Curriculum Vitae

CONTACT INFORMATION

Department of Mathematical Science
University of Alabama in Huntsville
Huntsville, AL, 35899

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EDUCATION

2018	PhD	Mathematics	Ohio University
2013	MA	Mathematics	Saint Louis University
2011	BA	Mathematics	Saint Louis University

Dissertation Adviser: Sergio R. López-Permouth
Dissertation Title: Some Topics in Infinite Dimensional Algebra

EMPLOYMENT

2023. Assistant Professor of Applied Algebra, University of Alabama in Huntsville, Huntsville, Alabama, USA

2020. Postdoctoral Research Fellow, Baylor University, Waco, Texas, USA

2018. Visiting Assistant Professor, John Carroll University, University Heights, Ohio, USA

PUBLICATIONS

2023. (with D. Herden and A. Pasi) **Forcing a Basis into $\aleph_1$-Free Groups.** *Journal of Algebra*, 627:43–57.

2021. **Ideal Extensions and Directly Infinite Matrix Algebras.** *Journal of Pure and Applied Algebra*, 226(7):106982.

2019. (with S. R. López-Permouth) **On the Associativity of Infinite Matrix Multiplication.** *American Mathematical Monthly*, 126(1):41–52.

2018. (with S. R. López-Permouth) **Algebras Having Bases Consisting Solely of Strongly Regular Elements.** *Journal of Pure and Applied Algebra*, 223(8):3485–3498.

2018. (with S. R. López-Permouth) **Strongly Regular Elements in Leavitt Path Algebras.** *Communications in Algebra*, 47(8):3141–3153.

Preprints

2019. **A Family of Almost Invertible Infinite Matrices.** arXiv:1909.04007.

In Preparation

2022. (with D. Herden) **List Decoding for Skew Reed-Solomon Codes**

2022. (with D. Herden and A. Pasi) **The Baer Specker Group is Worse than we Thought**

2022. (with D. Herden and I. Ruiz-Bolaños) **Nonlinear Block Codes for the Insertion/Deletion Channel**

AWARDS AND HONORS

2017. **Charles M. Baker Scholarship** from the Ohio University Department of Mathematics. ($500 Award, one is given each year to an outstanding graduate student for service to the department.)

2013. **Andrews Award** from the Saint Louis University Department of Mathematics and Computer Science. ($200 award, one is given each year to an outstanding graduate student for scholarship and service to the department.)

EXTERNAL TALKS

2022. **Ohio University Algebra Seminar** Ideal Extensions and Directly Infinite Algebras, Mar. 22, 2022.

2022. **Ducze University (Turkey) Leavitt Path Algebra Seminar** Locally Invertible Bases for Leavitt Path Algebras, Jan. 26, 2022.

2021. **University of Colorado - Colorado Springs Mathematics Department Colloquium** Ideal Extensions and Directly Infinite Algebras, Oct. 7, 2021.

2020. **Manhattan College Mathematics Seminar** Cube Roots and Trisected Angles, Dec. 9, 2020.

2019. **Ohio State University/Ohio University Ring Theory Seminar** Matrix Embeddings of Directly Infinite Algebras, Oct. 25, 2019.

2019. **Ohio University Algebra Seminar** Inner Automorphisms of Infinite Dimensional Algebras, Jul. 18, 2019.

2017. **Saint Louis University Algebra Seminar** Leavitt Path Algebras Having Bases Consisting Solely of Strongly Regular Elements, Nov. 9, 2017.

2017. **Wright State University Colloquium** Algebras Having Bases Consisting Solely of Strongly Regular Elements, Nov. 3, 2017.

2017. **University of Colorado - Colorado Springs Mathematics Department Colloquium** Associativity and Infinite Matrices Oct. 27, 2017.

2017. **University of Colorado - Colorado Springs Algebra Seminar** Leavitt Path Algebras Having Bases Consisting Solely of Strongly Regular Elements, Oct. 26, 2017.

2017. **University of Dayton Algebra Seminar** Algebras Having Bases Consisting Solely of Regular Elements , Oct. 19, 2017.

2017. **Ohio State university/Ohio University Ring Theory Seminar** Leavitt Path Algebras Having Bases Consisting Solely of Strongly Regular Elements, Sep. 22, 2017.

2017. **Ohio State University/Ohio University Ring Theory Seminar** Algebras Having Bases Whose Elements are Locally Invertible With Respect to a Family of Local Units, Mar. 24, 2017.

CONFERENCE ACTIVITY

2023. **Joint Mathematics Meetings**. AMS Contributed paper Session, Evaluation of Multivariate Skew Polynomials over Finite Fields, Jan. 7, 2023

2022. 35th Ohio State - Denison Mathematics Conference. Trivial Extensions of $K[x, x^{-1}]$ by $M_\infty(K)$, May 14, 2022

2022. **AMS Central Sectional Meeting**(online), Contributed Paper Session, Ideal Extensions and Directly Infinite Algebras, Mar. 26, 2022

2019. **Joint Mathematics Meetings**, AMS Contributed Paper Session, The Toeplitz-Jacobson Algebra is not Spanned by Strongly Regular Elements, Baltimore, MD, Jan. 16-19, 2019

2018. **AMS Central Sectional Meeting**, Special Session on Categorical, Homological and Combinatorial Methods in Algebra, Algebras Having Bases Consisting Solely of Strongly Regular Elements, Columbus, OH, Mar 17-18, 2018.

2018. **Joint Mathematics Meetings**, AMS Contributed Paper Session, Algebras Having Bases Consisting Solely of Strongly Regular Elements, San Diego, CA, Jan 10-13, 2018.

2017. **Joint Mathematics Meetings**, AMS Contributed Paper Session, Associativity and Infinite Matrices, Atlanta GA, Jan. 4-7, 2017.

2016. **Ohio State University-Denison Conference in Ring Theory** Infinite Matrices and Applications, Columbus OH, May 13-15, 2016.

2015. **Eastern Kentucky University Symposium**, An Introduction to Leavitt Path Algebras, Richmond KY, Apr. 17, 2015.

2014. **Eastern Kentucky University Symposium** Clean Rings and their Generalizations, Richmond KY, April 4, 2014.

SEMINARS ORGANIZED

2022. **Southern Local Algebra Meeting (SLAM)** (Co-Organizer), February 2022, Baylor University, Waco, TX

2021. **Baylor University Algebra and Combinatorics Seminar** (bi-weekly research seminar), Fall Semester 2021 -Fall Semester 2022, Baylor University, Waco TX.

2016. **Lecture Series on Set Theory and Algebra** (organized and presented weekly), Fall Semester 2016, Ohio University, Athens OH.

DEPARTMENTAL TALKS

2022. **The GM-MDS Conjecture**, Baylor University Algebra and Combinatorics Seminar, Baylor University, Waco, TX.

2019. **Guest Lecture: What Can You Make with Origami?**, Entering STEM Course, John Carroll University, University Heights, OH.

2018. **Extensions of Cuntz Algebras by the Compact Operators**, Ohio University Analysis Seminar, Athens OH.

2017. **The Abelian Core of Graph C^*-Algebras**, Ohio University Analysis Seminar, Athens OH.

2017. **Coloring the Plane and Paper Cranes: The Mathematics of Origami**, Ohio University Math Club, Athens OH.

2017. **Leavitt Path Algebras Whose Bases Consist Solely of Strongly Regular Elements**, Ohio University Operator Theory/ Graph Algebras Learning Seminar, Athens OH.

2017. **Invertible and Locally Invertible Algebras** Ohio University Algebra Seminar, Athens OH.

2016. **Paradoxes in Voting Theory** Ohio University Math Club, Athens OH.

2014. **On Constructible Numbers**, Ohio University Senior Undergraduate Seminar, Athens OH.

2012. **A Property of Rings of Linear Transformations**, Saint Louis University Algebra Seminar, St. Louis, MO.

2012. **A Property of Unit Regular Rings**, Saint Louis University Algebra Seminar, St. Louis MO.

DEPARTMENTAL SERVICE

2023. **Colloquium Committee**, Chair, University of Alabama in Huntsville, Huntsville, AL.

2023. UAH Math Club, Co-Advisory, University of Alabama in Huntsville, Huntsville, AL.

2019. **Calculus Textbook Committee**, John Carroll University, University Heights, OH.

2018. **Pi Mu Epsilon**, Advisor for the Ohio Lambda Chapter of Pi Mu Epsilon, John Carroll University, University Heights, OH.

2018. **Putnam Exam**, Co-advisor to the John Carroll U. team, Department of Mathematics and Computer Science, John Carroll University, University Heights, OH.

2016. **Morton Mathematics Tutoring Lab**, co-founder and tutor, Department of Mathematics, Ohio University, Athens OH.

TEACHING

Baylor University

Calculus 1 (Fall 2020)

Calculus 2 (Spring 2021)

Graduate Topics in Algebra: Algebraic Coding Theory (Fall 2021)

Linear Algebra (Spring 2022)

Ordinary Differential Equations (Spring 2023)

John Carroll University

Introduction to Abstract Algebra (Fall 2019)

Discrete Mathematics (Fall 2018 and Spring 2019)

Elementary Statistics (Spring 2020)

Calculus and Analytic Geometry I (Fall 2018 and Fall 2019)

Calculus and Analytic Geometry II (Spring 2019 and Spring 2020)

Linear Algebra (Spring 2019 and Spring 2020)

Ohio University

Introduction to Statistics (Spring 2015, Fall 2015, and Fall 2016).

Precalculus (Spring 2017 and Fall 2017).

College Algebra (Fall 2013 and Spring 2014).

Game Theory (Spring 2018).

Business Calculus (Fall 2014).

Saint Louis University

Introduction to Statistics with Computers (Spring 2013).

College Algebra (Spring 2012).

Finite Mathematics (Fall 2012).

Johns Hopkins University Center for Talented Youth

Inductive and Deductive Reasoning, Young Student Program (Summer 2016 and Summer 2017).

SUPERVISING AND MENTORING

J. Indalecio Ruiz-Bolaños, PhD Student, 2021-present (Co-Advised with D. Herden)

Beatríz Montero-Deus, PhD Student, 2022-present (Co-Advised with D. Herden)

PROFESSIONAL MEMBERSHIPS

American Mathematical Society

Association for Women in Mathematics

Institute of Electrical and Electronics Engineers