School of Mathematical and Statistical Sciences
Arizona State University

M E M O R A N D U M

DATE: 06/05/2026

TO: Faculty and Students

FROM: Professors Naneh Apkarian and Sharon Crook

Co-Chairs of the Defense for Jason Guglielmo for the PhD in Mathematics Education

Committee Members:

Michelle Zandieh

Dov Zazkis

Matthew Voigt

Brittney Ellis

DEFENSE ANNOUNCEMENT

Candidate: Jason Guglielmo - Mathematics Education, PhD

Defense Date: Tuesday, June 23, 2026

Defense Time: 11:00 AM

Virtual Meeting Link: https://asu.zoom.us/j/88075429466

Room: WXLR A102

Title: Understanding Students' Math Identities through their Perceptions of their Character Enactments in the Figured World of their Precalculus Class

Please share this information with colleagues and other students, especially those studying in similar fields. Faculty and students are encouraged to attend. The defending candidate will give a 40-minute talk, after which the committee members will ask questions. There may be time for questions from those in attendance. Guests are invited to attend as observers and are excused when the committee begins its deliberations or if the committee wishes to question the candidate privately.

ABSTRACT

-See next page-

PO Box 871804 Tempe, AZ 85287-1804
(480) 965-3951 Fax: (480) 965-8119
http://math.asu.edu

Abstract

As active learning is being implemented more in undergraduate mathematics classrooms, student-instructor interactions occur more frequently and in varying contexts, which can lead to students being positioned relative to mathematics in ways they may not be used to. This dissertation uses the figured worlds theoretical framework to explore undergraduate students' perceptions of their participation in student-instructor interactions (or their *participative math identity*, PMI), with the goal of finding connections between the ways they choose to participate and their views of themselves as "math people." I draw from repeated interviews with seven undergraduate students enrolled in the same interactive Precalculus class, where they were asked to reflect on prior experiences in math classes and to review select recordings from interactions in their Precalculus class. Open coding and narrative analysis methods were used to develop and compare narrative profiles describing their PMI and their overall *relationship with mathematics* (RWM). The main findings from this analysis describe how storylines about students' *abilities to do mathematics* and *to persist through challenges* are particularly salient factors when reflecting on both their PMI and RWM. Overall, the findings exemplify how students' perceptions of their participation in their math classroom, and of their instructor's actions, connect to their views about mathematics and their relationship with it.