Using Reflections to Capture and Probe Student Epistemologies and Attitudes

Researchers: Dr. Gintaras K. Duda¹ (PI), Associate Professor of Physics
Alexis Munchrath (Undergraduate Student)

Institution: Creighton University
Contact Information: gkduda@creighton.edu¹
Mailing Address: Department of Physics¹
Creighton University
2500 California Plaza
Omaha, NE 68178

Project Abstract: Previous research has shown that problem/project-based learning (PBL) environments can effect positive changes in student attitudes and beliefs about learning. Although there has been interest in problem/project-based learning in the physics education research (PER) community as an active engagement strategy, most work done to date has focused on introductory courses with little attention paid to the transformation of student attitudes and epistemologies. This work proposes to use a large collection of student reflective journaling gathered in physics PBL courses from 2012-2016 to search for evidence of shifts in student attitudes and epistemologies. Attitude and epistemological states have been shown to play a vital role in student learning. Studying epistemologies requires qualitative data, and written reflections are an excellent and rich source of student sense-making and commentary on their beliefs about science. Prospects for the publication of this work are high; the data exists, and limited analyses of a small subsection of the reflections have shown that they contain valuable data. The funds from this grant will be used solely to fund a summer research-stipend for an undergraduate student who has become interested in educational research through her work in the physics department.