

Giulia Saccà, curriculum vitae

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Research Interests: Algebraic geometry (hyperkähler and Calabi-Yau manifolds, $K3$ surfaces, cubic hypersurfaces, moduli spaces of sheaves)

Positions

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| 2018–present | Assistant Professor, Columbia University |
| 2017–2018 | Assistant Professor, MIT (on leave 2018–2019 and 2019–2020) |
| 2013–2017 | James H. Simons Instructor, Stony Brook University |
| 2014–2015 | Member, School of Mathematics, Institute for Advanced Study (IAS), Princeton |

Education

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| Princeton University | PhD. Mathematics, 2008–2013 Advisor: Gang Tian; Thesis: <i>Fibrations in abelian varieties associated to Enriques surfaces</i> |
| Università di Roma, La Sapienza | M.S. in Mathematics, 2006–2008 Advisor: Enrico Arbarello; Master thesis: <i>Stability and Moduli spaces</i> B.S. in Mathematics, 2003–2006 |

Honors, awards, grants

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| April 2018 | <i>NSF Grant DMS–1801818</i> , Hyper-Kähler Geometry via Lagrangian Fibrations and Symplectic Resolutions |
| November 2017 | <i>Anna Maria Molteni Award for Mathematics and Physics</i> , Italian Scientist and Scholars of North America Foundation (ISSNAF) |
| January 2015 | <i>Federigo Enriques prize 2014</i> , Unione Matematica Italiana (UMI) |
| 2008–2013 | <i>Centennial Fellowship</i> , Princeton University |
| Spring 2008 | <i>Master 2 fellowship</i> , Fondation Sciences Mathématiques de Paris |
| September 2006 | <i>First prize national competition</i> , Istituto Nazionale di Alta Matematica (INdAM) |

Publications and preprints

1. M. de Cataldo, A. Rapagnetta, and G. Saccà, *The Hodge numbers of O'Grady's 10-dimensional example*, **in preparation**.
2. K. Hulek, R. Laza, and G. Saccà, *A note on the Euler number of OG_{10}* , preprint available at <https://arxiv.org/pdf/1902.00781.pdf>
3. J. Kollár, R. Laza, G. Saccà, and C. Voisin, *Degeneration of Calabi–Yau and hyperkähler manifolds*, Accepted by **Ann. Inst. Fourier**
4. G. Mongardi, A. Rapagnetta, and G. Saccà, *The Hodge diamond of O'Grady's 6-dimensional example*, **Compos. Math.** 154 (2018), no. 5, 984–1013
5. R. Laza, G. Saccà, and C. Voisin, *A hyper-Kähler compactification of the Intermediate Jacobian fibration associated to a cubic fourfold*, **Acta Mathematica**, 218:1 (2017), 55–135
6. E. Arbarello, A. Bruno, G. Farkas, and G. Saccà, *Explicit Brill-Noether-Petri general curves*, **Comment. Math. Helv.** 91 (2016), no. 3, 477–491
7. E. Arbarello and G. Saccà, *Singularities of moduli spaces of sheaves on K_3 surfaces and Nakajima quiver varieties*, **Adv. Math.** 329 (2018), 649–703.
8. G. Saccà, *Relative compactified Jacobians of linear systems on Enriques surfaces*, 48 pages. **Trans. of AMS**, published electronically, <https://doi.org/10.1090/tran/7591>
9. E. Arbarello, G. Saccà and A. Ferretti, *Relative Prym varieties associated to the double cover of Enriques surfaces*, **J. Differential Geom.** 100 (2015), no. 2, p. 191–250.

Invited Lectures

Selected invitations

1. *ICM Satellite conference "Moduli Spaces in Algebraic Geometry and Applications"*, Campinas, Brazil, July 26–31 2018
2. *Fourth Duke Mathematical Journal Conference*, Duke University, Durham, NC, April 26–29 2018
3. *Géométrie algébrique*, Collège de France, Paris, Oct 3–5 2016
4. *Satellite conference of 7ECM, Algebraic Geometry*, Leibniz Universität, Hannover, July 13–16 2016

Colloquium talks

1. Columbia University, January 2018;
2. Scuola Internazionale Superiore di Studi Avanzati (SISSA), Trieste, June 2017;
3. Johannes Gutenberg-Universität, Mainz, June 2017;
4. University of Duke, Durham, Feb 2017;
5. University of California, San Diego, Jan 2017;
6. University of Massachusetts, Amherst, Jan 2017;
7. Bonn Universität, Bonn, Dec 2016;
8. Boston

College, Boston, Dec 2016; 9. Purdue University, West Lafayette, Dec 2016; 10. Rice University, Houston, Nov 2016; 11. University of Illinois, Chicago, Nov 2016; 12. University of Utah, Salt Lake City, Nov 2016; 13. University of Stony Brook, Stony Brook, Nov 2016; 14. University of Boulder, Colorado, April 2016

Conferences and workshops

1. *Japanese European Symposium on symplectic varieties and moduli spaces*, ETH, Zürich, June 2019 upcoming;
2. *Workshop: Graduate Summer School on the Mathematics and Physics of Hitchin Systems* Simons Center for Geometry and Physics (SCGP), May 2019, upcoming;
3. *The 26th SCGAS Southern California Geometric Analysis Seminar*, University of California, San Diego January 26-27, 2019;
4. *BIRS Workshop on Moduli Spaces: Birational Geometry and Wall Crossings*, Banff, Canada, October 2018;
5. *Texas Algebraic Geometry Symposium 2018*, Texas AM, April 2018;
6. *Workshop on Algebraic Varieties, Hodge Theory and Motives*, Fields Institute, Toronto, March 2018;
7. *Algebraic Geometry Conference, Beauville's 70th*, Morningside Center of Mathematics (MCM), Beijing, October 2017;
8. *Second Japanese-European Symposium on Symplectic Varieties and Moduli Spaces*, Levico Terme, Italy, September 2017;
9. *Hodge Theory, Moduli and Representation Theory*, SCGP, Stony Brook, August 2017;
10. *WAGS, Western Algebraic Geometry Seminar*, University of British Columbia, Vancouver, April 2017;
11. *GAGS, The Georgia Algebraic Geometry Symposium*, University of Georgia, Athens, March 2017;
12. *BC-Northeastern Algebraic Geometry Conference*, Boston College, Oct 15 2016;
13. *Derived categories and Chow groups of hyperkaehler and Calabi–Yau varieties*, Simons Center for Geometry and Physics, Stony Brook, Sept 19–23 2016;
14. *Higher Dimensional Algebraic Geometry*, University of Utah, Salt Lake City, July 18-26 2016;
15. *Algebraic cycles and moduli*, Centre de Recherche Mathématique (CRM), Montreal, June 2-8 2016;
16. *Algebraic Geometry and Representation Theory in Rome*, Università di Roma La Sapienza, December 2015;
17. *Workshop of Algebraic Geometry*, Seminario di Natale, Università degli Studi di Milano, December 2015;
18. *Southern California Algebraic Geometry Seminar*, UCLA, December 2015;
19. *Singular curves on $K3$ surfaces and hyperkähler manifolds*, Oberwolfach (miniworkshop), November 2015;
20. *Recent developments in Moduli theory and GIT*, University of North Carolina at Chapel Hill, November 2015;
21. *Algebraic Geometry*, Oberwolfach, March 2015;
22. *AGNES, Algebraic Geometry Northeastern Seminar*, University of Pennsylvania, Philadelphia, October 2014;
23. *Ateliers Franco-Chinois on stability theory*, Institut Fourier, Grenoble, June 2014;
24. *Giornate di Geometria Algebrica ed Argomenti Correlati XII*, Politecnico di Torino, June 2014;
25. *Hodge Theory in String Theory*, Fields Institute, Toronto, November 2013;
26. *Geometry of Algebraic Varieties*, Special Session at AMS Sectional meeting, Temple University, Philadelphia, October 2013;
27. *Advances in hyperkähler and holomorphic symplectic geometry*, BIRS, Banff, Canada, March 2012

Seminar talks

1. UIC, Algebraic Geometry Seminar, February 2019, *up coming*;
2. Northwestern University, Algebraic Geometry Seminar, March 2019, *up coming*;
3. Columbia Algebraic Geometry seminar, December 2017;
4. Harvard–MIT Algebraic Geometry seminar, September 2017;
5. University of Maryland, College Park, April 2017;
6. Stanford University, Palo Alto, December 2016;
7. University of Utah, Salt Lake City, November 2016;
8. Pennsylvania State University, State College, November 2016;
9. University of Michigan, Ann Arbor, November 2016;
10. University of Illinois in Chicago, November 2016;
11. Rice University, Houston, October 2016;
12. Duke University, Durham, September 2016;
13. Stony Brook University, Stony Brook, September 2016;
14. Northeastern University, Boston, April 2016;
15. Colorado

State University, Fort Collins, April 2016; 16. John Hopkins, Baltimore, March 2016; 17. Yale University, New Haven, February 2016; 18. Università di Bologna, Bologna, January 2016; 19. Stony Brook University, December 2015; 20. Ecole Normal Supérieur, Paris, November 2015; 21. Contributed talk, parallel session, AMS Summer Institute in Algebraic Geometry, Salt Lake City, July 2015; 22. University of Maryland, May 2015; 23. Harvard–MIT Algebraic Geometry seminar, April 2015; 24. Symplectic Geometry seminar, IAS, Princeton, January 2015; 25. Università di Trento, January 2015; 26. University of Southern California, November 2014; 27. IAS, Princeton, October 2014; 28. Università di Pisa, June 2014; 29. Università di Roma La Sapienza, June 2014; 30. UIC, Chicago, April 2014; 31. University of Massachusetts, Amherst, April 2014; 32. Johannes Gutenberg Universität, Mainz, January 2014; 33. University of Utah, December 2013; 34. Stony Brook University, September 2013; 35. Columbia University, April 2013; 36. Ohio State University, January 2013; 37. Harvard–MIT Algebraic Geometry seminar, December 2012; 38. Insitut de Mathématique de Jussieu, Paris, October 2012

Teaching

Columbia University: • Linear Algebra, Fall 2018; • Calculus III, Spring 2019

MIT: • Algebraic Geometry I, Fall 2017; • Algebraic Geometry II, Spring 2018

Stony Brook University: • MAT 614, Topics in Algebraic Geometry: *Moduli Spaces of Sheaves*, Fall 2016; • MAT 312 / AMS 351 (Applied Algebra), Spring 2016, Spring 2017; • MAT 125 (Calculus), Spring 2016; • MAT 126 (Calculus), Spring 2014; • MAT 123 (pre-Calculus), Fall 2013, Fall 2015

Princeton University: • Linear Algebra, Spring 2012

Service

• Referee for several mathematical journals. • Thesis committee for Qixao Ma, April 2019, *up coming* • Graduate mini-course *Hilbert scheme of points on surfaces*, MIT, Spring 2018 • Qualifying exam for Araminta Gwynne (with M. Hopkins and R. Melrose), MIT, May 2018 • Thesis reader and committee member for the thesis defense of David Stapleton (with E. Arbarello, S. Grushevsky, and R. Lazarsfeld), April 2017 • Oral examination committee for Michael Albanese (with C. Le Brun and B Lawson), October 2015 • TA for minicourse *Birational invariants* (by C. Voisin), Women and mathematics, Institute for Advance Study, IAS, Princeton, June 2015 • co-organizer of several activities in the special program *Topology of Algebraic Varieties*, Institute for Advance Study, IAS, Princeton, 2014–2015 • Minicourse on K -stability, Bootcamp of the AMS Summer Institute, SLC, July 2015 • co-organizer of activities (two mini-courses and one workshop) for the program *Brill–Noether theory in the study of hyper-Kähler and Calabi-Yau manifolds*, Junior program in Algebraic geometry, Hausdorff Research Institute for Mathematics (HIM), Bonn, Spring 2014 • 2h lecture *Hilbert schemes and hyper-Kähler Manifolds*, graduate student workshop *Geometry of Hilbert schemes*, Simons Center for Geometry and Physics (SCGP), Stony Brook, November 2013 • Master Thesis Committee for Enrica Floris, student of Andreas Höring, Insitut de Mathématique de Jussieu, 2010