PRIMES Launch: Connecting Implementation with Institutionalization

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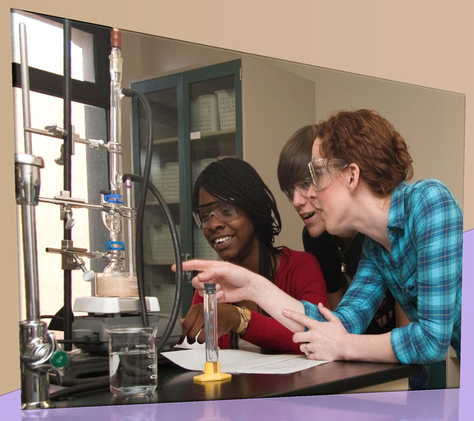

PRIMES in a Nutshell:

- A tripartite cross-College collaboration aimed at improving retention of STEM undergraduates by transforming teaching practices and increasing faculty-student interactions.
- The main strategy establishes credit-bearing UTA practicum courses that support up to 180 upper-level STEM majors in nine participating departments each academic year.
- The UTAs serve as the linchpin for a concerted effort to transform teaching and learning in introductory courses for STEM majors.
- The UTAs and the 14 PRIMES mentoring faculty form a learning community focused on integrating best practices into our freshman and sophomore level labs, recitations and peer-centered learning sessions.
- UTAs from all disciplines are trained jointly in a three day workshop with an emphasis on *experiencing* and *distilling* best practice strategies such as formulating guiding questions, formative assessments, promoting metacognitive learning.
- A complementary strategy supports both discipline-specific and University-wide community building activities.

Partnership for Retention Improvement in Mathematics, Engineering and Science (PRIMES) is

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The Launch: Linking Implementation & Institutionalization

PRIMES leaders took the unorthodox approach of institutionalizing the UTA Practicum courses right up front. The rationale was simple: intercalation of the new Practicum course into a department's curriculum reflects a visible "buy in" by STEM faculty. It validates the PRIMES focus on peer-centered instruction and the requisite pedagogy in best practices that faculty and UTAs explore together. Faculty in nine STEM departments approved the creation of a graded, senior-level course to house the Practicum: 100% success rate in targeted departments. College Curriculum Committees followed suit and the new courses will be formally listed for Fall 2012.

The pilot practicum launched in January with a three day training workshop led by co-PI, Dr. Thomas Tretter (Science Education). UTAs and STEM disciplinary faculty together built a better understanding of best practices structured around three major strands: preconceptions and mental models, formative assessment strategies and convergent and divergent questioning, post-workshop qualitative feedback from UTAs was largely positive.

We currently have 48 UTAs from seven STEM departments leading labs, recitations and smaller peer-mentored learning groups. This first cohort's efforts are supported by bimonthly seminars and an online learning community that uses Blackboard to link all students regardless of home department. Instruments for measuring the impact the UTAs have on the hundreds of novice STEM majors with whom they work are prepared and under IRB review. Senior instructor feedback and initial emerging data suggest that our UTAs are developing effective working and mentoring relationships with our novice STEM learners, which offers promise for positive impact on the STEM degree trajectories of these learners.

Challenges & Opportunities

First Year Opportunities:

- The invitation to collaborate with Drs. Muller and Grodsky (UT-Austin) on the attitudes, preparation and first year experiences of our STEM majors should yield data that we can leverage to "customize" our retention strategies.
- The decision to lead with a focus on institutionalization has already heightened the development of the project are now expressing an interest in joining.

First Year Challenges:

Navigating a university bureaucracy infrastructure that was not set up to accommodate the administration of this type of grant project. The university thus far has responded favorably….albeit slowly….with the necessary waivers to and creation of policies and protocols that were hurdles to implementation.