RIT College of Science School of Physics and Astronomy

RIT School of Physics and Astronomy Colloquium

MAPLE, the Modeling Assessment for Physics Laboratory Experiments

Modeling Assessment for Physics Laboratory Experiments

Physics lab courses are wonderful places for students to learn, often in ways that are distinct and complementary to theory-focused courses. One learning outcome especially suited for laboratory learning is modeling, the process of constructing, testing, and refining models of physical and measurement systems. In order to understand and promote learning around modeling, instructors and researchers need to be able to measure such learning. To that end, my colleagues and I have created MAPLE, the Modeling Assessment for Physics Laboratory Experiments. MAPLE consists of three computer-based surveys, each contextualizing modeling within different experimental apparatus: a pendulum, an op-amp circuit, and a laser/photodiode setup. Each survey has two parts, a "choose your own adventure" part, and a series of coupled multiple response items. In this talk I present the development process and theoretical foundations of MAPLE, describe the assessments themselves, and discuss how they can be used to measure and improve laboratory learning.

Benjamin Pollard

Postdoctoral Researcher

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I am an experimental-physicist-turned-physics-education researcher with a passion for laboratory learning. My research seeks to define, measure, and expand the wealth of learning outcomes that are possible in physics lab courses. My recent work has focused on modeling and measurement uncertainty. I am also involved in community building and organization aiming to promote diversity, equity, inclusion, and social justice in STEM, through grassroots organizing, committee work in a national professional society, and leadership in The Access Network.

Wednesday, October 14th
1:25pm – 2:15pm

Register Here:

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