

CURRICULUM VITAE
Zachary Mesyan

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Education

Ph.D. in Mathematics, University of California, Berkeley 05/2006
Advisor: George Bergman
Sc.B. in Mathematics and Philosophy, Brown University 05/2001
With Honors in Mathematics, Magna Cum Laude, Phi Beta Kappa, Sigma Xi

Employment

Professor, University of Colorado, Colorado Springs 08/2019–present
Associate Professor, University of Colorado, Colorado Springs 08/2015–07/2019
Assistant Professor, University of Colorado, Colorado Springs 08/2010–07/2015
Postdoctoral Fellow, Ben Gurion University of the Negev (Israel) 09/2008–07/2010
Lecturer, University of Southern California 08/2006–05/2008

Grants and Awards

National Science Foundation Conference Grant 1602010 2016
Israeli Council for Higher Education Vatat Fellowship 2008–2010
Mathematics Department Fellowship, UC Berkeley Spring 2005
Mangasar M. Mangasarian Scholarship, UC Berkeley Spring 2003 & 2004

Software

Contribution to the *Semigroups* Package for the Computer Algebra System *GAP* (2016)

Publications

23. *Products of Ideals in Leavitt Path Algebras* (with G. Abrams and K. M. Rangaswamy), *Communications in Algebra* **48** (2020) 1853–1871.
22. *Infinite-Dimensional Triangularizable Algebras*, *Forum Mathematicum* **31** (2019) 19–33.
21. *An Infinite Cardinal-Valued Krull Dimension for Rings* (with K. A. Loper and G. Oman), *Journal of Algebra* **517** (2019) 223–248.

20. *Chains of Semiprime and Prime Ideals in Leavitt Path Algebras* (with G. Abrams, B. Greenfeld, and K. M. Rangaswamy), 1–16, Contemporary Mathematics **715**, American Mathematical Society, Providence, RI, 2018.
19. *Infinite-Dimensional Triangularization*, Journal of Pure and Applied Algebra **222** (2018) 1529–1547.
18. *Realizing Posets as Prime Spectra of Leavitt Path Algebras* (with G. Abrams, G. Aranda Pino, and C. Smith), Journal of Algebra **476** (2017) 267–296.
17. *Infinite-Dimensional Diagonalization and Semisimplicity* (with M. C. Iovanov and M. L. Reyes), Israel Journal of Mathematics **215** (2016) 801–855.
16. *The Structure of a Graph Inverse Semigroup* (with J. D. Mitchell), Semigroup Forum **93** (2016) 111–130.
15. *Topological Graph Inverse Semigroups* (with J. D. Mitchell, M. Morayne, and Y. Péresse), Topology and its Applications **208** (2016) 106–126.
14. *Traces on Semigroup Rings and Leavitt Path Algebras* (with L. Vaš), Glasgow Mathematical Journal **58** (2016) 97–118.
13. *Polynomials of Small Degree Evaluated on Matrices*, Linear and Multilinear Algebra **61** (2013) 1487–1495.
12. *Commutator Leavitt Path Algebras*, Algebras and Representation Theory **16** (2013) 1207–1232.
11. *The Bergman-Shelah Preorder on Transformation Semigroups* (with J. D. Mitchell, M. Morayne, and Y. Péresse), Mathematical Logic Quarterly **58** (2012) 424–433.
10. *Monoids of Injective Maps Closed Under Conjugation by Permutations*, Israel Journal of Mathematics **189** (2012) 287–305.
9. *Simple Lie Algebras Arising from Leavitt Path Algebras* (with G. Abrams), Journal of Pure and Applied Algebra **216** (2012) 2302–2313.
8. *Groups Where Free Subgroups are Abundant*, Journal of Algebra **344** (2011) 161–171.
7. *Conjugation of Injections by Permutations*, Semigroup Forum **81** (2010) 297–324.
6. *The Ideals of an Ideal Extension*, Journal of Algebra and Its Applications **9** (2010) 407–431.
5. *On Minimal Extensions of Rings* (with T. J. Dorsey), Communications in Algebra **37** (2009) 3463–3486.
4. *Generating Self-map Monoids of Infinite Sets*, Semigroup Forum **75** (2007) 648–675.
3. *Endomorphism Rings Generated Using Small Numbers of Elements*, Bulletin of the London Mathematical Society **39** (2007) 290–300.
2. *Commutator Rings*, Bulletin of the Australian Mathematical Society **74** (2006) 279–288.
1. *Generating Endomorphism Rings of Infinite Direct Sums and Products of Modules*, Journal of Algebra **283** (2005) 364–366.

Invited Talks

- Topological Transformation Monoids* January 17, 2020
Joint Mathematical Meetings, Denver, CO
- Leavitt Path Algebras and the Kaplansky Property for Prime Spectra* April 14, 2018
AMS Spring Western Sectional Meeting, Portland, OR
- Infinite-Dimensional Diagonalization* November 15, 2016
Graduate Algebra Seminar, University of Colorado, Boulder, CO
- Topological Graph Inverse Semigroups* October 9, 2016
AMS Fall Western Sectional Meeting, Denver, CO
- Leavitt Path Algebras and Possible Prime Spectra of Rings* September 24, 2016
AMS Fall Eastern Sectional Meeting, Brunswick, ME
- Infinite-Dimensional Diagonalization* June 4, 2015
University of Málaga, Málaga, Spain
- Infinite-Dimensional Diagonalization* March 26, 2015
Mathematics Colloquium, University of Dayton, Dayton, OH
- Generalizations of Shoda's Theorem* October 18, 2013
AMS Fall Central Sectional Meeting, Saint Louis, MO
- Evaluating Polynomials on Matrices* August 29, 2013
Mathematics Colloquium,
University of Colorado, Colorado Springs, CO
- Generalizations of Shoda's Theorem* April 28, 2013
AMS Spring Central Sectional Meeting, Ames, IA
- Commutator Rings and Leavitt Path Algebras* March 3, 2012
AMS Spring Western Sectional Meeting, Honolulu, HI
- Groups Where Free Subgroups are Abundant* November 4, 2011
Fearless Friday Talk Series, Colorado College, Colorado Springs, CO
- Conjugation of Injections by Permutations* May 7, 2010
Meeting of the North British Semigroups and Applications Network,
St Andrews, Scotland
- Conjugation of Injections by Permutations* February 25, 2010
Mathematics Colloquium,
University of Colorado, Colorado Springs, CO
- Minimal and Ideal Extensions of Rings* December 24, 2008
Algebra Seminar, Bar Ilan University, Ramat Gan, Israel
- Minimal and Ideal Extensions of Rings* December 17, 2008
Algebra Seminar, Ben Gurion University, Beer Sheva, Israel

<i>Minimal Extensions of Rings</i> Algebraic Geometry and Representation Theory Seminar, Weizmann Institute of Science, Rehovot, Israel	December 7, 2008
<i>Minimal Extensions of Rings</i> Ohio State-Denison Mathematics Conference, Columbus, OH	May 17, 2008
<i>Monoids, Groups, and Rings of Endomorphisms</i> Southern California Algebra Conference, Los Angeles, CA	March 3, 2007
<i>Connections Between Infinite Permutation Groups and Endomorphism Rings</i> Algebra Seminar, University of Southern California, Los Angeles, CA	October 16, 2006
<i>Connections Between Infinite Permutation Groups and Endomorphism Rings</i> Metron Scientific Solutions, Reston, VA	July 17, 2006

Other Conference Talks

<i>An Infinite Cardinal-Valued Krull Dimension</i> Southern Regional Algebra Conference, Lafayette, LA	April 6, 2019
<i>Traces on Semigroup Rings</i> Ohio State-Denison Mathematics Conference, Columbus, OH	May 10, 2014
<i>Commutator Rings and Leavitt Path Algebras</i> Ohio State-Denison Mathematics Conference, Columbus, OH	May 25, 2012
<i>Groups Where Free Subgroups are Abundant</i> Groups and Model Theory Conference, Mülheim an der Ruhr, Germany	May 30, 2011
<i>Minimal Extensions of Rings</i> Conference on Algebra and its Applications, Athens, OH	June 21, 2008

Research Students

Ikuko Saito, M.S. Thesis: *Traceless Matrices That are not Commutators* (UCCS, 2016)

Courses Taught

At the University of Colorado, Colorado Springs (2010–present)

- Math 1350 - Calculus I
- Math 1360 - Calculus II
- Math 2150 - Discrete Mathematics
- Math 3110 - Theory of Numbers
- Math 3130 - Introduction to Linear Algebra
- Math 4040 - Senior Math Seminar

- Math 4140 - Modern Algebra I
- Math 4150/5150 - Modern Algebra II
- Math 5270/6270 - Algebraic Coding Theory

At the University of Southern California (2006–2008)

- Math 117 - Precalculus
- Math 200 - Elementary Mathematics from an Advanced Standpoint
- Math 218 - Statistics for Business
- Math 225 - Linear Algebra and Differential Equations

At the University of California, Berkeley (2004)

- Math 16B - Analytic Geometry and Calculus

Administrative Assignments (at UCCS)

Chair of the Department of Mathematics	07/2019–06/2022
Chair of the Mathematics Undergraduate Committee	08/2015–01/2018

Committee Assignments (at UCCS)

Course Scheduling and Capacity Subcommittee of the UCCS Strategic Enrollment Initiative	07/2019–present
Mathematics Primary Unit Evaluation Committee	08/2015–present
Retention and Graduation Subcommittee of the UCCS Strategic Enrollment Initiative	01/2018–06/2019
Mathematics Undergraduate Committee	11/2010–06/2019
Mathematics Bylaws Committee	03/2017–11/2018
Discrete Mathematics Book Search Committee	01/2018–04/2018
LAS College Budget and Planning Committee	12/2012–05/2015
Mathematics Program Fee Committee	09/2013–08/2014
LAS College Planning Committee	02/2012–11/2012

Dissertation Committees

Luke Harmon, Ph.D., UCCS, 2019
 Jacob Karn, M.S., UCCS, 2018
 Ikuko Saito, M.S., UCCS, 2016
 Luke Harmon, M.S., UCCS, 2015

Conference Organization

33rd Ohio State-Denison Mathematics Conference Ring Theory Session (2016), Columbus, OH (with Sergio López-Permouth, Pace Nielsen, S. Tariq Rizvi, Cosmin Roman)

Special Session on Associative Rings and Their Modules, 2013 AMS Spring Western Sectional Meeting, Boulder, CO (with Greg Oman)

Refereeing

Advances in Mathematics

Algebras and Representation Theory

Communications in Algebra

Forum Mathematicum

Journal of Algebra

Journal of Algebra and its Applications

Journal of Algebra, Number Theory, and Applications

Journal of Pure and Applied Algebra

Journal of the European Mathematical Society

Linear Algebra and its Applications (4)

Linear and Multilinear Algebra (2)

Operators and Matrices (2)

Publicacions Matemàtiques

Semigroup Forum (2)

Topology and its Applications

Transactions of the American Mathematical Society