

L. MARIZZA A. BAILEY
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Arizona State University
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Education

2021 – 2025*	PhD	Mathematics Education, Arizona State University Students' learning and understanding of induction/recursion: A three-study approach Advisor: Dr. Dov Zakis
1998 – 2002	MS	Pure Mathematics, University of California, Irvine Advisor: Dr. Michael Fried Concentration: Arithmetic Geometry Qualifying exams: Abstract Algebra, Real Analysis, Complex Analysis
1994 – 1998	BS	Pure Mathematics, University of California, Irvine

Employment

2023 – Now	Graduate Teaching Associate School of Mathematical & Statistical Sciences Arizona State University
2019 – 2022	Secondary Mathematics Teacher <i>Mathematics Lead; Mathematics Interventionist</i> Great Hearts North Phoenix Preparatory Academy
2019 – 2022	Mathematics Instructor, Grades 7-12 <i>Course Designer; Mathematics Teacher Advisor</i> BASIS Scottsdale
2017 – 2019	Curriculum and Content Consultant BASIS Educational Ventures, LLC
2011 – 2018	Curriculum Developer & Teacher Mentor <i>District-wide Mathematics Teacher & Mentor; Mathematics Assessment Specialist</i> BASIS Educational Group
2005 – 2009	Mathematics Instructor <i>Secondary & Dual Enrollment Instructor</i> Arkansas School of Mathematics, Sciences, and the Arts
1997 – 2003	Graduate Teaching Assistant/Associate Department of Mathematics University of California, Irvine

Publications

Journal Articles

Eaton, C., & **Bailey, L.** (2018). Revealing Luz: Illuminating our identities through duoethnography. *Journal of Humanistic Mathematics*, 8(2), 60–89. <https://doi.org/10.5642/jhummath.201802.08>

Articles in Review

Bailey, L. M., & Zazkis, D. (revisions under review). Navigating through levels of abstraction. *Educational Studied in Mathematics*. Submitted October 2023.

Zazkis, D. & **Bailey, L. M.** (under review) Students' guided reinvention of direct proof and proof by cases. *Problems, Resources, and Issues in Undergraduate Studies*. Submitted June 2024.

Refereed Conference Proceedings

Bailey, L. M., Zazkis, D., & Mirin, A. (accepted). Moving between abstraction levels by linking recursion and induction. *Proceedings of the 26th Annual Conference on Research in Undergraduate Mathematics Education (RUME)*. Omaha, NE.

Bailey, L. M., & Zazkis, D. (accepted). The recursion-induction connection: A pathway for transferring levels of abstraction. *15th International Congress on Mathematical Education (ICME-15)*. Sydney, Australia.

Mirin, A., Zazkis, D., & **Bailey, L. M.** (accepted) Interential Knowledge: The glue that holds the steps in a procedure together. *North American Chapter of the International Group for the Psychology of Mathematics Education (PME-NA)*. Cleveland, OH.

Additional Presentations & Posters

Bailey, L. M. (2021). Investigations in math: Using graph theory for low-hanging fruit. *Arizona Association of Teachers of Mathematics Conference*. (Tempe, Arizona).

Bailey, L. M. (2007). Teaching introduction to set-based categories in high school. *National Consortium of Specialized Secondary Schools for Mathematics, Sciences, and Technology*. (Chicago, Illinois).

Bailey, L. M. (2006; 2008). Geometry activities for the geometry classroom: Aligned with standards. *Arkansas Mathematics Teacher Workshop*. (Hot Springs, Arkansas).

Teaching & Curriculum Experience

Courses Taught (and Designed*)

Arizona State University

MAT 170: Pathways Precalculus (Instructor)

MAT 267: Multivariable Calculus (Instructor)

University of California, Irvine

Math 1B: Precalculus (Instructor)

Math 2A: Calculus I (Recitation)

Math 2B: Calculus II (Recitation)

Math 2D: Vector Calculus (Instructor; Recitation)

Math 2J/3A: Linear Algebra (Instructor; Recitation)

Math 6AB: Boolean Algebra (Recitation)

Math 120A: Group Theory (Instructor; Recitation)

Math 120B: Ring Theory (Recitation)

Math 121AB: Linear Algebra Theory (Recitation)

Math 206: Graduate Abstract Algebra (Recitation)

Great Hearts North Phoenix Preparatory Academy

Algebra II with Trigonometry

Calculus I

Calculus II
Logic & Coding

BASIS Scottsdale
Algebra II
Precalculus
Calculus: Honors; AP AB; AP BC
Linear Algebra*
Vector Calculus*
Introduction to Category Theory*
Complex Analysis*
History of Mathematics*
Introduction to Programming*

Arkansas School of Mathematics, Sciences, and the Arts
Geometry
Algebra II
Trigonometry
Calculus: AP AB; AP BC
Introduction to Category Theory*
Complex Analysis*

Additional Curriculum Development

- Algebra 2 Textbook Development. (2017-2019). BASIS Educational Ventures, LLC.
- Precalculus Textbook Development. (2017-2019). BASIS Educational Ventures, LLC.
- Calculus Textbook Development. (2017-2019). BASIS Educational Ventures, LLC.
- Post-Calculus Capstone Curriculum. (2011-2018). BASIS Educational Group.

Teaching Certifications

- Arkansas Standard Teaching Certification (2008-2012)
- National Board Certification (2009-2019)

Mentoring & Professional Development

In-Service Teacher Mentoring

- Mathematics Lead, Grades 7-12. (2019-2022). Great Hearts North Phoenix Preparatory Academy.
- Mathematics Interventionist, Grades 7-12. (2019-2022). Great Hearts North Phoenix Preparatory Academy.
- Mathematics Teacher Advisor, Grades 7-12. (2010-2019). BASIS Scottsdale.
- District-wide Mathematics Teacher Trainer and Mentor. (2011-2018). BASIS Educational Group.

Professional Development

- Arkansas Mathematics Teacher Workshop (2006-2009).

Student Mentoring

- Mentored Masters' Student during Masters' Thesis (2023-2024)
- Mentored High School Seniors during Senior Research Project supervised by University Faculty or Non-academic Professionals (2010 - 2019) Basis Scottsdale.

Additional Mentoring

- Candidate Mentor. National Science Foundation (NSF) Presidential Award for Excellence in Mathematics and Science Teaching (PAEMST). 2016-2019.
- Candidate Mentor. National Board for Professional Teaching Standards. 2011-2014.

Research & Grant Experience

- Bringing Geometry to Life. (2010). *Alhambra Mini-Grant*. \$500.
- Resources and Technology for Underprivileged Students. (2010). *Wells Fargo Teacher Partners Program Grant*. \$954.
- Robotics in Mathematics. (2010). *National Council of Teachers in Mathematics: Connecting Mathematics to Other Subject Areas*. \$3329.

Leadership, Outreach & Service

Committees & Councils

- Society for the Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS).
 - Marketing Director 2023-2024
 - Recruiting Officer 2024-2025
- National Science Foundation Presidential Award for Excellence in Mathematics and Science Teaching
 - National Selection Committee Panelist - 2017, 2018
 - State Selection Committee Panelist - 2019, 2023

Involvement With Professional Societies

- Society for the Advancement of Chicanos/Hispanics & Native Americans in Science (SACNAS).
 - Member since 2022
- Mathematical Organization for Rehumanizing Education (MORE)
 - Member 2022 - 2023
- Presidential Award for Excellence in Mathematics and Science Teaching
 - Candidate Mentor 2017, 2018, 2023
- National Board Certified Teachers since 2010
 - Mentor 2011, 2014
- National Council for Teachers of Mathematics (NCTM). Member since 2006.
- Mathematics Association of America since 2006
- American Mathematical Society. Member since 2000

Reviewing & Reading

- North American Chapter of Psychology of Mathematics Education Conference (PME-NA). 2024.
- Research in Undergraduate Mathematics Education Conference (RUME). 2023.
- AP Reader for AP Calculus AB/BC Exams. 2017-2020.

Outreach

- Graduate Student Recruiter at SACNAS National Conference. On behalf of Arizona State University School of Mathematical and Statistical Sciences. 2023.
- Designer & Implementor. Mathematics Camp for Incoming Students. Arkansas School of Mathematics, Sciences, and the Arts. 2006-2008.

Honors & Awards

- Robert G. Maule Excellence in Teaching Mathematics Award (2024) \$550
- Block Grant Summer Research Award (2024) \$5688
- SoMSS Graduate Travel Award (2024) \$558
- Graduate College Travel Award (2023) \$300
- MIT Inspirational Teacher Award Winner (2021)
- Stanford Terman Award Winner (2021).
- Northwestern Distinguished Teacher Award Finalist (2018).

- Presidential Award for Excellence in Secondary Teaching Winner (2015). \$10,000.
- Intel Science Talent Search Teacher Mentor (2015). Minor Planet (30348) named Marizzabailey
- Raytheon Math Hero Award (2012). \$5000.
- UA Little Rock STRIVE Teacher Internship (2008). Arc Flash Analyst, Arkansas Army Corps of Engineers. Blakely, DeGray, & Narrows Hydroelectric Plants.
- UCI Mathematics Doctoral Diversity Fellowship (1998).