

SE&T Colloquium Series-Winter 2016

Speaker	Dr. Christopher Nakamura Department of Physics
Title	<i>Data Mining in Physics Education Research: Searching for Features that Matter</i>
Abstract	<p>An inherent challenge in Physics Education Research (PER) is that many of the things we try to measure are difficult to clearly define. Ideas like “conceptual understanding”, “logical reasoning” and “problem-solving skill” are often agreed upon by instructors in particular contexts but it is difficult to objectively state what cues instructors use to assess these different aspects of learning and how they are differentiated. There is significant evidence that algorithmic assessment (assessment by calculation from a mathematical model) of properties that have traditionally been assessed clinically (by human judgment) results in better, more consistent outcomes. Such algorithmic assessment requires a somewhat detailed understanding of what is important to the assessment. That understanding is currently lacking in the science classroom. We are developing a program of research using data mining and machine learning approaches with text and audio data to investigate features that are important for assessing various aspects of students’ logical reasoning in simple math and science contexts. In this talk I will discuss our research approach, and results of our initial efforts.</p>
Date	Tuesday, January 26
Time	4:10-5:00pm
Place	Pioneer 240
	Refreshments will be served at 4:00pm.