Liana M Şega

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Education

2002	Ph.D. in Mathematics	Purdue University	advisor: Luchezar Avramov
1997	B.S. in Mathematics	University of Bucharest, Romania	

Research Interests

Commutative Algebra, Homological Algebra, Combinatorial Commutative Algebra

Employment

Professor	University of Missouri-Kansas City	2018 -present
Associate Professor (with tenure)	University of Missouri-Kansas City	2011 -2018
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

Funding and awards

JMM travel support	AWM-NSF	January 2023
SQuaREs	AIM, San Jose	October 2022
Research in pairs	Oberwolfach, Germany	May 2022
Collaborations grant for Mathematicians, PI, $35,000	Simons Fndn.	2015–2022
SWiM (Research program for Women in Mathematics)	MSRI, Berkeley	June 2018
DMS-1101131; PI, $85,843	NSF	2011–2014
Collaborations grant for Mathematicians, PI, $14,000	Simons Fndn.	2011–2013
Travel support grants	AWM-NSF	2004, 2007
Puskas Memorial Fellowship	Purdue Univ.	2001-2002
Purdue Research Foundation Grant	Purdue Univ.	1999–2001

Ph.D students

Deepak Sireeshan	*Homological algebra modulo an exact zero divisor*	May 2024 (expected)
Melissa Menning	*Cohomology of Finite Modules over Short Gorenstein Rings*	Aug 2016
Justin Hoffmeier	*Generalized Koszul Properties of Commutative Local Rings*	Aug 2014

University service (selected)

Graduate program director (Ph.D. and M.S.), Mathematics and Statistics, 2022-present.

M.S. Mathematics degree cooordinator, 2013-2022.

Calculus Coordinator, 2010-2022

Curriculum Committee, college/university level, member/chair, 2014-2022

Professional activities and memberships (selected)

Associate editor: Journal of Commutative Algebra, 2020-present

Referee & grant review/panel: Referee – various journals, NSF Panel Review member (3 times), proposal reviewer: NSA (1 time), Missouri Research Board (2 times), reviewer Mathematical Reviews (MR)

Professional Societies membership:

American Mathematical Society (AMS), Mathematical Association of America (MAA)

Event/program organization:

Program Chair, MAA Missouri Section & organizer of the MAA Missouri Section Meeting (April 2022), 2020-2022.

Co-organizer and group leader: Mathematical Research Communities - workshop in Commutative Algebra June 7-June 13, 2015, Snowbird, Utah

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

Selected publications

See MathSciNet for complete list: MR author ID: 681059

1. S. M. Cooper, S. El Khoury, S. Faridi, S. Mayes-Tang, S. Morey, Susan; L. M. Şega, S. Spiroff, *Powers of graphs & applications to resolutions of powers of monomial ideals*, Res. Math. Sci. **9** (2022), Paper No. 31.

2. R. A. Maleki, L. M. Şega, *The absolutely Koszul and Backelin-Roos properties for spaces of quadrics of small codimension*, J. Algebra **551** (2020), 232–284.

3. A. Croll, R. Dellaca, A. Gupta, J. Hoffmeier, V. Mukundan, D. Rangel Tracy, G. Sosa, L. M. Şega, P. Thomson, *Detecting Koszulness and related homological properties from the algebra structure of Koszul homology*, Nagoya Math. J., **238** (2020), 47–85.

4. A. Kustin, L. M. Şega, A. Vraciu, *Poincaré series of compressed level local rings with odd socle degree*, J. Algebra **505** (2018), 383–419.

5. M. E. Rossi, L. M. Şega, *Poincaré series of compressed Gorenstein local rings*, Adv. Math. **259** (2014), 421–447.

6. L. L. Avramov, I. B. Henriques, L. M. Şega, *Quasi-complete intersection homomorphisms*, Pure Appl. Math. Q. **9**, no 4 (2013), 1–31.

7. L. L. Avramov, S. Iyengar, L. M. Şega, *Free resolutions over short local rings*, J. London Math. Soc., **78** (2008), 459-476.

8. C. Rotthaus, L. M. Şega, *Open loci of graded modules*, Trans. Amer. Math. Soc. **358** (2006), 4959-4980.

9. 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.

10. D. A. Jorgensen, L. M. Şega, *Nonvanishing cohomology and classes of Gorenstein rings*, Adv. Math. **188** (2004), 470–490.

Selected invited talks

July 2022	Joint Meeting AMS-EMS-SMF Grenoble, France *Homological algebra modulo an exact zero-divisor*
Feb 2021	Fellowship of the Ring, MSRI virtual seminar *Simiplical resolutions of powers of a square-free monomial ideal*
Aug 2020	Workshop on Free Resolutions and Representation Theory, ICERM (virtual) *Cellular resolutions of powers of a monomial ideal of projective dimension one*
Oct. 2019	University of Nebraska, Lincoln, KUMUNU conference *Laurent series and asymptotic behavior of Ext over graded complete intersections*
Jun. 2018	BIRS, Banff, Canada, New Trends in Syzygies workshop *The absolutely Koszul and Backelin-Roos properties for spaces of quadrics of small codim.*
Oct. 2017	Texas Tech University, Lubbock, Structures on free resolutions conference *Golod homomorphisms: constructions and applications*
Dec. 2016	MFO, Oberwolfach, Germany, workshop on Asymptotic Phenomena in Local Algebra and Singularity Theory: *Rationality of Poincare Series over local rings*