Gabriele Di Cerbo

Personal Data

Address:	Princeton University Department of Mathematics Princeton NJ USA
Phone:	+1 505 428 8280
email:	dicerbo@math.princeton.edu

Positions

Current Sep 2017	Assistant Professor, Princeton University *Princeton NJ*
Jul 2017 Sep 2013	Ritt Assistant Professor, Columbia University *New York NY*

Education

July 2013 Sep 2009	PhD Degree in Mathematics, Princeton University, Princeton NJ Thesis: "Effective boundedness results in algebraic and analytic geometry" Advisor: Prof. János Kollár
July 2009	Master of Science in Mathematics, University of Rome "La Sapienza", Rome
July 2008 Sep 2005	Undergraduate Degree in Mathematics, 110/110 *summa cum laude*, University of Rome "La Sapienza", Rome Thesis: "Characteristic classes" Advisor: Prof. Kieran G. O'Grady

Papers

1. *Birational boundedness of elliptic Calabi-Yau varieties with a section*, with Caucher Birkar and Roberto Svaldi, in preparation.
2. *Rational curves on Calabi-Yau threefolds in positive characteristic*, with Roberto Svaldi, in preparation.
3. *Asymptotic growth of global sections on open varieties*, arXiv:1909.08757, 2019.
4. *Birational boundedness of rationally connected klt Calabi–Yau 3-folds*, with W. Chen, J. Han, C. Jiang and R. Svaldi, arXiv:1804.09127 [math.AG], 2018.
5. *Birational boundedness of low dimensional elliptic Calabi-Yau varieties with a section*, with Roberto Svaldi, arXiv:1608.02997.v2 [math.AG], 2017.
6. *On Seshadri constants of varieties with large fundamental group*, with Luca F. Di Cerbo, Ann. Sc. Norm. Super. Pisa Cl. Sci. (5) Vol. XIX (2019), 335-344.
7. *On Fujita's spectrum conjecture*, Adv. Math. 311 (2017), 238-248.

8. *On the canonical divisor of smooth toroidal compactifications*, with Luca F. Di Cerbo, Math. Research Letters (2017), no.4, 1005-1022.
9. *On Fujita's log spectrum conjecture*, Math. Ann. 366 (2016), no. 1-2, 447-457.
10. *Effective Matsusaka's theorem for surfaces in characteristic p*, with Andrea Fanelli, Algebra Number Theory 9 (2015), no. 6, 1453-1475.
11. *A sharp cusp count for complex hyperbolic surfaces and related results*, with Luca F. Di Cerbo, Arch. Math. (Basel) 103 (2014), no. 1, 75-84.
12. *Effective results for complex hyperbolic manifolds*, with Luca F. Di Cerbo, J. Lond. Math. Soc. (2) 91 (2015), no. 1, 89-104.
13. *Positivity in Kähler-Einstein theory*, with Luca F. Di Cerbo, Math. Proc. Cambridge Philos. Soc. 159 (2015), no. 2, 321-338.
14. *Uniform bounds for the Iitaka fibration*, Ann. Sc. Norm. Super. Pisa Cl. Sci. (5) 13 (2014), no. 4, 1133-1143.
15. *A cohomological interpretation of Bogomolov instability*, Proc. Amer. Math. Soc. **141** (2013), 3049-3053.
16. *Remarkable identities related to the Riemann zeta function*, Atti Accad. Naz. Lincei Cl. Sci. Fis. Mat. Natur. Rend. Lincei (9) Mat. Appl. 18 (2007), 343-349.

Honors, Awards, & Fellowships

- Teaching Award E-Council School of Engineering and Applied Science 2020.
- MSRI Research Membership Spring 2019.
- NSF grant DMS-1817309, 2017-2020.
- AMS-Simons travel grant, 2016-2018.
- Princeton University, Centennial Fellowship, 2009-2013.
- University of Rome "La Sapienza", Tuition Scholarship, 2008-2009.
- University of Rome "La Sapienza", Adisu prize for distinguished students, 2008.
- University of Perugia, Scholarship, summer 2008.
- University of Rome "La Sapienza", Tuition Scholarship, 2005-2008.

Seminars and Conference Presentations

1. *Birational boundedness of elliptic Calabi-Yau varieties*, Algebraic Geometry Seminar, John Hopkins University, October 29, 2019.
2. *Birational boundedness of elliptic Calabi-Yau varieties*, Algebraic Geometry Seminar, University of Rome "La Sapienza", July 17, 2019.
3. *Birational boundedness of elliptic Calabi-Yau varieties*, WAGS, University of California at Berkeley, April 14, 2019.
4. *Newton-Okounkov bodies of pseudo-effective (1,1) classes on Kahler manifolds*, AMS Sectional Meeting, University of Hawaii at Manoa, March 23, 2019.

5. *Rational curves on Calabi-Yau threefolds in positive characteristic,* Algebraic Geometry seminar, NYU, January 29, 2019.
6. *Rational curves on Calabi-Yau threefolds in positive characteristic,* Algebraic Geometry seminar, UCLA, January 19, 2019.
7. *Boundedness of elliptic Calabi-Yau manifolds,* Department Colloquium, UCLA, January 18, 2019.
8. *Rational curves on Calabi-Yau threefolds in positive characteristic,* Algebraic Geometry seminar, John Hopkins University, December 07, 2018.
9. *Boundedness of elliptic Calabi-Yau manifolds,* Algebraic Geometry seminar, Stony Brook, September 08, 2018.
10. *Boundedness of elliptic Calabi-Yau manifolds,* University of Oxford, May 22, 2018.
11. *Are there finitely many families of elliptic Calabi-Yau manifolds in fixed dimension?,* Conference "Geometry and Physics of F-theory", BIRS, Banff, January 22, 2018.
12. *On boundedness of some algebraic fiber spaces,* Algebraic Geometry seminar, Princeton University, October 3, 2017.
13. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry seminar, SISSA, August 2, 2017.
14. *On Seshadri constants of varieties with large fundamental group,* AMS Sectional Meeting, Hunter College, May 6, 2017.
15. *Log birational boundedness of Calabi-Yau pairs,* Cambridge-Tokyo Algebraic Geometry Workshop, University of Cambridge, March 17, 2017.
16. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry seminar, Imperial College, March 15, 2017.
17. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry seminar, Columbia University, March 3, 2017.
18. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry seminar, University of Washington, February 21, 2017.
19. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry seminar, Yale University, February 16, 2017.
20. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry seminar, Harvard/MIT, December 6, 2016.
21. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry seminar, University of Georgia, November 16, 2016.
22. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry seminar, NYU, October 18, 2016.
23. *Log birational boundedness of Calabi-Yau pairs,* Math-Physics Joint Seminar, University of Pennsylvania, October 13, 2016.
24. *Birational geometry of complex hyperbolic manifolds,* Algebraic Geometry Seminar, Boston College, October 6, 2016.
25. *Log birational boundedness of Calabi-Yau pairs,* Algebraic Geometry Seminar, University of Rome 3, June 13, 2016.

26. *Log birational boundedness of Calabi-Yau pairs*, Tokyo-Princeton algebraic geometry conference, Princeton University, May 8, 2016.
27. *Birational geometry of complex hyperbolic manifolds*, Algebraic Geometry Seminar, Brown University, November 20, 2015.
28. *Effective Matsusaka's theorem for surfaces in characteristic p*, Algebraic Geometry Seminar, Princeton University, November 10, 2015.
29. *Birational geometry of complex hyperbolic manifolds*, Algebraic Geometry Seminar, Columbia University, November 6, 2015.
30. *Birational geometry of complex hyperbolic manifolds*, Algebraic Geometry Seminar, University of Rome "La Sapienza", September 11, 2015.
31. *Birational geometry of complex hyperbolic manifolds*, INdAM Italian-Korean Meeting on Algebraic Geometry, Cortona, June 30, 2015.
32. *Birational geometry of complex hyperbolic manifolds*, Topology of Algebraic Varieties, Institute of Advanced Study, Princeton, November 19, 2014.
33. *On the boundary of the cone of effective divisors*, Algebraic Geometry Seminar, University of Rome 3, July 10, 2014.
34. *On the boundary of the cone of effective divisors*, Conference in Algebraic Geometry "Giornate di Geometria Algebrica ed Argomenti Correlati XII", Turin, June 4-7, 2014.
35. *On Fujita's log spectrum conjecture*, Algebraic Geometry Seminar, University of California, San Diego, February 21, 2014.
36. *Effective results for complex hyperbolic manifolds*, Joint Mathematics Meetings, Baltimore, January 15, 2014.
37. *Effective results for complex hyperbolic manifolds*, MAGIC, Imperial College, December 9, 2013.
38. *On Fujita's log spectrum conjecture*, Algebraic Geometry Seminar, University of Michigan, October 23, 2013.
39. *On Fujita's log spectrum conjecture*, Algebraic Geometry Seminar, Columbia University, September 27, 2013.
40. *On Fujita's log spectrum conjecture*, Algebraic Geometry Seminar, University of Trento, July 10, 2013.
41. *Open problems in birational geometry*, "Algebraic geometry in the capital", University of Rome III, July 4, 2013.
42. *Effective boundedness results in algebraic and analytic geometry*, Algebraic Geometry Preprint Seminar, Princeton University, April 15, 2013.
43. *On Fujita's log spectrum conjecture*, Algebraic Geometry Seminar, University of Kyoto RIMS, January 25, 2013.
44. *On Fujita's log spectrum conjecture*, "Workshop on birational geometry", University of Tokyo, January 15, 2013.
45. *Positivity questions in Kähler-Einstein theory*, Geometry Seminar, Stanford University, December 5, 2012.

46. *Effective results for toroidal compactifications*, poster presented at WAGS, October 20-21, 2012.
47. *Positivity questions in Kähler-Einstein theory*, Algebraic Geometry Preprint Seminar, University of Utah, September 25, 2012.
48. *Effective Iitaka fibration*, Algebraic Geometry Seminar, University of Rome 3, July 13, 2012.
49. *Effective Iitaka fibration*, Junior Talk, Gael XX Grenoble, June 21, 2012.
50. *Bogomolov instability and vanishing theorems*, Algebraic Geometry Seminar, Duke University, January 25, 2012.
51. *Bogomolov instability and vanishing theorems*, Geometry and representation theory workshop, University of Rome "La Sapienza", December 20, 2011.

Teaching Experience

- Assistant Professor, Department of Mathematics, Princeton University, NJ.

Spring 2020	MAT 202 Linear Algebra
Fall 2019	MAT 201 Calculus 3
Fall 2018	MAT 201 Calculus 3 (course head)
Spring 2018	Topics in Algebraic Geometry (Multiplier and test ideals)
Fall 2017	MAT 201 Calculus 3

- Ritt Assistant Professor, Department of Mathematics, Columbia University, NY.

Fall 2016	MAT UN1101 Calculus 1
Summer 2016	MAT S4062 Intro to Modern Analysis II
Spring 2016	MAT V2010 Linear Algebra
Fall 2015	MAT W4045 Algebraic Curves
Summer 2015	MAT S2010 Linear Algebra
Spring 2015	MAT G4176 Complex analysis and Riemann surfaces
	MAT V2010 Linear Algebra
Fall 2014	MAT G4263 Topics in algebraic geometry (Toric varieties)
Spring 2014	MAT G4263 Topics in algebraic geometry (Positivity in algebraic geometry)
Fall 2013	MAT G6293 Algebraic Surfaces

- Teaching Assistant, Department of Mathematics, Princeton University, NJ.

Spring 2013	MAT 457 Algebraic Geometry (Grader)
Spring 2012	MAT 202 Linear Algebra with Applications (Instructor)
Fall 2011	MAT 201 Multi-variable Calculus (Grader)
Spring 2011	MAT 217 Honors in Linear Algebra (Grader)
Fall 2010	MAT 416 Introduction to Algebraic Geometry (Grader)

Other Professional Activities

Co-organizer of the Algebraic Geometry Seminar, Princeton University, 2017-present.

Co-organizer of the Departmental Colloquium, Princeton University, 2017-2019.

Member of the Graduate Students Admission Committee 2017/2018, Princeton University.

Organizer of the Algebraic Geometry Preprint Seminar at Columbia University, Spring 2014.

Co-organizer of the conference "Algebraic geometry in the capital" at the University of Rome III.

Reviewed papers for Zentralblatt Math 2012-present. Reviewed papers for MathSciNet 2013-present.

Member of a NSF panel in Algebra and Number Theory.

Refereed papers for Advances in Mathematics, Crelle, Duke Mathematical Journal, JM-SUT, International Mathematics Research Notices, Geometry and Topology, Compositio, Selecta, Inventiones, and Michigan Math. Journal.

Last updated: May 22, 2020