

## NICOLA TARASCA

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FIELDS INSTITUTE FOR RESEARCH IN MATHEMATICAL SCIENCES  
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### POSITIONS

- Jul-Dec 2016    Fields Postdoctoral Fellow at the FIELDS INSTITUTE, Canada.  
2013 – 2016    Research Assistant Professor Lecturer at the UNIVERSITY OF UTAH, USA.  
2011 – 2013    Postdoctoral position at the LEIBNIZ UNIVERSITY HANNOVER, Germany.

### EDUCATION

- 2008 – 2012    Ph.D. in Mathematics at the HUMBOLDT UNIVERSITY IN BERLIN and at the BERLIN MATHEMATICAL SCHOOL, Germany, under the supervision of Prof. Gavril Farkas.  
Ph.D. thesis: *Geometric cycles in moduli spaces of curves*, defended in April 2012. Honor: *magna cum laude*.  
2006 – 2008    *Master en Mathématiques Fondamentales* at the UNIVERSITY PIERRE AND MARIE CURIE in Paris (Paris VI), France. I graduated with highest honor (*Trés Bien*) in June 2008.  
Master thesis: *Seshadri constants of Abelian varieties*, written under the supervision of Prof. Marc Hindry.  
2003 – 2006    *Laurea Triennale* in Mathematics at the UNIVERSITY OF TOR VERGATA IN ROME, Italy.  
I graduated with highest honor (110/110 *e Lode*) in July 2006.

### RESEARCH INTERESTS

Algebraic Geometry: the geometry and intersection theory of moduli spaces of curves, Hurwitz theory, vector bundles and problems of Brill–Noether type, spin structures on curves, curves on surfaces.

### PAPERS

- ◇ Du Val curves and the pointed Brill-Noether Theorem (*with* Gavril Farkas), *preprint*, ARXIV:1606.02725.
- ◇ Extremality of Weierstrass points on genus-two curves (*with* Dawei Chen), *submitted*, ARXIV:1510.08061.
- ◇ Loci of curves with subcanonical points in low genus (*with* Dawei Chen), *to appear in* MATHEMATISCHE ZEITSCHRIFT.
- ◇ Divisors of secant planes to curves, JOURNAL OF ALGEBRA 454 (2016), PP. 1–13.
- ◇ Pointed Castelnuovo numbers (*with* Gavril Farkas), MATHEMATICAL RESEARCH LETTERS 23:2 (2016), PP. 389–404.
- ◇ Double total ramifications for curves of genus 2, INTERNATIONAL MATHEMATICS RESEARCH NOTICES 19 (2015), PP. 9569–9593.
- ◇ Brill–Noether loci in codimension two, COMPOSITIO MATHEMATICA 149:09 (2013), PP. 1535–1568.
- ◇ Double points of plane models in  $\overline{\mathcal{M}}_{6,1}$ , JOURNAL OF PURE AND APPLIED ALGEBRA 216:4 (2012), PP. 766–774.
- ◇ Geometric cycles in moduli spaces of curves, PH.D. THESIS, Humboldt University in Berlin.

### SCHOLARSHIPS, GRANTS, AND AWARDS

- 2016 – 2018 *AMS-Simons Travel Grant*.
- 2016 *Outstanding Postdoc Award* from the Department of Mathematics at the University of Utah.
- 2012 *Oberwolfach Leibniz Graduate Students* travel grant from the Oberwolfach Research Institute for Mathematics.
- 2008 – 2011 *Ph.D. scholarship* from the DFG Graduiertenkolleg 870 Berlin–Zürich and from the Berlin Mathematical School.
- 2004 – 2006 *Merit scholarship* from the Science Department of the University of Tor Vergata in Rome. Classified *first* in order of *merit* in 2006.

### TALKS

#### Talks at conferences:

- May 2016 *Asymptotic invariants attached to linear series* at Pedagogical University in Cracow, Poland.
- Apr 2016 *AMS Special Session on Algebraic Geometry* at University of Utah, USA.
- Jan 2016 *JMM: AMS Special Session on Moduli Spaces in Algebraic Geometry* in Seattle, USA.
- Nov 2015 *AMS Special Session on Modern Schubert Calculus* at Rutgers University, New Brunswick, USA.
- Jul 2015 *AMS Summer Institute in Algebraic Geometry* at University of Utah, USA.
- Jun 2015 *AMS–EMS–SPM International Meeting* in Porto, Portugal.
- Feb 2014 *Workshop on birational geometry and stability of moduli stacks and spaces of curves* at VIASM in Hanoi, Vietnam.
- Feb 2013 *Moduli Spaces in Algebraic Geometry* in Oberwolfach, Germany.
- Sep 2012 *Deutschen Mathematiker–Vereinigung: Jahrestagung* in Saarbrücken, Germany.
- May 2012 *Giornate di Geometria Algebrica e Argomenti Correlati* in Pisa, Italy.
- Nov 2011 *North German Algebraic Geometry Seminar* in Hannover, Germany.
- Jun 2010 *Géométrie Algébrique en Liberté XVIII* in Coimbra, Portugal.

#### Talks at seminars:

USA: Boston College (Mar 2014), Colorado State University (May 2014), Northeastern University (Oct 2015), University of California, Berkeley (Apr 2014), University of California, San Diego (Jun 2014), University of Illinois at Chicago (Oct 2015), University of South Carolina (Sep 2015), University of Utah (Jan 2015, Sep 2013).

GERMANY: Freie University in Berlin (Jan 2012), Humboldt University in Berlin (Jun 2015, Feb 2011), Leibniz University Hannover (Jun 2013).

ITALY: University of Rome 3 (Oct 2011).

### SERVICE

- ◇ Referee for ADVANCES IN GEOMETRY, ARCHIV DER MATHEMATIK, CONTEMPORARY MATHEMATICS OF THE AMS, INTERNATIONAL MATHEMATICS RESEARCH NOTICES, JOURNAL OF ALGEBRAIC GEOMETRY, JOURNAL OF PURE AND APPLIED ALGEBRA, MATHEMATISCHE ZEITSCHRIFT, PROCEEDINGS OF THE AMS, SELECTA MATHEMATICA.
- ◇ Co-organizer of the *Algebraic Geometry Research Seminar* at the University of Utah, 2014 – 2016.
- ◇ Trainer at the *Teaching Assistants Training Workshop* at the University of Utah in summer 2015.
- ◇ Co-organizer of the conferences *Géométrie Algébrique en Liberté (GAeL) XIX* in Berlin, Germany, in 2011, and *GAeL XX* in Grenoble, France, in 2012.
- ◇ Co-organizer of the reading seminar on *Fundamental Algebraic Geometry* at the Humboldt University in Berlin in winter 2010.
- ◇ Student representative at the board of the Berlin Mathematical School, 2008 – 2009.

### TEACHING

#### At the University of Utah:

- Spring 2016 Lecturer for *Engineering Calculus II*. Tasks: preparing and delivering lectures; preparing weekly quizzes, midterms, and final exam. This is a class with more than 50 students.
- Fall 2015 Lecturer for *Engineering Calculus I*. Tasks: preparing and delivering lectures; preparing weekly quizzes, midterms, and final exam. This is a class with more than 80 students.
- Spring 2015 Lecturer for *Calculus II*. Tasks: preparing and delivering lectures; preparing weekly quizzes, midterms, and final exam. This is a class with more than 70 students.
- Fall 2014 Lecturer for *Calculus I*. Tasks: preparing and delivering lectures; preparing weekly quizzes, midterms, and final exam. This is a class with more than 100 students.
- Spring 2014 Lecturer for *Introduction to Differential Equations*. Tasks: preparing and delivering lectures; preparing and grading weekly quizzes, midterms, and final exam.
- Fall 2013 Lecturer for *Accelerated Engineering Calculus 2*. Tasks: preparing and delivering lectures; preparing and grading weekly quizzes, midterms, and final exam.

#### At the Leibniz University Hannover:

- Spring 2013 Teaching assistant for *Calculus 2 for Engineers*. Tasks: grading monthly partial exams.
- Winter 2013 Teaching assistant for *Calculus 1 for Engineers*. Tasks: weekly lectures for two classes.
- Spring 2012 Teaching assistant for *Calculus 2 for Engineers*. Tasks: weekly lectures for two classes.
- Winter 2012 Teaching assistant for *Calculus 1 for Engineers*. Tasks: weekly lectures for two classes.

#### At the Humboldt University in Berlin and the Berlin Mathematical School:

- Winter 2010 Teaching assistant for *Algebraic Geometry I*. Tasks: preparing and delivering weekly lectures; preparing and grading homework assignments.
- Spring 2009 Tutor of the Berlin Mathematical School Team for the International Mathematics Competition. Participation at the work of the Jury at the IMC 2009, Budapest, Hungary.

### LANGUAGES

Italian as mother tongue. Fluent in English and French. Intermediate level in German and Polish.

### ATTENDED CONFERENCES AND SCHOOLS

- ◇ *Asymptotic invariants attached to linear series*, Pedagogical University in Cracow, Poland, May 2016.
- ◇ *AMS Special Session in Algebraic Geometry*, University of Utah, USA, April 2016.
- ◇ *Higher Codimension Cycles on Algebraic Varieties*, University of Illinois at Chicago, USA, March 2016.
- ◇ *Moduli Spaces of Holomorphic Differentials*, HU Berlin, Germany, February 2016.
- ◇ *JMM 2016: Special Session on Moduli Spaces in Algebraic Geometry*, Seattle, USA, January 2016.
- ◇ *AMS Special Session on Modern Schubert Calculus*, Rutgers University, New Brunswick, USA, November 2015.
- ◇ *Western Algebraic Geometry Seminar (WAGS)*, University of Washington (October 2015), University of California, Davis (February 2015), University of Idaho (October 2014), University of Colorado at Boulder (April 2014), UCSD (November 2013).
- ◇ *Algebraic Geometry Northeastern Series (AGNES)*, Brown University (October 2015), Boston College (March 2015).
- ◇ *AMS Summer Institute in Algebraic Geometry*, University of Utah, USA, July 2015.
- ◇ *AMS-EMS-SPM International Meeting*, Porto, Portugal, June 2015.
- ◇ *Summer School in Gromov-Witten Theory*, Pingree Park (CO), USA, June 2014.
- ◇ *Workshop on Birational Geometry and Stability of Moduli Stacks and Spaces of Curves*, VIASM, Hanoi, Vietnam, February 2014.
- ◇ *Szygies in Berlin*, Berlin, Germany, May 2013.
- ◇ *North German Algebraic Geometry Seminar (NoGAGS)*, Hannover (May 2013, November 2011, June 2010), FU Berlin (December 2012, November 2009), Hamburg (May 2012, April 2009), HU Berlin (May 2011), Oldenburg (November 2010), Göttingen (October 2008).
- ◇ *Moduli Spaces in Algebraic Geometry*, Oberwolfach, Germany (February 2013, January 2010).
- ◇ *Log Minimal Model Program for Moduli Spaces*, AIM, Palo Alto, USA, December 2012.
- ◇ *Geometry and Topology of Moduli*, HU Berlin, Germany, October 2012.
- ◇ *Annual Meeting of the German Mathematical Society*, Saarbrücken, Germany, September 2012.
- ◇ *Algebraic and Complex Geometry*, Hannover, Germany, September 2012.
- ◇ *School on Algebraic Geometry and Theoretical Physics*, Warwick, UK, July 2012.
- ◇ *Géométrie Algébrique en Liberté (GAeL)*, Grenoble, France (June 2012), Berlin, Germany (July 2011), Coimbra, Portugal (June 2010), Leiden, Holland (June 2009).
- ◇ *Giornate di Geometria Algebrica e Argomenti Correlati*, Pisa, Italy, May 2012.
- ◇ *Intersection Theory on the Moduli Space of Curves*, KTH Stockholm, Sweden (April 2012), HU Berlin, Germany (October 2010).
- ◇ *Summer School in Algorithmic Mathematics*, Berlin, Germany, October 2011.
- ◇ *Singularities and Monodromy*, Hannover, Germany, October 2011.
- ◇ *A Celebration of Algebraic Geometry*, Harvard University, USA, August 2011.
- ◇ *Moduli of Curves and Gromov-Witten Theory*, Grenoble, France, June 2011.
- ◇ *School on Moduli Spaces*, Cambridge, UK, January 2011.
- ◇ *Young Researchers in Arithmetic and Algebraic Geometry*, Mainz, Germany, October 2010.
- ◇ *Workshop on Elliptic Fibrations and K3 Surfaces*, HU Berlin, Germany, July 2010.
- ◇ *IMPANGA Summer School on Algebraic geometry*, Będlewo, Poland, July 2010.
- ◇ *Complex Algebraic Geometry*, HU Berlin, Germany, October 2009.
- ◇ *Algebraic Torus Actions*, Łukęcin, Poland, September 2009.
- ◇ *Hodge Theory and Algebraic Geometry*, Trento, Italy, September 2009.
- ◇ *Moduli*, HU Berlin, Germany, August 2009.
- ◇ *Vector Bundles on Algebraic Curves (VBAC)*, FU Berlin, Germany, June 2009.
- ◇ *Leopoldina-Symposium in Algebraic and Arithmetic Algebraic Geometry*, Ascona, Switzerland, May 2009.
- ◇ *International Summer School in Mathematics*, Perugia, Italy, August 2006.