



*“What attributes of college students
influence conceptual change?”*



A Funded PhD Research Opportunity

in Undergraduate Science Education at Montana State University



We are searching for a PhD student to join our interdisciplinary research team seeking to identify attributes of college students that affect learning in science. Specifically, we want to determine how motivation, epistemic beliefs, study strategies, formal operational reasoning, biology content knowledge, and personal demographics interact with instruction to influence whether students learn key concepts in introductory biology courses.

The PhD student will collect data from 60 universities from across the United States and analyze this data using item response theory, factor analysis, and structural equation modeling. This project offers an excellent opportunity for students seeking to develop statistical skills, and the research team includes an experienced statistician to mentor this student. Our team is developing a multi-perspective framework on conceptual change in science that merges cognitive, individual, and social learning perspectives, so the PhD student will develop expertise in multiple learning theories. Students with a strong foundation in statistics and an undergraduate or Master’s degree in a related field (especially education, biology, or psychology) are encouraged to apply.

This NSF-funded project focuses on undergraduate biology, but offers opportunities for motivated students to develop their own questions. This could include extending the work into physics, chemistry, and other college science disciplines or studying how these attributes affect learning in middle or high school science.

Dr. Mary Leonard, MSU Department of Education, mleonard@montana.edu, 406-994-2336

Dr. Steven Kalinowski, MSU Department of Ecology, skalinowski@montana.edu, 406-994-3232

The preferred start date is July 1, 2015. For details about this position, please see http://www.montana.edu/education/documents/grad/BioEd_GRA_recruitmentflyer.pdf or contact Dr. Leonard or Dr. Kalinowski.