

CURRICULUM VITAE

(October 2020)

ACADEMIC DEGREES

–Undergraduate studies in Mathematics in Universidad Complutense (Madrid) from 1980 to 1985, getting the *premio extraordinario de licenciatura* (best degree in Mathematics among all students graduating that year).

–PhD degree in Mathematics at Universidad Complutense on May 24, 1990. Title of the dissertation: *On congruences of lines in the projective space*, written under the advise of Ignacio Sols, marked with *Apto cum Laude* (maximum possible degree), getting the *premio extraordinario de doctorado*.

JOBS IN THE UNIVERSITY

–Predoctoral fellowship from the Spanish Ministry of Education to prepare the PhD in Mathematics in Univeridad Complutense, from 1 January 1986 to 30 September 1989.

–Non-permanent contract as an assistant teacher in the Mathematics Institute of the Universidad Complutense from 1 October 1989 to 16 October 1990.

–Provisional contract occupying a tenure position (until the position is decided in an open competition) from 17 October 1990 to 27 July 1992.

–Tenure position as an assistant professor in the Mathematics Institute of Universidad Complutense since 28 July 1992.

PUBLICATIONS

–*Classification of smooth congruences of low degree*, with Ignacio Sols, in *Journal für die reine und angewandte Mathematik*, 393 (1989), 199-219.

–*On regular and stable ruled surfaces*, with Manuel Pedreira and Ignacio Sols, in *Proceedings of “Algebraic Curves and Projective Geometry”* (Trento, March 21-25 1988), *Springer Lecture Notes in Mathematics*, 1389 (1989), 1-15.

–*Proof of Schubert conjectures on double contacts*, with Raquel Mallavibarrena and Ignacio Sols, in *Proceedings of the conference “Enumerative Geometry”* (Sitges, June 1-7 1987), *Springer Lecture Notes in Mathematics*, 1436 (1990), 1-29.

–*On congruences of lines in the projective space*, with Ignacio Sols, *Mémoires de la Société Mathématique de France* No 50 (1992).

–*Bounding sections of bundles on curves*, with Ignacio Sols, in *Proceedings of the conference “Projective varieties”* (Trieste, June 19-24 1989), *Mathematical Society Lecture Notes Series*, 179 (1992), 24-31.

–*On smooth surfaces in $G(1, \mathbf{P}^3)$ with a fundamental curve*, with Mark Gross, *Manuscripta Mathematica*, 79 (1993), 283-298.

–*Classification of smooth congruences with a fundamental curve*, with Marina Bertolini and Cristina Turrini, in “*Projective Geometry with applications*” (ed. E. Ballico), *Marcel Dekker* (1994), 43-56.

–*Subvarieties of Grassmannians*, *Lecture Note Series Dipartimento di Matematica Univ. Trento*, 10 (1996).

–*Global moduli for contacts*, with Ignacio Sols and Robert Speiser, *Arkiv för Matematik*, 35 (1997), 1-57.

–*Parametric generalized offsets to hypersurfaces*, with Juana Sendra and J. Rafael Sendra, *Journal of Symbolic Computation*, 23 (1997), 267-285.

–*The universal rank- $(n - 2)$ bundle on $G(1, n)$ restricted to subvarieties*, *Collectanea Mathematica*, (special issue dedicated to F. Serrano), 49 (1998), 173-183.

–*Congruences of small degree in $G(1, 4)$* , with Marina Bertolini and Cristina Turrini, *Communications in Algebra*, 26 (10) (1998), 3249-3266. With an appendix by E. Arrondo: *Pfaffian linkage in codimension three and applications to congruences*, pp. 3267-3274.

–*Projections of Grassmannians of lines and characterization of Veronese varieties*, *Journal of Algebraic Geometry*, 8 (1999), 85-101.

–*Genus formula for generalized offset curves*, with Juana Sendra and J. Rafael Sendra, *Journal of Pure and Applied Algebra*, 136 (1999), 199-209.

- *Vector bundles on $G(1, 4)$ without intermediate cohomology*, with Beatriz Graña, Journal of Algebra, 214 (1999), 128-142.
- *Quadric bundle congruences in $G(1, n)$* , with Marina Bertolini and Cristina Turrini, Forum Mathematicum, 12 (2000), 649-666.
- *Vector bundles on Fano 3-folds without intermediate cohomology*, with Laura Costa, Communications in Algebra, 28 (8) (2000), 3899-3911.
- *A focus on focal surfaces*, with Marina Bertolini and Cristina Turrini, Asian Journal of Mathematics, 5, No.3 (2001), 535-560.
- *Line congruences of low order*, Milan Journal of Mathematics, 70 (2002), 223-243.
- *La correspondencia de Serre hecha a mano*, in *Homenaje al profesor Outerelo*, Contribuciones Matemáticas, UCM (2004), 61-72.
- *Subcanonicity of codimension two subvarieties*, Revista Matemática Complutense, 18 (2005), 69-80.
- *Classification of n -dimensional subvarieties of $G(1, 2n)$ that can be projected to $G(1, n + 1)$* , with José Carlos Sierra and Luca Ugaglia, Bulletin of the London Mathematical Society, 37 (2005), 673-682.
- *Characterization of Veronese varieties via projections in Grassmannians*, with Raffaella Paoletti, in *Projective varieties with unexpected properties* (eds. Ciliberto, Geramita, Miró-Roig, Ranestad), De Gruyter (2005), 1-12.
- *Focal loci in $G(1, n)$* , with Marina Bertolini and Cristina Turrini, Asian Journal of Mathematics, 9 (4) (2005), 449-472.
- *Another elementary proof of the Nullstellensatz*, American Math. Monthly, 113 (2) (2006), 169-171.
- *Congruences on $G(1, 4)$ with split universal quotient bundle*, with Beatriz Graña, Journal of Geometry and Physics, 56 (6) (2006), 1057-1067.
- *Evidence to subcanonicity of codimension two submanifolds of $G(1, 4)$* , with Maria Lucia Fania, International Journal of Mathematics, 17 (2006), 157-168.
- *Vector bundles with no intermediate cohomology on Fano threefolds of type V_{22}* , with Daniele Faenzi, Pacific Journal of Mathematics, 225(2) (2006), 201-220.
- *A hand-made Hartshorne-Serre correspondence*, Revista Matemática Complutense, 20 (2007), 423-443.
- *Curves and bundles on the quartic threefold*, with Carlo Madonna, Journal of the Korean Mathematical Society, 46 no.3 (2009), 589-607.
- *On the Picard group of low-codimension subvarieties*, with Jorge Caravantes, Indiana University Mathematics Journal, 58(3) (2009), 1023-1050.

–*On the ampleness of the normal bundle of line congruences*, with Marina Bertolini and Cristina Turrini, accepted in Forum Mathematicum.

–*On the stability of the universal quotient bundle restricted to congruences of low degree of $G(1,3)$* , with Sofía Cobo, Annali della Scuola Normale Superiore di Pisa Cl. Sci. (5) Vol. IX (2010), 503-522.

–*Cohomological Characterization of Vector Bundles on Grassmannians of Lines*, with Francesco Malaspina, Journal of Algebra, 323 (2010), 1098-1106.

–*Schwarzenberger bundles of arbitrary rank on the projective space*, Journal of the London Mathematical Society, 82 (2010), 697-716 .

–*On the variety parametrizing completely decomposable polynomials*, with Alessandra Bernardi, Journal of Pure and Applied Algebra, 215 (2011), 201-220.

–*On the ampleness of the normal bundle of line congruences*, with Marina Bertolini and Cristina Turrini, Forum Mathematicum, 23 (2011), 223-244.

–*A notion of Delta-multigenus for certain rank two ample vector bundles*, with Antonio Lanteri and Carla Novelli, Kodai Mathematical Journal, 36 (2013), 137-153.

–*Jumping pairs of Steiner bundles*, with Simone Marchesi, Forum Mathematicum, 27 (2015), 3233-3267.

–*Schwarzenberger bundles on smooth projective varieties*, with Helena Soares and Simone Marchesi, Journal of Pure and Applied Algebra, 220 (2016), no. 9, 3307-3326.

PREPRINTS

–*The Nullstellensatz without the Axiom of Choice*, arXiv:2009.02837.

–*Representation theory of finite groups through (basic) algebraic geometry*, arXiv:2009.02774

STAYS ABROAD (of at least one month)

–Mittag-Leffler Institute in Djursholm (Sweden) in the year 1986/87 devoted to Algebraic Geometry, under a fellowship of the Royal Swedish Academy of Sciences.

–University of Paris VI under the direction of Christian Peskine from April 20 to June 30 1989 and from February 20 to June 12 1991, the first time under a fellowship of the Spanish Ministry of Education.

–Mathematical Sciences Research Institute in Berkeley (USA) in the year 1992/93 devoted to Algebraic Geometry, under a fellowship of the Universidad Complutense.

–CNR fellowship for a stay at Università degli Studi di Milano in September 1993 to work with Marina Bertolini and Cristina Turrini.

–Institut Henri Poincaré (Paris), March and May 1995 (semester “Riemann surfaces and vector bundles”).

–Università degli Studi di Milano in April 1995 to work with Marina Bertolini and Cristina Turrini.

–Università di Trento in March and April 1996, invited by Edoardo Ballico.

–Università degli Studi di Milano in May 1996, to work with Marina Bertolini and Cristina Turrini.

–Università degli Studi di Milano from 20 February till 30 April 1998, to work with Marina Bertolini and Cristina Turrini.

–CNR fellowship for a stay at Università degli Studi di Trieste in May 1998 to work with Emilia Mezzetti and Dario Portelli.

–Università degli Studi di Trieste in March 2000 to work with Emilia Mezzetti, Dario Portelli and Pietro De Poi.

–CNR fellowship for a stay at Università degli Studi di Firenze in April-May 2000, to work with Giorgio Ottaviani and Raffaella Paoletti.

–Università di Roma 3 in June 2000 to work with Alessandro Verra.

–Università degli Studi di Milano from 15 March till Maggio 2001 to work with Marina Bertolini and Cristina Turrini.

–CNR fellowship for a stay at Università degli Studi di Firenze in June 2001, to work with Giorgio Ottaviani and Raffaella Paoletti.

–Università degli Studi di Milano from 15 February till 30 April 2004 to work with Marina Bertolini and Cristina Turrini.

–CNR fellowship for a stay at Università degli Studi di Firenze from 1 May till 20 July 2004, to work with Giorgio Ottaviani and Raffaella Paoletti.

–CNR fellowship for a stay at Università di Genova in June 2007, to work with Lucian Bădescu.

–Université de Pau, May 2010, to work with Jean Vallès and Daniele Faenzi.

–Universidade Estadual de Campinas, April 2016, to work with Simone Marchesi.

COURSES TAUGHT ABROAD

–PhD course in Superfici di Riemann at Università degli Studi di Milano in April 1995.

–PhD course *Geometria Algebrica* at Università degli Studi di Milano dal 15 Febbraio al 30 Aprile 1998.

–Summer course of Algebraic Geometry at Scuola Matematica Interuniversitaria (Perugia, 1998).

–PhD course *Varietà algebriche* at Università degli Studi di Firenze in April-May 2000.

–PhD course *Varietà proiettive* at Università degli Studi di Milano in March–May 2001.

–Summer course of Algebraic Geometry at Scuola Matematica Interuniversitaria (Perugia, 2001).

–PhD course “Fibrati vettoriali” at Università degli Studi di Milano in February–April 2004.

–Summer course of Algebraic Geometry at Scuola Matematica Interuniversitaria (Perugia, 2007).

–Summer course of Algebraic Geometry at Scuola Matematica Interuniversitaria (Perugia, 2011).

–Summer course of Algebraic Geometry at Scuola Matematica Interuniversitaria (Perugia, 2016).

THESIS

–Graduation thesis *Cohomología de Haces Coherentes sobre Grassmannianas de Rectas*, of Ines Quandt (co-advised with Werner Kleinert), at Humboldt University, Berlin, 23 April 1993.

–PhD thesis *Matrices de Gram y espacios de ángulos diédricos de poliedros*, of Raquel Díaz, at Universidad Complutense de Madrid, 5 July 1996.

–PhD thesis *Projection of subvarieties of Grassmannians of lines*, of Luca Ugaglia, at Università degli Studi di Milano, 11 January 2001.

–PhD thesis *Escisión de fibrados en $G(1, 4)$ y sus variedades*, of Beatriz Graña Otero, at Universidad Complutense de Madrid, 24 January 2003.

–PhD thesis *Proyecciones en Grassmannianas e inmersiones dobles de Veronese*, of José Carlos Sierra, at Universidad Complutense de Madrid, 26 April 2004.

–Graduation thesis *Formule di Plücker per curve algebriche contenute in una quadrica*, of Cristina di Girolami (coadvised with Mirella Manaresi), at Università di Bologna, 16 July 2004.

–PhD thesis *Geometría enumerativa de superficies regladas racionales*, of Cristina Martínez Ramírez, at Universidad Autónoma de Madrid, 13 October 2005.

–PhD thesis *Sobre el grupo de Picard en subvariedades de codimensión pequeña*, of Jorge Caravantes, at Universidad Complutense de Madrid, 10 January 2006.

–PhD thesis *Estabilidad del fibrado universal restringido a congruencias*, of Sofía Cobo, at Universidad Complutense de Madrid, 26 March 2008.

–PhD thesis *Ulrich bundles and varieties of wild representation type* of Juan Francisco Pons-Llopis, at Universitat de Barcelona, coadvised with Rosa María Miró-Roig, 21 June 2011.

–PhD thesis *Jumping spaces in Steiner bundles*, of Simone Marchesi, at Università degli Studi di Milano (joint with Universidad Complutense de Madrid, and coadvised with Antonio Lanteri), 20 de February 2012.

–PhD thesis *Cohomological characterization of universal bundles of the Grassmannian of lines*, of Alicia Tocino-Sánchez, at Universidad Complutense de Madrid, 22 July 2015.

OTHER MERITS

–Co-organizer of the workshop *Intersection Theory*, Madrid 13-18 July 1992.

–Organizer of the *Europroj Annual Conference 1998*, Toledo 22-27 September 1998.

–Co-organizer of the *Workshop on Global Geometry of Algebraic Varieties*, Madrid 19-21 December 2002.

–Co-organizer of the *Workshop on Algebraic Geometry of Algebraic Varieties*, Madrid 17-19 December 2009.

–Editor of *Europroj* from September 1993 till September 1996.

–Editor-in-chief of *Revista Matemática Complutense* from September 1999 till January 2004 (and previously editor since October 1998).

–Co-editor of the book “Liaison, Schottky Problem and Invariant Theory. Remembering Federico Gaeta” (M.E. Alonso, E. Arrondo, R. Mallavibarrena, I. Sols eds.), *Progress in Mathematics*, Birkhuser 2010 (ISBN 978-3-0346-0200-6).

–Member of the *Scuola Matematica Interuniversitaria* since October 2003.

–Coordinator of the Master Program of Advanced Mathematics at Universidad Complutense de Madrid since October 2011 till March 2021.