



University
of Victoria

PHYSICS AND ASTRONOMY COLLOQUIUM (In Person & Online)

Dr. Danny Caballero
MSU

**“Supporting the integration of computing in physics
education”**

Abstract

“Computing has revolutionized how modern science is done. Modern scientists use computational techniques to reduce mountains of data, to simulate impossible experiments, and to develop intuition about the behavior of complex systems. Much of the research completed by modern scientists would be impossible without the use of computing. And yet, while computing is a crucial tool of practicing scientists, most modern science curricula do not reflect its importance and utility. In this talk, I will discuss the urgent need to construct such curricula in physics and present research that investigates the challenges at a variety of all scales from the largest (institutional structures) to the smallest (student understanding of a concept). I will discuss how the results of this research can be leveraged to facilitate the computational revolution in science education. This research will help us understand and develop institutional incentives, effective teaching practices, evidence-based course activities, and valid assessment tools. This work has been supported by Michigan State University’s CREATE for STEM Institute, the National Science Foundation, the Norwegian Agency for Quality Assurance in Education (NOKUT), the Norwegian Research Council, and the Thon Foundation.”

Wednesday, March 22, 2023

3:30 p.m. PST

ECS 116

Zoom link available on Uvic Event Calendar