Montana Engineering Education Research Center (MEERC)

MEERC Assessment Program

The MEERC Assessment Program provides a service to faculty that are implementing educational initiatives and need a means to measure their impact. The MEERC assessment is designed to meet the needs of the individual project by providing a menu of assessment tools that span both the cognitive and affective domains of learning. The MEERC can assist with developing cognitive (i.e., the act of learning content) assessment tools that are more in-depth than standard quizzes and tests. These include rubrics for grading worked-problems, writing assignments, and lab behavior. The MEERC also assists with developing affective (i.e., motivation and personal feelings) assessment tools. The affective domain is where students form beliefs about the field they are studying. These feelings drive motivation and influence some of the most important aspects of education such as whether the student pursues a career in their field, whether the student holds their work to the highest ethical standards, and whether the student be a steward of the profession in order to recruit others into the field. The affective domain is typically where STEM researchers need the most help when assessing the impact of a new program, primarily because the methods come from outside of engineering and the physical sciences. Instead, they come from the fields of education and psychology. Affective domain assessment tools can include surveys, focus groups, ethnographic studies, and measuring behavioral choice. The goal of the MEERC assessment program is to provide researchers access to a comprehensive, domain-spanning assessment based on validated and reliable instruments. Example activities that could benefit from the MEERC assessment program are classroom innovations, curricula development, and research experience for undergraduate (REU) programs.

The MEERC Assessment Program is designed to meet the needs of the educational project while also providing training for MSU graduate students. The assessment program has stakeholders from the colleges of engineering, education, and letters & science. Once the assessment goals are defined, the implementation will be carried out by a graduate student under the supervision of a MEERC affiliate faculty member. The graduate students working on the assessment will have completed a variety of formal courses on program assessment and are given an opportunity to apply their knowledge to an actual program. Supervision by a faculty member ensures that the deliverables of the assessment are met while also mentoring the graduate students. Graduate students working within the MEERC Assessment Program can take on 2-3 assessment projects per year, giving them experience in a range of assessment types. Senior graduate students are tasked with mentoring junior graduate students in order to provide continuity in the quality of assessment and also to provide further mentoring opportunities. The MEERC Assessment Program is structured to provide a qualify assessment service to the research team while also allowing graduate students to gain experience in real assessment projects.

The MEERC Assessment Program uses a *pooled funds* model. Researchers pay a fixed cost into a pool that accumulates funds and then the MEERC handles the logistics of funding the students and faculty carrying out the assessment. This model gives the researcher a simple service cost approach to budgeting that doesn't require placing additional co-PIs on their proposal or committing to funding a full assistantship for a graduate student to perform the assessment when the actual work may not need a full-time student to complete.

How do I get started? Schedule a meeting with the MEERC Assessment Program team by emailing meerc@montana.edu. Our team will meet with you to discuss your project and assessment goals. The team will then put together a statement of work along with a proposed service fee, deliverables, and schedule. The team will also provide the appropriate text if the assessment is being written into a new grant proposal.

The MEERC Assessment Program Team:

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