

# Luigi Lombardi

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## Current Appointment

2015- *James H. Simons Instructor*, Stony Brook University, NY

## Education

- 2008-2013 **University of Illinois at Chicago – Ph.D. in Pure Mathematics**  
Advisor: Professor Mihnea Popa  
Dissertation: *Equivalences of Irregular Varieties and Constraints on Hodge Numbers*
- 2006-2008 **University of Rome “Tor Vergata” – Ph.D. student**  
Advisor: Professor Giuseppe Pareschi
- 2004-2006 **University of Rome “La Sapienza” – Master of Science in Pure Mathematics**  
Advisor: Professor Kieran O’Grady
- 2001-2004 **University of Rome “La Sapienza” – Bachelor of Science in Pure Mathematics**  
Advisor: Professor Paolo Piccinni

## Previous Appointments

2013-2015 *Post-Doctoral Fellow*, Mathematical Institute of the University of Bonn, *DFG – SFB/TR 45 Complex Geometry Group*

## Publications

-*A decomposition theorem for the direct images of pluricanonical bundles to abelian varieties*  
(with Mihnea Popa and Christian Schnell)

In preparation

-*Higher irrational pencils and equivalences of derived categories* (with Christian Schnell)

In preparation

-*Derived equivalences of canonical coers of hyperelliptic and Enriques surfaces in positive characteristic* (with Katrina Honigs and Sofia Tirabassi)

Submitted

- *On the vanishing of weight one Koszul cohomology of abelian varieties* (with Marian Aprodu)  
Bulletin of the London Mathematical Society **48** (2016), no. 2, 280–290

- *Deformations of minimal cohomology classes on abelian varieties* (with Sofia Tirabassi)  
Communications in Contemporary Mathematics, DOI: 10.1142/S0219199715500662 (2015)

- *Theta-regularity of curves and Brill–Noether loci* (with Wenbo Niu)  
To appear in Mathematical Research Letters, preprint available at arXiv:1410.8047 (2014)

- *GV-subchemes and their embeddings in principally polarized abelian varieties* (with Sofia Tirabassi)  
Mathematische Nachrichten **288** (2015), no. 11-12, 1405–1412

- *Derived equivalences and non-vanishing loci II* (with Mihnea Popa)  
London Mathematical Society Lecture Note Series, **417**, Recent Advances in Algebraic Geometry: volume in honor of R. Lazarsfeld, Cambridge University Press 2015, 291–306

- *Derived invariants of irregular varieties and Hochschild homology*  
Algebra & Number Theory **8** (2014), no. 3, 513–542

- *Inequalities for the Hodge numbers of irregular compact Kähler manifolds*  
International Mathematics Research Notices **2013** (2013), no. 1, 63–83

- *The equations of singular loci of ample divisors on (subvarieties of) abelian varieties* (with Francesco Malaspina)  
Le Matematiche **LXIII** (2008), no. I, 155–166

## Awards and Fellowships

2011-2012 **Dean’s Scholar Award**, University of Illinois at Chicago

2010-2012 **Research Assistantships**, University of Illinois at Chicago, Professors Laura De Marco and Mihnea Popa (Fall 2010, Fall 2012, Summer 2012)

2011 **Mathematics Research Communities Travel Award**, American Mathematical Society

2006-2008 **Ph.D. Program Fellowship**, University of Rome “Tor Vergata”

2001-2005 **Undergraduate Fellowships**, Lazio Board of Academic Studies, University of Rome “La Sapienza”

## Teaching

**Instructor**, Stony Brook University

- *Calculus I*, Fall 2016
- *Introduction to Linear Algebra*, Fall 2016, Spring 2017
- *Calculus IV*, Spring 2015

**Teaching Assistant**, Stony Brook University

- *Calculus 2*, Fall 2015

**Organizer and coordinator**, University of Bonn

- *Derived Categories in Algebraic Geometry*, Graduate Student Seminar, Fall 2014

**Teaching Assistant**, University of Illinois at Chicago

- *Intermediate Algebra*, Fall 2008, Spring 2009, Summer 2009
- *Precalculus*, Summer 2010
- *Finite Mathematics for Business*, Fall 2009
- *Quantitative Reasoning*, Spring 2011
- *Calculus for Business*, Spring 2010, Summer 2011
- *Calculus*, Spring 2013, Summer 2013

**Grader**, University of Illinois at Chicago

- *Algebraic Geometry I*, Fall 2010, Fall 2011

## Invited Talks and Colloquia

2017

(Upcoming) **University of Washington**

(Upcoming) **Queensborough College**

(Upcoming) **University of Arkansas**

**Stony Brook University** *A decomposition theorem for the direct images of pluricanonical bundles to abelian varieties*

**Turin University** *A decomposition theorem for the direct images of pluricanonical bundles to abelian varieties*

2016

**Stony Brook University** *Introduction to derived categories*, Post-doc Seminar

2015

**Stony Brook University** *Derived equivalences and non-vanishing loci*

**University of Bucharest**, *Derived equivalences and non-vanishing loci*

- Univeristé de Poitiers**, *Deformations of minimal cohomology classes and regularity*
- University of Copenhagen**, *Deformations of minimal cohomology classes and regularity*
- 2014 **University of Milan**, Algebraic Geometry Workshop, *Deformations of minimal cohomology classes and regularity*
- University of Bonn**, Conference for Young Researchers in Arithmetic and Algebraic Geometry, *Deformations of minimal cohomology classes and regularity*
- Turin**, Giornate di Geometria Algebrica ed Argomenti Correlati XII, *Equivalenze derivate di varietà irregolari e luoghi di non annullamento*
- University of Bonn**, SFB-TR 45 Seminar, *How to use the Nagata Conjecture*
- Hausdorff Institute for Mathematics Bonn**, Workshop on Derived Categories, *Derived equivalences of irregular varieties and non-vanishing loci*
- 2013 **University of Bonn**, SFB-TR 45 Seminar, *Derived equivalences of irregular varieties I & II*
- University of Notre Dame**, *Comparison of non-vanishing loci under derived equivalence*
- 2012 **University of Michigan**, *Derived equivalences of irregular varieties and Hochschild homology*
- The University of Utah**, *Derived equivalences of irregular varieties*
- University of Wisconsin**, *Derived equivalences of irregular varieties*
- Purdue University**, *Derived equivalences of irregular varieties*
- University of Illinois at Chicago**, Graduate Student Colloquium, *Derived invariants of smooth projective varieties*
- University of Illinois at Chicago**, *Derived equivalences of irregular varieties and Hochschild homology*
- University of Illinois at Chicago**, *Inequalities for the Hodge numbers*
- 2011 **University of Michigan**, Poster Session, *Derived invariants of irregular varieties*
- 2010 **University of Wisconsin**, *Inequalities for the Hodge Numbers of irregular varieties*
- 2009 **University of Michigan**, *Introduction to spectral sequences*, Spring School
- 2008-2013 **University of Illinois at Chicago**, talks in the Graduate Algebraic Geometry Seminar

## Recent Workshops and Schools

- 2016 *AGNES Fall 2016*, Amhrest
- Summer school* on Stability conditions on triangulated categories and geometric applications, Sophus Lie Conference Center, Nordfjordeid
- 2015 *Arc spaces and the Nash problem*, IMPA
- Birational Geometry and Rational Points*, IMPA

- 2014 *Recent Advances in Linear Series and Newton–Okounkov Bodies*, Univeristy of Padova  
 GRIFGA/Lebesgue Summer School – Derived Categories, University of Nantes  
*Winter School* on Birational Methods in Hyperkähler Geometry, Bonn University  
 Giornate di Geometria Algebrica ed Argomenti Correlati XII, University of Turin  
 Trimester program in algebraic geometry, HIM Bonn
- 2013 *Motivic Invariants and Singularities*, University of Notre Dame  
 Robfest: a conference in honor of Rob Lazarsfeld’s 60th birthday, University of Michigan
- 2012 UGA’s Georgia Algebraic Geometry Symposium, Athens  
 MAGC: Midwest Algebraic Geometry Conference, Madison
- 2010 Mathematics Research Communities, *Birational geometry and moduli spaces*, Snowbird  
*Wall-crossing in Mathematics and Physics*, University of Illinois at Urbana-Champaign

## Synergistic Activities

**Organizer** of the First and Second Year Student Seminar, Stony Brook University

**Referee** for Transactions of the American Mathematical Society, London Mathematical Society, Bulletin of the London Mathematical Society, Proceedings of the American Mathematical Society

**Teaching Mentor**, University of Illinois at Chicago, Summer 2013

**Adviser** for the *Graduate Student Colloquium*, University of Illinois at Chicago, Fall 2012

**Organizer** of the *Algebraic Geometry Graduate Student Seminar* at University of Illinois at Chicago, Spring 2010 and Summer 2011

## Languages

Italian, mother tongue

English, fluent

German, basic

## References

Professor Lawrence Ein, University of Illinois at Chicago

Professor Daniel Huybrechts, University of Bonn

Professor Robert Lazarsfeld, Stony Brook University

Professor Mihnea Popa, Northwestern University

Professor Christian Schnell, Stony Brook University