

Department of Mathematics and Statistics Colloquium

Student Reasoning about Eigenvectors and Eigenvalues

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Abstract: Linear algebra is a key course in students' undergraduate education across the STEM-related majors. In my research, I focus on student understanding of eigentheory because it is a conceptually complex idea that builds from and relies upon multiple key ideas in mathematics, and its application is widespread in mathematics and beyond. In this presentation, I will share research results from individual interviews regarding various ways that students in quantum physics courses reason about and symbolize eigenvectors and eigenvalues for a 2×2 matrix. I will also share research results from written assessment data from linear algebra or physics students investigating student reasoning about linear combinations of eigenvectors. I will briefly discuss why this may be a particularly challenging aspect of the eigenvector concept and what ways of reasoning may be particularly powerful for developing a conceptual understanding of eigenspace.

Monday, February 12 at 3:50 in Roop 103

Refreshments at 3:30