

# Sara Malec

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## Education

- 2008-2013 **PhD in Mathematics**, *Georgia State University, Intersection Algebras and Pointed Rational Cones.*  
Advisor: Florian Enescu
- 2006-2008 **MS in Mathematics**, *Georgia State University.*
- 1999-2003 **BS in Mathematics**, *University of Wisconsin-Madison.*

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## Teaching Experience And Employment

- 2013- Present **Teaching Postdoc**, *Introduction to Finite Math and Calculus, Calculus I, Introduction to Statistics and Probability, Linear Algebra, Abstract Algebra*, University of the Pacific.
- 2008-2013 **Principal Instructor**, *College Algebra, Pre-Calculus, Survey of Calculus, Calculus I, Foundations of Numbers and Operations, Introduction to Mathematical Modeling*, Georgia State University.  
Carried 2/2 teaching load with approximately 50 students per class. Also assisted with piloting new textbooks and teaching methods in several of these courses
- 2008 **Instructor**, *Intermediate Algebra*, Georgia State University and Carver Early College.  
Co-taught collegiate algebra with a high school teacher as a part of a grant for algebra intervention for at-risk, college-bound students
- 2006-2007 **Graduate Lab Assistant**, *College Algebra, Pre-Calculus*, Georgia State University.  
Served as teaching assistant and manager in the Mathematics Integrated Learning Environment lab (MILE)
- 2003-2005 **Teach for America Teacher**, *8th Grade Algebra*, Benjamin S. Carson Middle School.

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## Additional Research Experience

- 2012-2013 **Research Assistant**, *Florian Enescu, Pier Junor Clarke*, Georgia State University.  
Designed curriculum and conducted interviews for a pilot project on coordinated instruction in statistics.
- 2006 **Research Assistant**, *Florian Enescu*, Georgia State University.
- 2001-2002 **Research Assistant**, *Brenda Dingus*, University of Wisconsin - Madison.  
Improved modeling of the Milagro gamma-ray observatory.

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## Honors and Awards

- 2013-2014 **Project NExT Fellow**, MAA.
- 2009,2011 **Best Teaching Assistant Award**, Georgia State University.
- 2003 **Hilldale Undergraduate Research Fellowship**, University of Wisconsin-Madison.

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## Publications

- 2014 **Intersection Algebras from Principal Monomial Ideals in Polynomial Rings**, *Journal of Algebra and Its Applications*, Accepted, Joint work with Florian Enescu.  
[arXiv:1409.1319v1](https://arxiv.org/abs/1409.1319v1) [math.AC]
- 2013 **On the Intersection Algebra of Principal Ideals**, *Communications in Algebra*, 42(2):623-635, 2015.  
[arXiv:1302.0312v2](https://arxiv.org/abs/1302.0312v2) [math.AC]

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## Major Presentations and Workshop Participation

- October 2014 **Topological Combinatorics and Combinatorial Commutative Algebra Satellite Conference**, *San Francisco State University*, San Francisco, CA.  
Invited Presenter
- August 2014 **MAA MathFest**, Portland, OR.  
Project NExT Workshop
- April 2014 **AMS Southwestern Sectional Meeting**, *University of New Mexico*, Albuquerque, NM.  
Contributed Paper Session
- March 2014 **San Joaquin County Math Teachers' Circle**, *University of the Pacific*, Stockton, CA.  
Invited Presenter
- March 2014 **Santa Clara University Colloquium**, *Santa Clara University*, Santa Clara, CA.  
Invited Talk
- January 2014 **Joint Meetings**, Baltimore, MD.  
Contributed Paper Session
- October 2013 **San Joaquin County Math Teachers' Circle**, *University of the Pacific*, Stockton, CA.  
Invited Presenter
- August 2013 **MAA MathFest**, Hartford, CT.  
Project NExT Workshop
- March 2013 **AMS Southeastern Sectional Meeting**, *University of Mississippi*, Oxford, MS.  
Invited Talk
- February 2013 **Further Connections Between Algebra and Geometry**, *North Dakota State University*, Fargo, ND.  
Poster presentation
- March 2012 **Departmental Graduate Research Conference**, *Georgia State University*, Atlanta, GA.  
2008-2012 **Commutative Algebra Seminar**, *Georgia State University*, Atlanta, GA.  
Presented several seminars on topics such as the Buchsbaum-Eisenbud Acyclicity Criterion, Hilbert-Kunz multiplicity, introductory homological algebra, as well as a series on my current research on intersection algebras and semigroup rings.  
I received funding to attend these conferences
- December 2012 **MSRI Combinatorial Commutative Algebra Workshop**, *MSRI*, Berkeley, CA.
- October 2012 **AMS Southeastern Sectional Meeting**, *Tulane University*, New Orleans, LA.
- July 2012 **Macaulay2 Workshop**, *Wake Forest University*, Winston-Salem, NC.  
Assisted with the development of a Macaulay2 package for computations in characteristic  $p$
- June 2011 **MSRI Summer Graduate Workshop in Commutative Algebra**, *MSRI*, Berkeley, CA.  
Began developing an alternate Macaulay2 package for computing integral closure

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## Service

- 2014-2015 **Success-TRiO Math Camp Coordinator**, University of the Pacific.  
Created and organized a math circle for underserved undergraduate students
- 2013-2015 **Math Teachers' Circle Committee Member**, *San Joaquin County Math Teachers' Circle*, University of the Pacific.  
Assisted with coordination and wrote grants for a math circle for middle school math teachers.
- 2010-2013 **Treasurer**, *Mathematics and Statistics Club*, Georgia State University.
- 2007-2010 **President**, *Mathematics and Statistics Club*, Georgia State University.  
Oversaw increased participation in club events from an average of 5 students to 30+ students per event, and an increase in our annual budget from \$500 to \$2000. Implemented new student travel grant programs and a group trip to an MAA conference.
- 2002-2003 **President**, *Mathematics Club*, University of Wisconsin-Madison.