Integrating Research and Teaching - the Delta Program

A Case Study

► **Process Improved:** Increased engagement and commitment of Science, Technology, Engineering, and Mathematics (STEM) faculty, staff, graduate students, and post-docs in the integration of research, teaching, and learning.

► **Unit(s):** All Science, Technology, Engineering, and Mathematics (STEM) departments

► **Customers of the Process and Their Needs:** Graduate students, post-docs, faculty, and staff are invited to come together to explore issues related to research, teaching, learning, and academic life in a collaborative environment.

► **Problem/Opportunity Statement:** The Delta Program is a project of the Center for the Integration of Research, Teaching, and Learning (CIRTL). This NSF-sponsored initiative is committed to developing and supporting a learning community of STEM faculty, post-docs, graduate students, and academic staff dedicated to implementing and advancing effective teaching practices for diverse student audiences.

► **Changes Made:** The Delta Program has developed a range of opportunities including courses, discussion groups, and internships with multiple formats and ways for interested faculty, staff, post-docs, and graduate students to engage in the Delta learning community. Please see attached listing for all of the program offerings.

► **Results:** During our first year, over 200 people participated in Delta; 60 faculty, 13 post-docs, 54 staff, and 109 graduate students. The expected outcomes for participants in Delta are:

  o Develop and use skills that engage in teaching-as-research.
  o Acquire a foundational knowledge in teaching and assessment skills as appropriate to their needs, interests, and disciplinary culture.
  o Become actively involvement in an interdisciplinary teaching and learning community.
  o Have greater access to teaching and learning resources and services.
  o Strengthen their commitment to ongoing improvement of student learning
  o Understand how to create inclusive learning environments that increase the likelihood of success for all students.

We are just beginning our assessment and evaluation to determine if we are meeting these goals.

► **Lessons Learned:** We have learned that it is critical to meet each participant where they are in regards to their needs, availability, and interest. To do this, it is important that we offer a range of opportunities in varying formats and requiring varying time commitments. In addition, we have learned that we must convey a clear message to participants about what they can expect to get out of
participation in Delta and how the integration of research, teaching, and learning can lead to the improvement of learning for diverse student audiences.

► **Next Steps:** Our next steps include:
  - Continue to build a strong, viable learning community on campus, dedicated to implementing and advancing effective teaching practices for diverse student audiences.
  - Evaluate our current offerings and revise those offerings to best match the needs of our participants.
  - Continue to establish new and foster existing connections with other campus initiatives focused on teaching and learning.
  - Begin disseminating effective initiatives more broadly across campus and to other institutions.

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Graduate students, post-docs, faculty, and staff are invited to come together to explore issues related to research, teaching, learning, and the academic life in a collaborative environment. The diverse opportunities offer multiple formats and ways to engage in the community. For more information about any of these opportunities, please visit our website or contact us directly!

**Courses**

**Teaching with Technology** (Spring): choosing and implementing technology in teaching practices

**Instructional Materials Development** (Spring): designing materials for undergraduate classes

**The College Classroom** (Fall/Summer): basics of teaching and learning at the undergraduate level

**Informal Education** (Fall/Summer): communicating science to a wide variety of public audiences

**Programs**

**Expeditionary Learning**: A semester-long program for small groups to explore the vast array of teaching and learning resources on campus, and engage in facilitated discussion about their explorations and how each one can improve their teaching.

**Creating a Collaborative Environment (CCLE)**: A year-long program for small groups to collaboratively explore the complexities of the learning process, different learning styles, and individual differences through readings, activities, and discussions.

**Integrated Learning in STEM Education (ILSE)**: A graduate student/post-doc learning community that meets to discuss issues relevant to career development, share resources, and generate new professional development opportunities.

**Roundtable Dinners**: A monthly dinner format for discussion and connections in a large group setting. Discussions are facilitated and center on a topic of general interest presented by a guest speaker. All participants in any Delta program are encouraged to attend these dinners to connect with other members of the learning community.

**Internship Program**: Graduate students, post-docs and faculty/instructional staff partners implement effective teaching-as-research by defining a problem in teaching and learning, implementing a solution, and assessing its effectiveness. Internships occur on or off campus and consist of a range of experiences.

**Delta Certificate Program**: Students must complete two teaching and learning courses, an internship, participate in the Delta learning community, and generate a comprehensive Teaching and Learning Portfolio to receive a Delta Certificate in Research, Teaching, and Learning.

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