

MATTHEW N. MASTROENI

CONTACT INFORMATION

Department of Mathematics
University of Illinois at Urbana-
Champaign
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EDUCATION

Ph.D. in Mathematics

University of Illinois at Urbana-Champaign, expected May 2018.
Thesis: *Graded Betti Numbers of Koszul Algebras*
Advisor: Hal Schenck

M.S. in Mathematics

Syracuse University, 2012.

B.A. in Mathematics

Ithaca College, 2009.

RESEARCH INTERESTS

Computational and homological aspects of commutative algebra, especially the structure of free resolutions.

PAPERS SUBMITTED

- (1) Koszul almost complete intersections. *J. Algebra*.
- (2) Matrix factorizations and singularity categories in codimension two. *Proc. Amer. Math. Soc.*

CONFERENCE PRESENTATIONS

Koszul Almost Complete Intersections

- *AMS Special Session on Commutative and Combinatorial Algebra*, March 2018, Columbus, OH.
- *Structures on Free Resolutions*, October 2017, Lubbock, TX.

HONORS AND AWARDS

Departmental TA Instructional Award

University of Illinois Math Department, 2017.

- Annual department award based on a teaching portfolio, student evaluations, an interview, and classroom observation.

HONORS AND
AWARDS
(CONT.)

REGS Day Award

University of Illinois Math Department, 2013.

- Award for the best summer research project on higher codimension matrix factorizations.

Donald E. Kibbey Prize

Syracuse University Math Department, 2010.

University Fellowship

Syracuse University, 2009 – 2012.

TEACHING AND
MENTORING
EXPERIENCE

Teaching Assistant

University of Illinois, 2012 – 2017.

- 9 semesters of experience teaching active learning discussion sections.
- On the university's List of Teachers Ranked as Excellent for 8 semesters.
- Served as Head TA in Spring 2015, responsible for supervising 14 TA's and helping with course administration.

Graduate Student Mentor - Illinois Geometry Lab

University of Illinois, June 2017.

- Mentored four undergraduates doing research on a combinatorial game involving commutative Noetherian rings.
- Taught relevant aspects of commutative algebra and using Macaulay2 to compute examples, posed research questions, and gave students feedback on their work.

Teaching Assistant

Syracuse University, 2010 – 2012.

- Served as the primary course instructor for 3 out of 4 semesters.

SERVICE
EXPERIENCE

TA Teaching Awards Committee Member

University of Illinois Math Department, Fall 2017.

Seminar Organizer - Commutative Ring Theory Seminar

University of Illinois, Fall 2014 – present.

PROFESSIONAL
DEVELOPMENT

Stillmans Conjecture and other Progress on Free Resolutions, UC
Berkeley, July 2017.

RTG Homological Conjectures in Commutative Algebra Workshop,
University of Illinois Chicago, November 2016.

Macaulay 2 Workshop, University of Utah, May 2016.

RTG Local Cohomology Workshop, University of Illinois Chicago, February
2015.