SMALL-GROUP ACTIVE-LEARNING MODULES AND THEIR IMPACTS ON STUDENT ATTITUDES AND ACHIEVEMENT IN A LARGE INTRODUCTORY GEOLOGY COURSE

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**Project Goals:**

1. Improve student engagement and attainment of course learning objectives in large lecture (65 – 115 student) course.
2. Provide students with better understanding of scientific methods and processes.
3. Give students hands-on experience in “doing geology”.

**Research Questions:**

1. Are small-group active-learning modules effective at increasing introductory geology learning objectives?
2. What is the impact of small-group active-learning modules on student attitudes towards science and the geosciences in particular?

**Implementation:**

GEOL 1121 is large-lecture course that fulfills university science requirements; many students are freshmen who are not STEM majors

Accompanying lab course (GEOL 1121L) is recommended but not required

Self-contained exercises offered during semester outside class meeting hours; students sign up for activity session (session sizes capped)

**Pre-test Activity** Administered during module

**Post-Test Activity** Administered online

Each activity takes 60-90 minutes to complete

Incentives for student participation:
- 2014 – post-test, survey part of course grade
- 2015 – participation bonus (extra-credit)

Comparison of student scores to assess module effectiveness across multiple timescales:
- Activity pre-post tests (short-term)
- Class exams (medium-term)
- Course pre-post tests (long-term)

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**Selected References:**


Materials available at: http://tinyurl.com/naxfrru