

TITLE:

Taxonomy of teaching practices during group projects in lab courses

ABSTRACT:

Compared to other formal learning environments in undergraduate physics programs, multiweek group projects in lab courses give rise to unique interactions between students, their peers, their instructors, and apparatus. What does teaching look like in these contexts? How do instructors change their teaching practices as students transition from proposing project topics to carrying out experiments and reporting on results? To answer these and related questions, we conducted a multiple case study of group project implementations in upper-division labs at five universities. In this presentation, we draw on data from interviews and surveys with instructors and students to identify a variety of teaching practices. We further describe the intended purposes and perceived impacts of these practices. Preliminary data analysis suggests that group projects may be a shared endeavor in which students and instructors have asymmetric apprenticeship-style roles and responsibilities.

SHORT BIO:

Dimitri Dounas-Frazer is an Assistant Professor of Physics and Astronomy and of Science, Mathematics, and Technology Education at Western Washington University in Bellingham, Washington. He earned his Ph.D from the University of California Berkeley, where he performed high precision measurements of nuclear interactions in atomic systems. He transitioned into physics education research during his postdoc at the University of Colorado Boulder, where he studied student and instructor experiences and interactions in physics laboratory courses. Currently, Dr. Dounas-Frazer is the Chair of the AAPT Committee on Laboratories and the North West Regional Director of the Advanced Laboratory Physics Association, or "ALPhA."