



Physics Colloquium



Thursday, May 5th at 3:30 pm in SC 234

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***Taking PER into the workplace: A study of math, physics,
and communication in physics-intensive careers***

STEM education enjoys broad support because STEM skills are seen as a gateway to economic prosperity for individuals, communities, and the nation. However, discipline-based education research, such as PER, rarely studies the STEM knowledge and scientific practices used as students transition into careers, while many workforce reports lack the theoretical and methodological depth of PER. I will discuss an on-going interdisciplinary study involving in-depth interviews with entry-level employees, academic researchers, and their supervisors within optics and photonics. We are documenting the context, tools, and representations that accompany the use of mathematics, physics, and communication in the workplace. Early results focus on characteristics of problems, problem-solving strategies, and mathematics use within PhD-level research and industry. Our findings suggest ways to expand the scope of the curriculum, for example, by introducing more ill-structured problems, opportunities for data analysis and interpretation, and construction of mathematical models.

Refreshments 3:00-3:20 pm in SC 103