

Shahriyar (Shah) Roshan Zamir

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EDUCATION

Mathematics Doctoral Candidate University of Nebraska Lincoln (UNL)	August 2019 - present
M.A. Pure Mathematics University of Nebraska Lincoln	May 2021
M.S. Applied and Computational Mathematics Graduate Minor in Liberal Studies University of Minnesota Duluth (UMD) Duluth, MN, USA	August 2017 - May 2019
B.S. Pure Mathematics Georgia Gwinnett College Lawrenceville, GA, USA	August 2014 - May 2017
Rochester Institute of Technology - Dubai Campus (Freshman year) Dubai, United Arab Emirates	August 2013 - May 2014

RESEARCH

Interests

- Commutative Algebra, Computational Algebra, Algebraic Geometry, Representation Theory, Finite Group Theory.

Publication

- “*Axial Constants and Sectional Regularity of Homogeneous Ideals*”
M. DeBellevue, A. Lebovitz, Y.Li, M. Lotfi, S. Mohite, X. Pan, M.S. Pathak, S. Roshan Zamir, A. Secoleanu, S.X Zhang.
Link to preprint (2021), ArXiv:2110.13782.
- “*Subgroups of Groups of Units Modulo n* ”
J. Gallian, S. Roshan Zamir.
Mathematics Magazine, October 2022, 10.1080/0025570X.2022.2094167.
Link to article.
- “*On Uniform and Non-Uniform Magic Cubes*”
In process of revision and resubmission for the *Australian Journal of Combinatorics*.

Master’s Thesis

- Title: “*Subgroups of Groups of Units Modulo n* ”
Link to Master’s Thesis
I identified and gave a full classification of some new families of subgroups of groups of units mod n .

PRESENTATIONS/WORKSHOPS

- Presented: “REUs, What, Why and How” December 2022
Undergraduate Math Club-UNL
- Presented: “*Hilbert function of the defining ideal of orbits of D_6 acting on \mathbb{P}^2* ” October 2022
Commutative Algebra Reading Seminar (CARS)-UNL
- Presented: “*What do your students really think of you?*” September 2022
Graduate Student Seminar-UNL
- Presented: “*A simplified proof of Nagata’s Counter Example to Hilbert’s 14th Problem*” April 2022
Commutative Algebra Regional Expository Seminar - Online
Link to talk’s recording
- Presented: “*Nagata’s theorem on the ring of invariants*” March 2022
Second Comprehensive Exam - UNL
Successfully passed and qualified as a Ph.D. candidate.
- Presented: “*Hilbert’s Fourteenth’s Problem and Geometric Invariant Theory*” November 2021
Commutative Algebra Regional Expository Seminar - Online
Link to talk’s recording
- Presented: “*Geometric Invariant Theory-An Introduction*” October/November 2021
Commutative Algebra Reading Seminar - UNL
In a series of two talks I gave an introduction to my current research interest, Geometric Invariant Theory.
- Presented: “*Twisted Mathematics: Subtle Microaggressions in 21st Century Math Movies*” February 2021
Graduate Student Seminar - UNL
- Presented: “*Subgroups of Groups of Units Modulo n* ” November 2020
Undergraduate Math Club - UNL
Aimed at familiarizing undergraduate math majors with mathematics research.
- Presented: “*Documentary Premiere: There Will Be An Answer*” (producer/co-director) January 2020
Joint Mathematics Meetings, Denver, CO
Link to documentary
- Presented: “*Twisted Mathematics: Subtle Microaggressions in 21st Century Math Movies*” April 2019
GRAD Talk Series-University of Minnesota Duluth
- Presented: “*Subgroups of Groups of Units Modulo n* ” January 2019
MAA General Session on Algebra - Joint Mathematics Meetings, Baltimore, MD
- Presented: “*Workshop: Group Theory in Action*” November 2018
Sonya Kovalevsky Day - College of St. Scholastica, Duluth, MN

Sonya Kovalevsky Day is aimed at encouraging female high school students to pursue Math.

- Presented: “*Subgroups of Groups of Units Modulo n* ” October 2018
MAA North Central Section Meeting - Southwest Minnesota State University
- Presented: “*Algebraic Structure of Labeled Graphs Joined by j Edges*” April 2017
Kappa Mu Epsilon National Convention - Evangel University, Springfield, MO
- Presented: “*Poster: Algebraic Structure of Labeled Graphs Joined by j Edges*” January 2017
MAA Undergraduate Poster Session - Joint Mathematics Meetings, Atlanta, GA
- Presented: “*Normal Magic Cubes and Euler Cubes*” October 2015
Kennesaw Mountain Undergraduate Mathematics Conference, Kennesaw, GA

AWARDS AND HONORS

- Ben Carse Nolting Award Fall 2021
“For efforts to create a department culture and climate that actively advances diversity, equity and inclusion in tangible and sustainable ways.”
- Parents’ Recognition Award - UNL Fall 2019
- Outstanding Graduate Teaching Assistant Award - UMD Spring 2019
- Graduate Student Service Award - UMD Spring 2019
For numerous contributions to UMD math department’s graduate community and representing math grad students at departmental meetings.
- Bulldog Award - UMD Spring 2019
For serving in co-curricular activities “ where their exemplary service and leadership qualities has positively affected the University community.”
- Recipient of Certificate: Thank a Teacher Project - UMD Spring 2019
Presented by: Center For Educational Innovation - Nominated anonymously by students for “outstanding teaching and dedication to helping students learn.”
- UMD Mathematics and Statistics Department Summer Research Fellowship Summer 2018
- Georgia Gwinnett College Graduation Honor: Cum Laude
- Georgia Gwinnett College : President’s List Spring 2016
- Georgia Gwinnett College : Dean’s Honors List Fall/Spring 2015

PROFESSIONAL ACTIVITY

- Organizer: Commutative Algebra Regional Expository Seminar-CARES Spring 2022-Present
Link to Website
- Referee for MAA's Mathematics Magazine Fall 2023-Present
- Pan-American School in Commutative Algebra, Guanajuato, Mexico. Summer 2022
- PolyMath Jr. REU Graduate Student Mentor (*Link to Website*) Summer 2021
Mentored 20 undergraduate students on research in commutative algebra.
- Directed Reading Program Mentor - UNL Spring 2020
Link to Programs Website
- Assistant Latex Editor - 10th edition of Contemporary Abstract Algebra Summer 2020
I helped Dr. Joe Gallian implement changes in the 10-th edition
of his book Contemporary Abstract Algebra, a classic in undergraduate abstract algebra.
- Site Coordinator at UNL - Triage Judge Spring 2020/2021
Mathematical Contest in Modeling (MCM)/The Interdisciplinary Contest in Modeling (ICM)
Link to ICM/MCM website
- Triage Judge-MCM/ICM Spring 2018/2019/2022
- Member of American Mathematical Association October 2017-present
- Member of Kappa Mu Epsilon - National Mathematics Honors Society June 2015-present

TEACHING EXPERIENCE

* denotes I taught the course as the *instructor of record* with full course responsibilities.

Graduate Teaching Assistant - University of Nebraska Lincoln September 2019 - Present

- **Associate Convener-Calculus II** Spring 2023
Associate Convener duties: hold weekly meetings for all other GTAs,
observe and give teaching/classroom feedback to other GTAs,
serve as a liaison between instructors and GTAs.
- **Differential Equations Recitation** Fall 2022
- **Associate Convener-College Algebra*** Fall 2021-Spring 2022
Associate Convener duties: writing the syllabus, parts of the course policy,
quizzes/exams/rubrics for all 11 sections/400 students enrolled in the course.

Observing and providing constructive pedagogical feedback to instructors.

- **College Algebra* (*Thompson Scholars*)** Spring 2021
Chosen by the department to teach a section dedicated to minority/first generation college students in the Thompson's Scholars program.
- **College Algebra*** Fall 2020
- **Calculus III Recitation** Spring 2020
- **Calculus I Recitation** Fall 2019

Upward Bound (UB) Program (*Link to UB's Website.*)

- **ACT Prep Boot Camp for UB at University of Wisconsin-Superior*** December 2020-March 2021
An online course focused on ACT Mathematics/Science prep through active learning.
- **University of Wisconsin-Superior (UWS)*** June - July 2020/2019
Taught a variety of topics, through active learning, during three and a half hour sessions including: ACT prep, introductory combinatorics, Algebra II, basic logic, Pre-Calculus and Probability.
- **College of St. Scholastica*** June 2020/2019
Class time ran for three hours, topics similar to UWS.

Graduate Teaching Assistant - University of Minnesota Duluth August 2017 - May 2019

- **Calculus I Recitation** Spring 2019
- **Calculus II Recitation** Fall 2018
- **Math 103 - Pre-Algebra*** Spring 2018
- **Discrete Math** Spring 2018
Helped students, 30 total, with proof writing in an active learning format. Occasionally prepared worksheets and lectured for the class.
- **Securian Math Lab** Spring 2018
- **Calculus I Recitation** Fall 2017
- **Full time Mathematics Tutor - Gwinnett Technical College** January 2016 - July 2017
- **Volunteer Tutoring - RIT Dubai Tutoring Center** August 2013 - June 2014

SERVICE

- Treasurer, American Mathematical Society Student Chapter at UNL Spring 2023-Present
- Organizer: Upcoming Researchers in Commutative Algebra (URiCA aka KUMUNUjr) Spring 2023
- Nebraska Conference for Undergraduate Women in Mathematics Fall 2021/2022
Organizing Committee Member, *Link to Conference's Website.*
- Mentor to a first year mathematics graduate student Fall 2021
- Volunteer Judge January 2018
Undergraduate Poster Session - Joint Mathematics Meetings, San Diego, CA
- Graduate Programs Committee - Elected Student Representative August 2018 - May 2019
University of Minnesota-Duluth
- Graduate Student Representative to the Mathematics and Statistics Department August 2017 - May 2019
University of Minnesota Duluth
- Invited Panelist - Sonya Kovalevsky Day November 2017
- President of Kappa Mu Epsilon National Mathematics Honors Society June 2015 - May 2017
GA Zeta Chapter at Georgia Gwinnett College
- Vice President - Georgia Gwinnett College Math Club August 2015 - May 2017