



Institute for Mathematics & Education

G-TEAMS: Graduate Students and Teachers Engaging in Mathematical Sciences

Department of Mathematics, University of Arizona, Tucson, Arizona



G-TEAMS fellows bring their mathematical expertise into K-12 classrooms in a year-long partnership with local mathematics teachers. The goals of the program include: (i) introducing mathematical thinking to K-12 students; (ii) enriching curriculum possibilities for K-12 teachers; (iii) strengthening fellows' ability to communicate mathematical ideas to non-mathematician audiences; and (iv) introducing mathematical modeling techniques to K-12 students in order to enhance their appreciation for the role of mathematics in other disciplines.

In striving to achieve these goals, fellows have to overcome several challenges, such as: (i) discussing abstract mathematical research using limited mathematical content while still remaining faithful to the key ideas; (ii) engaging high school upperclassmen in original problem solving and changing their mindset about learning and exploring mathematics; and (iii) capturing and maintaining the attention of middle school students, particularly in math intervention classes for low achieving students.

The nine G-TEAMS fellows, whose research interests vary from applied mathematics to abstract algebra, are working in partnerships in Tucson and Casa Grande, Arizona at three elementary schools, three middle schools, and three high schools.

Megan Alexander, PhD student in Biomedical Engineering
Maggie Hacket and **Kelley Brooks**, 4th Grade Teachers

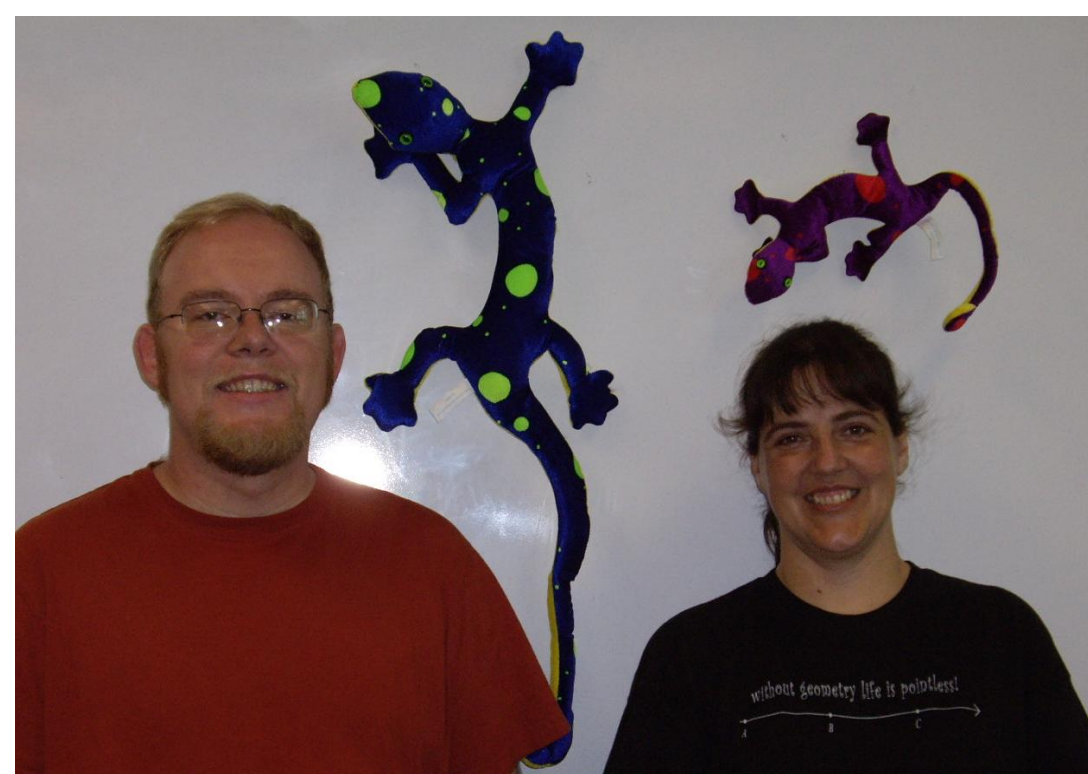


Megan's Research Interests: Biomechanics of the Recurrent Laryngeal Nerve

School: Elvira Elementary School, Tucson, AZ

G-Teams Goals: Our goals include developing better conceptual knowledge of mathematical fundamentals. We hope to broaden the students understanding of math by incorporating it into other subjects throughout each day. We want to show students how important math is in all aspects of their life with hands-on activities and real-life examples.

Michael Bishop, PhD Student in Mathematics
Lisette Eckman, Geometry and College Algebra Teacher



Michael's Research Interests: Probability, Mathematical Physics

School: Tucson High School, Tucson, AZ

G-Teams Goals: Our goals are to present mathematical ideas and problems in a way that piques the student's interest in the topic and challenges him or her to work hard in understanding the problem, solving the problem, and sharing the solution with others.

Chantel C. Blackburn, PhD Student in Mathematics
Lorraine Kaldman, 7th Grade Math Teacher

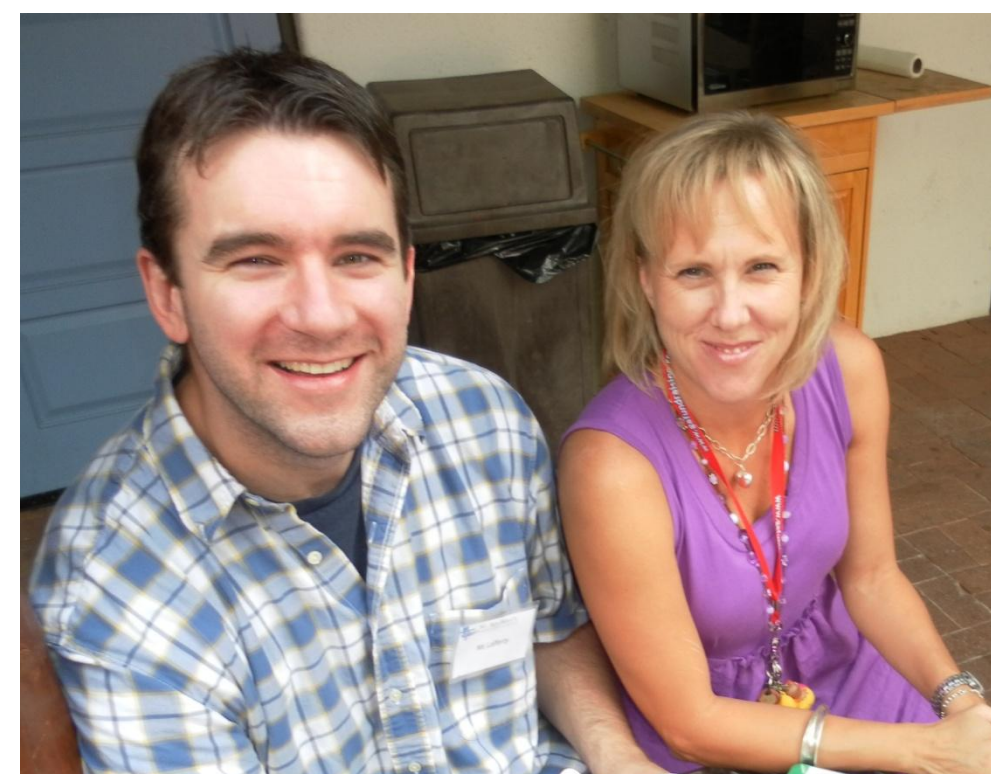


Chantel's Research Interests: Mathematics Education, Computational Group Theory

School: Safford Middle School, Tucson, AZ

G-TEAMS Goals: Developing a positive attitude in students toward mathematics, Broadening students' understanding of just what mathematics is: it is more about a way of thinking than doing calculations and that most of all it is just plain fun! And Developing mathematical thinking and reasoning in students.

Matthew Lafferty, PhD Student in Mathematics
Jennifer Gouldt, 6th through 8th Grade Math Teacher

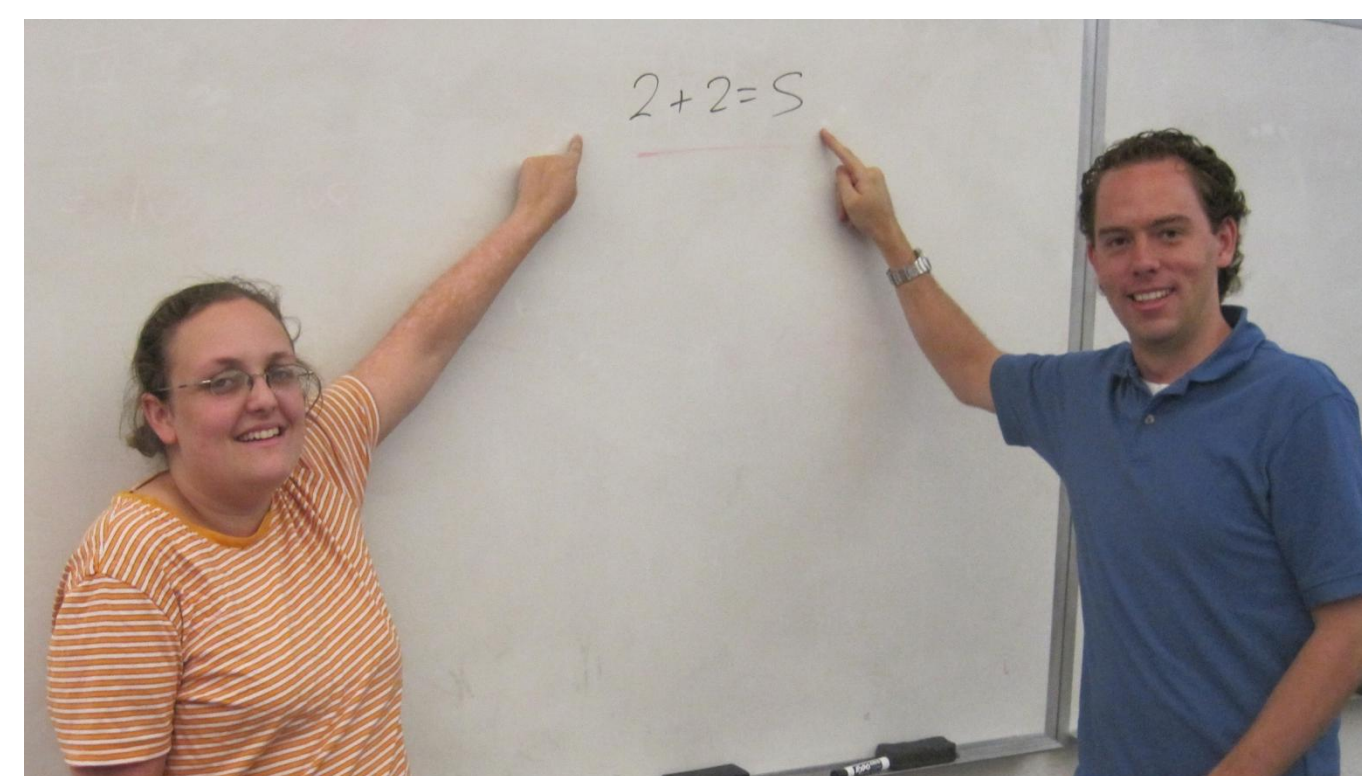


Matt's Research Interests: Number Theory

School: St. Michael's Parish Day School, Tucson, AZ

G-Teams Goals: Mrs. Gould and I are hoping to introduce concepts and lessons that will challenge mathematically-inclined students, pique the curiosity of students that were previously uninterested in mathematics, and expand the students overall idea of what mathematics is.

David Love, PhD Student in Applied Mathematics
Roz Wolfe, Algebra II & Pre-Calculus Teacher



David's Research Interests: Stochastic Programming

School: City High School, Tucson, AZ

G-Teams Goals: Our team goal is to present mathematics as a human enterprise that we have engaged in since the dawn of civilization. As part of the Algebra II and Pre-Calculus curriculum, we will include discussions of the origin and evolution of as many topics as possible. We will also use the historical development of these problems to motivate our lessons and planned activities, with the goal of allowing a more natural understanding of mathematical concepts to emerge.

Victor Piercey, PhD Student in Mathematics,
Cassidy Larkin and **Jen McCloud**, 5th Grade Teachers



Victor's Research Interests: Algebraic Geometry

School: McCartney Ranch Elementary School, Casa Grande, AZ

G-Teams Goals: (i) Convincing students of the value of math in the real world, (ii) Helping students see the mathematical ideas behind symbolic manipulations, and (iii) Identifying the sources of common misconceptions.

Kevin Powell, PhD Student in Mathematics
Karen Rakowitz and **Lourdes Oros**, 2nd Grade Teachers

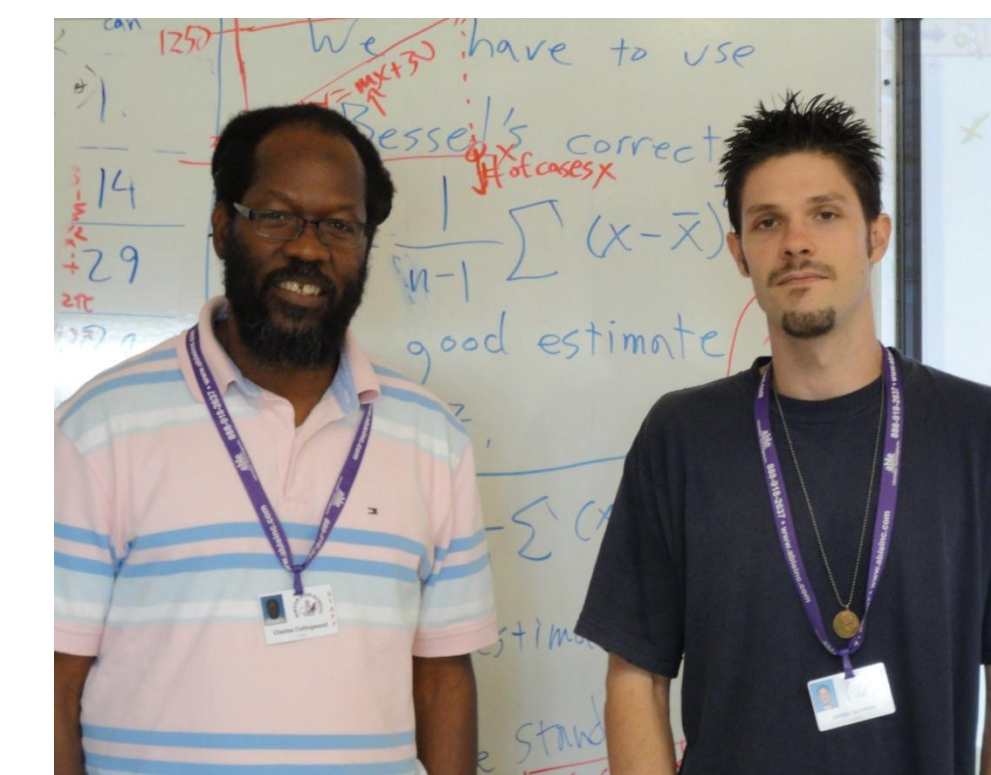


Kevin's Research Interest : Analytic Number Theory and Group Theory

School: Nash Elementary School, Tucson, AZ

G-Teams Goals: To help our students develop better critical thinking skills in mathematics and to enjoy it.

Jordan Schettler, PhD Student in Mathematics
Charles Collingwood, Pre-Calculus and Statistics Teacher

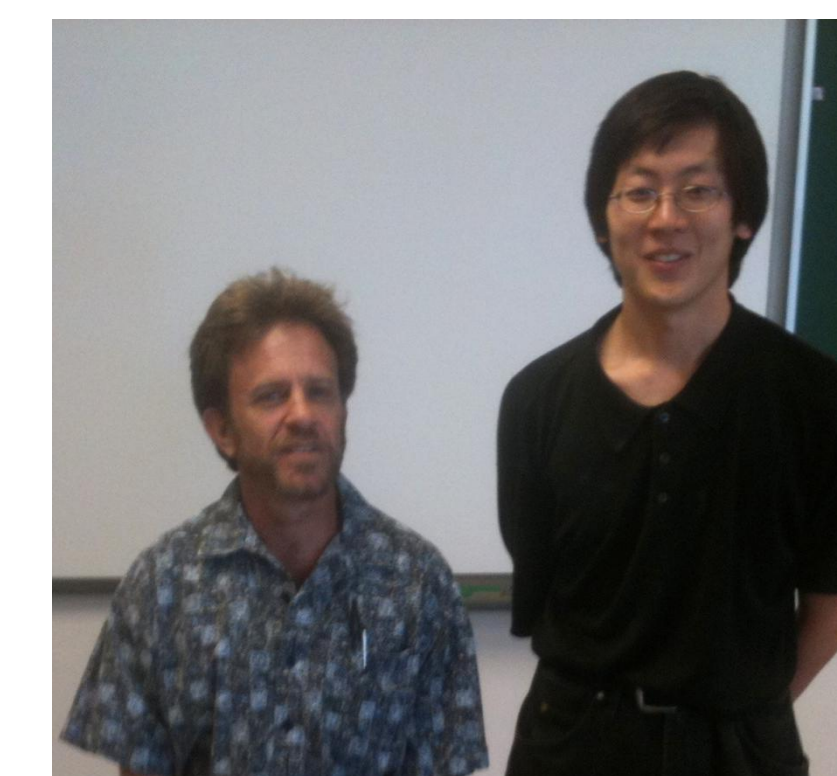


Jordan's Research Interests: Iwasawa Theory

School: Rincon High School, Tucson, AZ

G-Teams Goals: We have a deeply motivated interest in improving math and science education in a wonderful country which is woefully behind other developed nations in those areas. The common themes we'll try to incorporate are social justice, environmental responsibility, current scientific research (particularly involving mathematical modeling), and those things in life which are just inherently interesting (like black holes or transcendental numbers, for example). Generally speaking, the culture of math in this country is troubling. There is fear, dislike, and an attitude of accepting mediocrity. We'd like to be part of changing perceptions of what math is and how math should be taught.

Qiyam Tung, PhD Student in Computer Science
Michael Herzog, Middle School Math Teacher



Qiyam's Research Interests: Computer Science with a focus on Computer Vision applications

School: St. Gregory College Preparatory School, Tucson, AZ

G-Teams Goals: To have the students think logically and coherently and to be able to model real world phenomena.