2016.
2. Two Lectures on the existence of Scorza quartics *Algebraic group seminar*, Department of Mathematics Università di Catania, Catania, Italy, January 19 and 20, 2016.
3. Sul problema della razionalità per alcuni spazi di moduli delle curve spin, *Algebraic group seminar*, Department of Mathematics Università di Pavia, Pavia, Italy, December 3, 2015.
4. The rationality of some moduli spaces of curves and the birational geometry of some Fano 3-folds *Math. Dep. Seminar* Mathematical Department of State University-Higher School of Economics Moscow, Russia, October 17, 2015.
5. On the rationality problem for moduli space of spin hyperelliptic curves with one marked point and of other special moduli of curves *Steklov Mathematical Institute Seminar* Steklov Mathematical Institute Moscow, Russia, October 16, 2015.
6. Generalised Adjoint forms of Algebraic varieties *School (and Workshop) on Finite Subgroups of Cremona Groups* CIRM-Department of Mathematics, University of Trento, Trento, Italy, August 29, 2015.
7. Volume Forms *INdAM Italian-Korean Meeting on Algebraic Geometry 2015* Palazzone di Cortona, Cortona (Italy), June 29-July 3, 2015.
8. Mori dream spaces and maps between Mori fibrations, *Landau-Ginzburg Theory and Fano Varieties* IBS-CGP, Gyeongju, Korea, May 26 - 30, 2014.
9. Birational rigidity of Fano 3-folds and Mori dream spaces, *Seminario congiunto*, CIRM-Department of Mathematics, University of Trento, Trento, Italy, September 30, 2013.
10. On a slope conjecture for the fourgonal locus *Workshop on New Trends in Algebraic Geometry*, Department of Mathematics Università della Calabria, Cosenza, Italy, June 12-14, 2013.
11. Geometry of Certain \mathbb{Q} -Fano Threefolds and The Rationality of some Moduli Spaces *Workshop on Higher Dimensional Algebraic Geometry*, Department of Mathematics, National Taiwan University, Taipei, Taiwan March 25-29, 2013.
12. Two ray links and the rationality of some moduli spaces, *Algebraic group seminar*, Department of Mathematics of SISSA, Trieste, Italy February 21, 2012.
13. Congettura di Sforza e trifogli di Fano, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Milano March 2010.

14. Curve trigonali e curve razionali sul trifoglio di del Pezzo, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Genova March 2010.
15. On genus 12 Fano 3-folds, *2007-08 Warwick EPSRC Algebraic Geometry Symposium Explicit methods for 3-folds*, Department of Mathematics of The Warwick University, England, March 2008.
16. Hilbert schemes of lines and of conics on blow-ups of the del Pezzo 3-fold, *-08 Warwick EPSRC Algebraic Geometry Symposium, HD MMP Workshop*, Department of Mathematics of The Warwick University, England, December 2007.
17. On a Conjecture of Dolgachev and Kanev, *Ciclo di Conferenze TULS, SISSA-Trieste*, June 2007.
18. Graded Rings of rank 2 Sarkisov Link, *Giornate Genovesi I, Istituto Nazionale di Alta Matematica*, Department of Mathematics of the Università degli Studi di Genova October 2006.
19. Fano's of codimension 3 and toric geometry, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Genova, April 2004.
20. Surfaces isogenous to a product, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Trieste, April 2004.
21. The adjoint theorem, *Mathematisches Forschungsinstitut Oberwolfach meeting on Surfaces with low invariants*, Oberwolfach, Germany, February 2004.
22. Birational Geometry of Mori fiber spaces, *Special Year on Algebraic Geometry and Topology*, Mathematical Sciences Institute of the Australian National University, Canberra, Australia, January 2003.
23. Fano's of codimension 3, *Geometry group seminar*, Department of Mathematics of The University of Lubiana, Lubiana, Slovenia, March 2003.
24. Links di Sarkisov per 3-varietà di codimensione 3, *Algebraic group seminar*, Department of Mathematics of The University of Ferrara, October 2002;
25. The regulator map after Collino, *Algebraic group seminar*, DPMMS Cambridge, Cambridge, United Kingdom, Luglio 2002;
26. Infinitesimal invariant and moduli of irregular variety, *Algebraic group seminar*, Department of Mathematics of The University of Barcellona, Barcellona, Spain, November 2001
27. Generalized Hyperelliptic Surfaces, *Conference in honour of Pietro Greco* Department of Mathematics of The University of Catania, Catania, Italy April 2001.
28. The Number of Moduli of Irregular Varieties, *Algebraic group seminar*, DPMMS Cambridge, Cambridge, United Kingdom, February 2001
29. Abelian Covers and Canonical Fibrations, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Milano, February 2000.
30. The Slope of a Fibred Surface, *Workshop on Algebraic Surfaces, Furore*, October 1999.
31. Moduli di Varietà Irregolari, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Trieste, Trieste, Italia, April 2004.
32. The Adjoint Map on a Manifold, *Singularities in Algebraic Geometry?*, Department of Mathematics of the University of Lille, Lille, France, June 1999;
33. Fibrizioni di Tipo Generale, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi Pavia, Pavia, Italia, October 1998;
34. Isotrivial Canonical Fibrations, *Algebraic group seminar*, Department of Mathematics of The University of Barcellona, Barcellona, Spain, February, 1998.
35. Surfaces with $K^2 = 3p_g - 5$ and Canonical Map of degree 3, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Trento, September 1997.

36. Fibrazioni di una Superficie su di una Curva I, *Geometry group seminar*, Department of Mathematics of the Politecnico di Torino, Torino, Italia June 1997.
37. Fibrazioni di una Superficie su di una Curva II, *Geometry group seminar*, Department of Mathematics of the Politecnico di Torino, Torino, Italia, June 1997.
38. Fibrazioni di una Superficie su di una Curva III, *Geometry group seminar*, Department of Mathematics of the Politecnico di Torino, Torino, Italia, July 1997.
39. Superficie con applicazione canonica di grado tre, *Conference for young algebraic geometers* Department of Mathematics of the Università degli Studi dell'Aquila,, l'Aquila, Italia, May 1995.
40. Sulle Superficie con Mappa Canonica Composta con un Fascio, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Pisa, Pisa, Italia, January 1995.
41. Superficie Speciali non Canoniche, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Pisa, Pisa, Italia, October 1993.
42. Sul Teorema di Enriques-Petri, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Pisa, Pisa, Italia, January 1993.
43. Sulle Tassellazioni di una Superficie di Riemann, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Pisa, Pisa, Italia, November 1991.
44. Sul Gruppo degli Automorfismi di una Superficie di Riemann, *Algebraic group seminar*, Department of Mathematics of the Università degli Studi di Pisa, Pisa, Italia, October 1991.

FAMILY I'm married with Elena Todisco since 2004 and we have a 10 years old boy: Alessandro.

LANGUAGES Italian (Mother Tongue), English (Fluent), Spanish (Basic).