

## PAOLO MANTERO

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### EDUCATION

Ph. D. in Mathematics, Purdue University August 2012  
advisor: *Prof. Bernd Ulrich*

### ACADEMIC EMPLOYMENT

Associate Professor	University of Arkansas	Aug. 2021 – present
Assistant Professor	University of Arkansas	Aug. 2015 – 2021
Visiting Assistant Professor	University of California at Riverside	Jan. 2013 - July 2015
Post-doctoral Research Member	Math. Sc. Res. Inst. (MSRI), Berkeley, CA	Fall 2012

### HONORS AND GRANTS

Simons Collaboration Grant for Mathematicians	Simons Foundation	Sep 2022 – Aug 2027
Robert and Sandra Connor Endowed Faculty Fellowship	University of Arkansas	July 2021–June 2022
New Faculty Commendation	U. Arkansas Faculty Support Center	September 2017
Excellence in Teaching Award	UC Riverside, Mathematics Department	June 2015
Excellence in Teaching Award	UC Riverside, Mathematics Department	June 2014
AMS-Simons Travel Grant	American Mathematical Society	July 2013–July 2015
Post-Doctoral Research Membership	MSRI	Fall 2012
Bilsland Dissertation Fellowship	Purdue University, College of Science	Aug. 2011–Aug. 2012
MRC Research Grant	American Mathematical Society	June–July 2010
INDAM Italian National Fellowship	INDAM, Istituto Francesco Severi	Aug. 2004– Aug. 2006

### PUBLICATIONS

21. *A formula for symbolic powers*, with Cleto Miranda–Neto and Uwe Nagel. Submitted.
20. *Canonical modules and class groups of Rees-like algebras*, with Jason McCullough and Lance E. Miller. To appear in Michigan Math. Journal.
19. *The structure of Koszul algebras defined by four quadrics*, with Matthew Mastroeni. J. Algebra **601** (2022), 280–311.
18. *The Alexander–Hirschowitz theorem and related problems*, with Huy Tai Hà. *Commutative Algebra* (dedicated to David Eisenbud on the occasion of his 75th birthday) (2021), 373–427. Springer, Cham, 2021.
17. *Betti numbers of the conormal module of licci ideals*, with Mark R. Johnson. Collect. Math. **73** (2022), 295–304.
16. *Betti numbers of Koszul algebras defined by four quadrics*, with Matthew Mastroeni. J. Pure and Appl. Algebra **225** (2021), paper no. 106504, 16 pp.
15. *The singularities of Rees-like algebras*, with Jason McCullough and Lance E. Miller. Math. Z. **297** (2021), 535–555.
14. *The structure and free resolutions of the symbolic powers of star configurations of hypersurfaces*. Trans. Amer. Math. Soc. **373** (2020), 8785–8835.
13. *The projective dimension of 3 cubics is at most 5*, with Jason McCullough, J. Pure and Appl. Algebra **223** (2019), 1383–1410.
12. *A tight bound on the projective dimension of 4 quadrics*, with Craig Huneke, Jason McCullough and Alexandra Seceleanu, J. Pure and Appl. Algebra **222** (2018), 2524–2551.

11. *A finite classification of  $(x, y)$ -primary ideals of low multiplicity*, with Jason McCullough, Collect. Math. **69** (2018), 107–130.
10. *Chudnovsky’s conjecture for very general points in  $\mathbb{P}^N$* , with Louiza Fouli and Yu Xie, J. Algebra **498** (2018), 211–227.
9. *Hypergraphs with high projective dimension and 1-dimensional Hypergraphs*, with Kuei-Nuan Lin, Internat. J. Algebra Comput. **27** (2017), 591–617.
8. *Arithmetical rank of strings and cycles*, with Kyouko Kimura, J. Commut. Algebra **9** (2017), 89–106.
7. *Multiple structures with arbitrary large projective dimension supported on linear subspaces*, with Craig Huneke, Jason McCullough and Alexandra Seceleanu, J. Algebra **447** (2016), 183–205.
6. *Projective dimension of string and cycle hypergraphs*, with Kuei-Nuan Lin, Comm. Algebra **44** (2016), 1671–1694.
5. *Generalized stretched ideals and Sally’s Conjecture*, with Yu Xie, Journal of Pure and Applied Algebra **200** (2016), 1157 – 1177.
4. *A multiplicity bound and a criterion for the Cohen-Macaulay property*, with Craig Huneke, Jason McCullough and Alexandra Seceleanu, Proc. Amer. Math. Soc. **143** No. 6 (2015), 2365 – 2377.
3. *Ubiquity of complete intersection liaison classes*, with Mark Johnson, Illinois J. Math. **58**, No. 3 (2014), 647 – 663.
2. *The projective dimension of codimension two algebras presented by quadrics*, with Craig Huneke, Jason McCullough and Alexandra Seceleanu, J. Algebra **393** (2013), 170–186.
1. *On the Cohen-Macaulayness of the conormal module of an ideal*, with Yu Xie, J. Algebra **372** (2012) 35–55.

#### INVITED TALKS

63. AMS Special Session	University of Texas, El Paso	September 15, 2022
62. Seminario di Algebra e Geometria	University of Genova (Italy)	July 28, 2022
61. AMS Special Session	University of Denver	May 15, 2022
60. AMS Special Session	Purdue University	March 26, 2022
59. UFPB ’22 Summer School	Universidade Federal de Paraiba (Brazil)	January 27, 2022.
58. Colloquio Departamental de Matematicas	University of Puerto Rico (Puerto Rico)	November 18, 2021
57. AMS Special Session	University of New Mexico	October 23, 2021
56. Fellowship of the ring (90’ talk)	MSRI (Berkeley, CA)	April 12, 2021
55. Commutative Algebra seminar	University of Nebraska	March 31, 2021
54. Comm. Algebra Algebraic Geometry seminar	University of Notre Dame	February 25, 2021
53. Algebra Seminar	New Mexico State University	November 2, 2020
52. Algebra Seminar	Iowa State University	October 27, 2020
51. AMS Special Session	Pennsylvania State University	October 3, 2020
49–50. AMS Special Sessions – 2 talks –	University of Texas at El Paso	September 12, 2020
48. Commutative Algebra Seminar	University of California, Riverside	March 9, 2020
47. Algebra Seminar	Oklahoma State University	October 29, 2019
46. Seminario di Algebra e Geometria	University of Genova (Italy)	July 17, 2019
45. AMS Special Session	University of Delaware	September 29, 2018
44. Commutative Algebra Seminar	University of Michigan	April 5, 2018
43. AMS Special Session	University of North Texas	September 10, 2017
42. BIRS-CMO Workshop (declined)	Oaxaca (Mexico)	May 14, 2017
41. AMS Special Session	Hunter College, NY	May 6, 2017
40. Algebra Seminar	Tulane University	March 23, 2017
39. Commutative Algebra Seminar	University of California, Riverside	May 25, 2016
38. AMS Special Session	University of Georgia	March 5, 2016
37. Algebra Seminar	University of Missouri, Columbia	February 15, 2016
36. Colloquium Talk	DePaul University	February 2, 2015

35. Colloquium Talk	New Mexico State University	January 16, 2015
34. JMM Special Session	San Antonio, TX	January 10–13, 2015
33. Colloquium Talk	University of Arkansas	December 11, 2014
32. AMS Special Session	San Francisco State University	October 26, 2014
31. AMS Special Session	University of New Mexico	April 6, 2014
30. Commutative Algebra Seminar	Purdue University	March 13, 2014
29. Algebra Seminar	New Mexico State University	March 3, 2014
28. Seminario di Algebra e Geometria	University of Genova (Italy)	December 17, 2013
27. Algebra Seminar	University of Arkansas	October 28, 2013
26. AMS Special Session	University of Louisville	October 6, 2013
25. Commutative Algebra Seminar	Purdue University	September 10, 2013
24. Commutative Algebra Seminar	Purdue University	March 26, 2013
23. SLAM '13 (plenary speaker)	University of Arizona	March 3, 2013
22. Algebra Seminar	New Mexico State University	February 25, 2013
21. Joint Mathematics Meeting	San Diego, CA	January 9, 2013
20. Commutative Algebra Seminar	Purdue University	November 19, 2012
19. Algebra Seminar	Tulane University	October 24, 2012
18. Mathematical Sciences Research Institute Seminar	MSRI (Berkeley, CA)	October 12, 2012
17. Mathematical Sciences Research Institute Seminar	MSRI (Berkeley, CA)	October 1, 2012
16. Commutative Ring Theory Seminar	University of Illinois	April 12, 2012
14–15. Commutative Algebra Seminar	University of Nebraska	April 4 and 5, 2012
13. AMS Special Session	University of Kansas	March 30, 2012
12. Algebra Seminar	New Mexico State University	March 7, 2012
11. Algebra Seminar	University of Kansas	February 22, 2012.
10. Algebra and Geometry Seminar	University of Kentucky	January 26, 2012
9. Seminario di Algebra e Geometria	University of Genova (Italy)	January 12, 2012
8. Seminario di Algebra e Geometria	University of Genova (Italy)	January 10, 2012
7. Algebra and Geometry Seminar	University of Basel (Switzerland)	December 16, 2011
6. Algebraic Geometry Seminar	University of Notre Dame	November 9, 2011
5. Algebra and Geometry Seminar	University of Kentucky	November 1, 2011
4. Algebra Seminar	University of Kansas	October 18, 2011
3. AMS Special Session	University of Nebraska	October 15, 2011
2. Algebraic Geometry Seminar	University of Notre Dame	October 12, 2010
1. Algebraic Geometry Seminar	University of Notre Dame	April 7, 2010

### **SELECTED PROFESSIONAL SERVICE**

- Aug 2017 - present: Elected member of the **MSRI CAS** (Committee of Academic Sponsors of the MSRI)
- Aug 2018 - Aug 2021: Elected member of the **MSRI CAS – Subcommittee on Summer Graduate Schools of the MSRI** (3 years term) ;
- June 3–7, 2019: Instructor for the MSRI graduate school *Linkage and Residual Intersections*, held at the University of Notre Dame.

**Co-organizer** of the following mathematical events, conferences and workshops:

AMS Meeting Special Session	University of Arkansas	November 3–4, 2018
Southwest Local Algebra Meeting – SLAM '18	University of Arkansas	April 2018
U of A 41st Spring Lecture Series	University of Arkansas	March 2017
AMS Meeting Special Session	Loyola University, Chicago, IL	October 3–4, 2015
AMS Meeting Special Session	UC Riverside	November 2–3, 2013
Algebra Seminar	University of Arkansas	2015 – present

**PH.D. STUDENTS SUPERVISED**

1. Jesse Keyon – Summer 2020, University of Arkansas.  
Title: *Families of homogeneous licci ideals*

**HONORS STUDENTS SUPERVISED**

1. Jack Belyeu – November 2021, University of Arkansas.
2. Bryant Xie – May 2023 (expected), University of Arkansas.

**Referee and Reviewer work:** In the past 5 years I have refereed in average 3 papers per year.

Referee for *Algebra & Number Theory*

Referee for *J. Algebraic Combinatorics*

Referee for *Arkiv for Matematik*

Referee for *Colloq. Math.*

Referee for *Glasgow Math. Journal*

Referee for *IJAC – Internat. J. Algebra Comput.*

Referee for *J. Algebra*

Referee for *J. Algebra Appl.*

Referee for *J. Comm. Algebra*

Referee for *J. Pure and Applied Algebra*

Referee for *Michigan Math. Journal*

Referee for *Proc. Amer. Math. Soc.*

Referee for *Revista Matematica Iberoamericana*

Referee for *Rocky Mountains J. Math.*

Referee for *Trans. Amer. Math. Soc.*

**MEMBERSHIP**

Life-time member: American Mathematical Society.