Liana M Sega
Curriculum Vitae

June 2016

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Education

2002	Ph.D. in Mathematics	Purdue University
1997	B.S. in Mathematics	University of Bucharest, Romania

Research Interests

Commutative Algebra and Homological Algebra

My work is centered around understanding the structure of (infinite) free resolutions of finitely generated modules over commutative Noetherian local rings, and the behavior of (co)homology functors defined by means of such resolutions.

Employment

Associate Professor (with tenure)	University of Missouri, Kansas City	2011 -present
Research Member	Mathematical Sciences Research Institute	Spring 2013
Assistant Professor	University of Missouri, Kansas City	2005 -2011
Visiting Research Instructor	Michigan State University	2003 - 2005
Postdoctoral Fellow	Mathematical Sciences Research Institute	2002 - 2003
Liftoff Mathematician	Clay Mathematics Institute	Summer 2002
Graduate Teaching Assistant	Purdue University	1997 - 2002

Honors and funding

Collaborations grant for Mathematicians	Simons Foundation	Sept 2015-Aug 2020
DMS-1101131; Principal Investigator	National Science Foundation	Sept 2011-Aug 2014
Collaborations grant for Mathematicians	Simons Foundation	Jun 2011-Aug 2013
Travel grants	AWM-NSF	2004, 2007
Liftoff Mathematician	Clay Mathematics Institute	Summer 2002
Puskas Memorial Fellowship	Purdue University	2001-2002
Purdue Research Foundation Grant	Purdue University	1999-2001
Purdue Research Foundation Grant	Purdue University	Summer 1998
Merit Scholarship	University of Bucharest	1993-1997

Ph.D students

Melissa Menning	Ph.D. May 2016
Justin Hoffmeier	Ph.D. August 2014

Major roles in the Department and the College

Calculus coordinator	July 2010- present
Graduate advisor/admissions coordinator (MS students)	May 2013- present
Chair of GTA supervisory committee	July 2007–Aug 2012
Member of the CAS Curriculum Committee	Aug 2014- May 2017
Member of the CAS Budget Committee	Spring 2015

Refereed research publications

The order of authors is standard for publications in pure mathematics, namely alphabetical order. All co-authors are to be regarded as having an *essential* contribution to the paper.

year	(21 publications in total)
2016	M. Menning, L. M. Şega, *Cohomology of finite modules over short Gorenstein rings*, J. Commut. Algebra, to appear.
2016	J. Hoffmeier, L. M. Şega, *Generalized Koszul properties of commutative local rings*, J. Pure Appl. Algebra, to appear.
2014	A. Kustin, L. M. Şega, A. Vraciu, *Minimal quasi-complete intersection ideals*, lllinois J. Math. **58** (2014), 867–889.
2014	M. E. Rossi, L. M. Şega, *Poincaré series of compressed Gorenstein local rings*, Adv. Math **259** (2014), 421–447.
2013	L. M. Şega, *On the linearity defect of the residue field*, J. Algebra **384** (2013), 276–290.
2013	L. L. Avramov, I. B. Henriques, L. M. Şega, *Quasi-complete intersection homomorphisms*, Pure and Applied Math. Quarterly **9**, no 4 (2013), 1–31.
2011	I. B. Henriques, L. M. Şega, *Free resolutions over short Gorenstein local rings*, Math. Z. **267** (2011), 645–663.
2011	L. M. Şega, *Self-tests for freeness over commutative artinian rings*, J. Pure Appl. Algebra **215** (2011), 1263-1269.
2010	L. L. Avramov, S. Iyengar, L. M. Şega, *Short Koszul modules*, J. Commut. Algebra, **2** (2010), 249–279.
2009	M. T. Hughes, D. A. Jorgensen, L. M. Şega, *Acyclic complexes of finitely generated free modules over local rings*, Math. Scand. **105** (2009), 85–98.
2008	L. L. Avramov, S. Iyengar, L. M. Şega, *Free resolutions over short local rings*, J. London Math. Soc., **78** (2008), 459-476.
2007	C. Rotthaus, L. M. Şega, *On a class of coherent regular rings*, Proc. Amer. Math. Soc. **135** (2007), 1631–1640.
2006	C. Rotthaus, L. M. Şega, *Open loci of graded modules*, Trans. Amer. Math. Soc. **358** (2006), 4959-4980.
2006	D. A. Jorgensen, L. M. Şega, *Independence of the total reflexivity conditions for modules*, Algebr. Represent. Theory **9** (2006), 217–226.
2005	L. L. Avramov, R.-O. Buchweitz, L. M. Şega, *Extensions of a dualizing complex by its ring: commutative versions of a conjecture of Tachikawa*, J. Pure Appl. Algebra **201** (2005), 218-239.
2005	C. Rotthaus, L. M. Şega, *Some properties of graded local cohomology modules*, J. Algebra **283** (2005), 232–247.
2005	D. A. Jorgensen, L. M. Şega, *Asymmetric complete resolutions and vanishing of Ext over Gorenstein rings*, Int. Math. Res. Notices **56** (2005), 3459–3477.
2004	C. Huneke, L. M. Şega, A. N. Vraciu, *Vanishing of Ext and Tor over Cohen-Macaulay local rings*, Illinois J. Math. **48** (2004), 295-317.
2004	D. A. Jorgensen, L. M. Şega, *Nonvanishing cohomology and classes of Gorenstein rings*, Adv. Math. **188** (2004), 470–490.

2003   L. M. Şega, *Vanishing of cohomology over Gorenstein rings of small codimension*, Proc. Amer. Math. Soc. **131** (2003), 2313-2323.

2001   L. M. Şega, *Homological properties of powers of the maximal ideal of a local ring*, J. Algebra **241** (2001), 827-858.

Invited research talks in the last 8 years

May 2016	University of Gerogia, Athens, AMS meeting, special session *Cohomology of finite modules over short Gorenstein rings*	

May 2016   University of Gerogia, Athens, AMS meeting, special session
Cohomology of finite modules over short Gorenstein rings

Nov. 2015   Rutgers University, New Brunswick, NJ, AMS meeting, special sesssion
Cohomology of finite modules over short Gorenstein rings

Jul. 2015   University of Kentucky, Conference in Homological Algebra,
Cohomology of finite modules over short Gorenstein rings

Jul. 2014   Bilbao, Spain
First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI (FJIM 2014)
Generalized Koszul properties of commutative local rings

Apr. 2014   University of New Mexico, Albuquerque, NM, AMS meeting, special session
Homological properties of compressed Gorenstein local rings

Oct. 2013   University of Louisville, KY, AMS meeting, special session
The Poincare series of modules over compressed Gorenstein rings

Jun. 2013   Alba Iulia, Romania, Joint International AMS-RMS meeting, special session
The Poincare series of modules over compressed Gorenstein rings

Mar. 2013   MSRI, Berkeley, CA, colloquium
The Poincare series of modules over generic Gorenstein Artinian algebras

May 2012   CIMAT, Guanajuato, Mexico, Commutative Algebra and Its Interactions with Algebraic Geometry, Representation Theory, and Physics international conference
The linearity defect of the residue field

Apr. 2012   Syracuse University, NY, Interactions between Commutative Algebra and Representation Theory conference
On the linearity defect of the residue field

Oct. 2011   University of Nebraska, Lincoln, NE, AMS meeting, special session
On the linearity defect of the residue field

May 2011   University of Kansas, Lawrence, KS, Homological algebra day conference
Self-tests for freeness over commutative artinian rings

Mar. 2011   Georgia Southern University, GA, AMS meeting, special session
Vanishing of cohomology over absolutely Koszul rings

Jun. 2010   University of California, Berkeley, CA, AMS meeting, special session
Self-tests for finite projective dimension over artinian rings

Apr. 2010   University of Nebraska, Lincoln, NE, seminar
Self-tests for freeness over commutative artinian rings

Mar. 2010   University of Kentucky, Lexington, KY, AMS meeting, special session
Homological algebra modulo an exact zero divisor

Undergraduate research direction

Whitney Berard: *Graphs based on Vector Spaces over Finite Fields*; poster   May 2008
(project funded by UMKC's SEARCH program)

Professional activities and memberships

Co-organizer: Mathematical Research Communities - workshop in Commutative Algebra,
  June 7-June 13, 2015, Snowbird, Utah
  This is an NSF funded program aimed to engage in research early career mathematicians.

Co-organizer: special session in Commutative algebra,
  Sectional AMS meeting in Saint Louis, October 2013

Organizer: mini-session of the workshop "*Representation Theory, Homological Algebra, and Free Resolutions*", MSRI, Berkeley, February 2013

Member of the local organizing committee of the conference *Commutative Algebra: Connections with Algebraic Topology and representation Theory*, Lincoln, NE, May 2008

NSF Panel Review member (one time)

Referee for the following journals:
  Comm. Algebra, Illinois J. Math, Homology Homotopy Appl., Proc. Amer. Math. Soc.,
  Internat. J. of Commutative Rings, J. Pure and Applied Algebra, J. Algebra, Trans. Amer.
  Math. Soc., J. Commut. Algebra , Math. Res. Letters, Adv. Math., Questiones Mathematicae,
  Rocky Mountain J. Math., MSRI publications, J. Algebra Appl., Periodica Math. Hungarica.

Proposal reviewer for the National Science Foundation, the National Security Agency and
  the Missouri Research Board.

Reviewer for Mathematical Reviews (MR)

Member of the American Mathematical Society

Teaching

Classes taught in the past 7 years:
  MATH 210 and MATH 220: Calculus I & II;
  MATH 214: Algebra for Teachers;
  MATH 300 and MATH 420: Linear Algebra I & II;
  MATH 301: Sets and Proof;
  MATH 410: Modern Algebra;
  MATH 407: Complex Analysis;
  MATH 402: Real Analysis;
  MATH 5509 and MATH 5519: General Algebra I & II (graduate) ;
  MATH 5510: Complex Analysis (graduate);
  MATH 5590: Homological Algebra (independent study)
  MATH 5590: Algebraic Geometry (independent study)
  MATH 5590: Invariant Theory (independent study)