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## Education

- 2019–2023 **Ph.D. in Mathematics**, *Bowling Green State University*, Bowling Green, OH
- Dissertation: *Generalizations of the Exterior Algebra*
  - Advisor: Dr. Mihai Staic
- 2017–2018 **M.A. in Mathematics**, *Bowling Green State University*, Bowling Green, OH
- 2013–2017 **B.S. in Mathematics and Physics with a Minor in Computer Science**, *Clarion University of Pennsylvania*, Clarion, PA

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## Publications

Steven R Lippold, *Generalizations of the exterior algebra*, Ph.D. thesis, Bowling Green State University, 2023.

Steven R Lippold and Mihai D Staic, *Existence of a map  $\det^{S^3}$* , arXiv:2211.10375, Submitted for publication.

Steven R Lippold, Mihai D Staic, and Alin Stancu, *Edge partitions of the complete graph and a determinant-like function*, *Monatshefte für Mathematik* **198** (2022), 819–858.

Mihai D Staic and Steven R Lippold, *Partitions of the complete hypergraph  $K_6^3$  and a determinant-like function*, *Journal of Algebraic Combinatorics* **56** (2022), 969–1003.

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## Research Interests

Multilinear Algebra, Generalizations of Linear Algebra Concepts, and Combinatorics

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## Academic Job Experience

- 2023–2025 **Visiting Assistant Professor**, *Taylor University*, Upland, IN
- MAT 151: Calculus 1 (2 sections)
  - MAT 215: Discrete Math for Computer Science (2 sections)
- 2019–2023 **Instructor**, *Bowling Green State University*, Bowling Green, OH
- MATH 1310: Calculus with Analytic Geometry 1 (5 sections)
  - MATH 1340: Calculus with Analytic Geometry 1A (1 section)
  - MATH 1350: Calculus with Analytic Geometry 1B (1 section)
  - MATH 2320: Calculus with Analytic Geometry 2 (4 sections)
- 2017–2019 **Instructor of Record**, *Bowling Green State University*, Bowling Green, OH
- MATH 99: Algebra Review (4 sections)
  - MATH 1220: College Algebra (4 sections)
  - Both MATH 99 and 1220 were in a Math Emporium Setting.

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## Other Relevant Job Experience

- 2022 **Graduate Student Orientation (GSO) Development Leader**, *Bowling Green State University*, Bowling Green, OH
- Job Responsibilities: Plan meals and events during GSO for the Mathematics and Statistics Department, Organize logistics of meals
- 2020 – 2021 **Peer Mentor**, *Bowling Green State University*, Bowling Green, OH
- Mentees taught MATH 1310: Calculus with Analytic Geometry 1 or MATH 1340: Calculus with Analytic Geometry 1A.

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## Academic Honors and Awards

- 2023 **Graduate Excellence in Teaching Award**, *Bowling Green State University*, Bowling Green, OH
- 2022 **Judyta & Bronislaw Blass Memorial Fellowship**, *Bowling Green State University*, Bowling Green, OH
- 2019 **James Robert and Gretchen Overman Scholarship**, *Bowling Green State University*, Bowling Green, OH
- 2018 **James Robert and Gretchen Overman Scholarship**, *Bowling Green State University*, Bowling Green, OH
- 2016–2017 **Dean’s List**, *Clarion University of Pennsylvania*, Clarion, PA
- 2015–2016 **Dean’s List**, *Clarion University of Pennsylvania*, Clarion, PA
- 2014–2015 **Dean’s List**, *Clarion University of Pennsylvania*, Clarion, PA
- 2013–2014 **Dean’s List**, *Clarion University of Pennsylvania*, Clarion, PA

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## Talks Given

- January 2023 **Joint Mathematics Meetings 2023**, *American Mathematical Society*, AMS Special Session on Topological and Combinatorial Methods in Commutative Algebra
- Title: Edge partitions of the complete graph and a determinant-like function
- November 2022 **Binghamton University Graduate Combinatorics, Algebra, and Topology Conference**, *Binghamton University*
- Title: Graph Theory and a Generalization of the Exterior Algebra
- September 2022 **Graduate Student Seminar**, *Bowling Green State University*
- Title: An Introduction to Category Theory and Homological Algebra.
- September 2022 **Graduate Student Seminar**, *Bowling Green State University*
- Title: The Combinatorics of Generalizations of the Exterior Algebra.
- September 2022 **Graduate Student Seminar**, *Bowling Green State University*
- Title: The Construction of Determinant-like Maps.
- April 2022 **Graduate Student Seminar**, *Bowling Green State University*
- Title: Edge Partitions and Generalizations of the Exterior Algebra.
- March 2022 **Graduate Student Seminar**, *Bowling Green State University*
- Title: Hochschild Homology and Kähler Differentials
- February 2022 **Graduate Student Seminar**, *Bowling Green State University*
- Title: Simplicial Sets
- February 2022 **Graduate Student Seminar**, *Bowling Green State University*
- Title: Graphs and Hypergraphs
- February 2020 **Graduate Student Seminar**, *Bowling Green State University*
- Title: Fuzzy Logic and Sets
- February 2020 **Graduate Student Seminar**, *Bowling Green State University*
- Title: Extensions of Algebras
- September 2019 **Graduate Student Seminar**, *Bowling Green State University*
- Title: Simplicial Sets
- September 2019 **Graduate Student Seminar**, *Bowling Green State University*
- Title: Basic Knot Theory
- May 2019 **Algebra and Topology Seminar**, *Bowling Green State University*
- Title: Spectral Sequences and Double Complexes
- September 2018 **Algebra and Topology Seminar**, *Bowling Green State University*
- Title: Homology and Left Derived Functors
- February 2018 **Graduate Student Seminar**, *Bowling Green State University*

- Title: Equivalence of Metrics in Finite Dimensional Vector Spaces
- Spring 2017 **Math Circles**, Clarion University of Pennsylvania
- Title: Fractional Linear Transformations
- Fall 2016 **Math Circles**, Clarion University of Pennsylvania
- Title: Art in Modular Arithmetic

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## Conferences Attended

- January 2023 **Joint Mathematical Meetings**, American Mathematical Society, Boston, MA
- May 2022 **Graduate Student Conference in Algebra, Geometry, and Topology**, Temple University, Philadelphia, PA
- May 2021 **Topology Festival 2021 Conference**, Cornell University
  - Event was held virtually
- July 2020 **Applied Category Theory Conference**, Massachusetts Institute of Technology
  - Event was held virtually
- July 2019 **Graduate Summer School on Homological Algebra of Mirror Symmetry**, The Fields Institute for Research in Mathematical Sciences, Toronto, ON
- June 2018 **Graduate Student Conference in Algebra, Geometry, and Topology**, Temple University, Philadelphia, PA

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## Seminars Attended

- Spring 2022 **BGSU-UT Algebra Seminar**, Bowling Green State University & University of Toledo, Bowling Green, OH & Toledo, OH
  - Seminar is held virtually and hosted jointly by Bowling Green State University and University of Toledo
- Spring 2022 **Topology and Geometry Seminar**, Bowling Green State University & University of Toledo, Bowling Green, OH & Toledo, OH
  - Seminar is held virtually and hosted jointly by Bowling Green State University and University of Toledo
- Spring 2020 **Seminar in Math Education and Mentoring**, Bowling Green State University, Bowling Green, OH
- Spring 2018– **Graduate Student Seminar**, Bowling Green State University, Bowling Green, OH
- Spring 2018 **Seminar in Math Education and Mentoring**, Bowling Green State University, Bowling Green, OH
- Fall 2018 – Spring 2021 **Algebra and Topology Seminar**, Bowling Green State University, Bowling Green, OH
- Spring 2018 – Fall 2019 **Analysis Seminar**, Bowling Green State University, Bowling Green, OH
- 2016–2017 **Math Circles**, Clarion University of Pennsylvania, Clarion, PA

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## Service

- August 2022 **Graduate Student Orientation**, Bowling Green State University, Bowling Green, OH
  - Role: Development Leader
- April 2022 **Bowling Green State University Math Competition**, Bowling Green State University, Bowling Green, OH
  - Role: Co-Organizer
- February 2020 **Ohio Council of Teachers of Mathematics (OCTM) Mathematics Competition**, Bowling Green State University, Bowling Green, OH
  - Role: Proctor

- Fall 2019 – Spring 2023 **Graduate Student Seminar**, *Bowling Green State University*, Bowling Green, OH  
 ○ Role: Organizer
- Fall 2019 **Graduate Student Senate**, *Bowling Green State University*, Bowling Green, OH  
 ○ Role: Senator
- Fall 2019 **Fiscal Affairs Advisory Committee**, *Bowling Green State University*, Bowling Green, OH  
 ○ Role: Graduate Student Representative
- Fall 2016 – Spring 2017 **Tau Beta Sigma**, *Clarion University of Pennsylvania*, Clarion, PA  
 ○ Role: Treasurer
- Fall 2015 – Spring 2016 **Math Club**, *Clarion University of Pennsylvania*, Clarion, PA  
 ○ Role: Vice President
- Fall 2015 – Spring 2016 **Koinonia Christian Fellowship**, *Clarion University of Pennsylvania*, Clarion, PA  
 ○ Role: Co-chair of Community, Fellowship, and Service

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## Professional and Honor Societies

- Since 2017 **American Mathematical Society**, *Member*
- Initiated Spring 2017 **Phi Kappa Phi Honors Society**, *Member*
- Initiated Spring 2015 **Pi Mu Epsilon Honors Mathematical Society**, *Member*
- Initiated Spring 2014 **Phi Eta Sigma Honors Freshman Society**, *Member*

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## Certificates

- August 2021 **Google IT Automation with Python**, *Google/Coursera*
- Spring 2020 **Teaching and Learning Certificate**, *Bowling Green State University*, Bowling Green, OH
- January 2020 **Active Learning Classroom Certificate**, *Bowling Green State University*, Bowling Green, OH

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## Other Skills

- Programming Languages C#, C++, Javascript, Lua, Vensim, Mathematica, Matlab, GNU Octave, Python, Bash, Puppet
- Languages (Verified Coursework) Matlab, Python, Bash, Puppet
- Modeling Software Comsol Multiphysics Program
- Experience Course Management Experience Canvas, MyOpenMath, Brightspace, Blackboard, WebAssign, ALEKS