

# ICED 2020 proceedings:

## Collaborating to innovate high-level teaching engagement programs and cross-disciplinary teaching practitioner fellowships

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### **Abstract**

In recent years research universities have recognized the need for the preparation of future faculty in teaching undergraduates, especially in science technology, engineering and mathematics (STEM). The Graduate School and its partners at Michigan State University, in the United States, have offered teaching professional development programs and activities with multiple levels of engagement since 2005. Mid- (e.g., institute) and high-level engagement (teaching certification, cohort-based teaching fellowship programs) programs and activities provide diverse opportunities for graduate students and postdocs to be actively engaged in preparation for academic positions, and they have had an impact on teaching competence and job preparation.

### **1 Introduction**

Many universities focus their pedagogy training on faculty, but evidence shows great benefits in teaching professional development for graduate students, such as the increase in teaching self-efficacy as a new faculty (Austin & McDaniels, 2006; Connolly, Lee, Savoy, 2017). Common models of teaching professional development for graduate students and postdoctoral scholars include centralized activities and programs (e.g. teaching and learning centers, graduate school workshops) and departmental pedagogy preparation. The Graduate School at Michigan State University (MSU) in the U.S. has created a multi-level engagement model that provides traditional low-, but also mid- and high-level engagement in cross-disciplinary teaching professional development programs for graduate students and postdoctoral scholars. A mid-level engagement program (several hours to less than a semester) allows participants to engage in enhancing their knowledge and application of evidence-based teaching and learning practices through a semester-long bi-weekly Lunch and Learn Series, a Graduate Teaching Assistant Program and a Certification in College Teaching Institute. Two high-level teaching and learning professional development programs (more than a semester) are a Certificate of College Teaching Program and competitive, cohort-based, academic-year long Teaching Fellowship programs.

### **2 Framework and levels of engagement**

The framework used for teaching professional development is based on levels of engagement. These are associated with broad goals and more specific learning objectives which correspond to teaching preparation goals for increased instructional competency.

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## **2.1 Rationale for the multi-level framework**

The rationale for the multi-level framework is to provide professional development which (1) responds to the needs of people with various interests, amounts of time, and levels of support for increasing teaching competencies; (2) builds a foundation for other types of professional development around teaching; and (3) imparts transferrable skills through teaching relevant to leading workshops, conducting training sessions and executing evaluation processes.

## **2.2. Description of programs within the multi-level framework**

A framework for teaching professional development has been created over the years which is classified by increasing levels of engagement or hours of engagement. Graduate students and postdocs often receive initial exposure to or preparation on teaching-related topics in relatively short workshops or at the beginning of their preparation as Graduate Teaching Assistants, usually provided by their academic units (low-level, low hours of engagement) and through graduate school offerings. When teaching in their disciplines becomes more demanding in content, targeted preparation for teaching in the discipline, including large lectures and seminars and credit-carrying courses, may be offered by the respective departments or through offerings from the CIRTL Network<sup>4</sup>. They may also attend a more extensive Graduate Assistant Orientation and Institute, a Certificate of College Teaching Institute (CCTI), or a Lunch and Learn Best Practices in Teaching Series (mid-level, 10-15 hours' engagement). At the high level of engagement (levels 3 and 4) of teaching professional development there are two programs. Through (1) the Certificate of College Teaching Program, graduate students and postdocs acquire essential competencies for teaching in a two-day training program (CCTI), credit-carrying courses in the discipline, additional workshops, and a mentored teaching project. All experiences documented culminate in an online portfolio (high-level engagement teaching professional development). In addition, students can (2) apply for competitive cohort-based teaching fellowship programs which span an academic year. Their selected participants plan, implement and evaluate a teaching-related project and participate in frequent meetings to discuss teaching-related literature and topics to help prepare them to complete their projects and apply for academic positions in a community of practice. Table 1 shows an overview of the multi-level framework and programs.

## **3 High-level engagement programs**

The high-level engagement programs offered by the Graduate School have gained increasing popularity with graduate students of various disciplines. The programs have common and distinct elements.

### **3.1 Certificate of College Teaching Program**

The Certificate of College Teaching Program involves participation in a two-day institute focusing on (1) Developing Discipline Related Teaching Strategies; (2) Creating Effective Learning Environments; (3) Incorporating Technology in your Teaching; (4) Understanding the University Context; (5) Assessing Student Learning; and (6) Teaching Philosophy. The students can attend scaffolding sessions that help them to complete teaching portfolios, in which they demonstrate the application of all these components in their own work.

### **3.2 Cohort-based teaching fellowship programs**

The Graduate School also supports five distinct year-long teaching fellowship programs led by

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<sup>4</sup> <https://www.cirtl.net>

cross-disciplinary teams of faculty, staff and administrators who integrate all four levels of engagement in this program and guide the cohorts in developing, implementing and evaluating the mentored teaching projects developed. Six to 14 fellows are selected annually among the doctoral students who apply to these programs. The first of the programs was the FAST (Future Academic Scholars in Teaching) Fellowship Program, which started in 2006 with funding from the Graduate School and the National Science Foundation (Vergara et al. 2013, Prevost et al. 2017). Other example programs are the RCAH Fellowship,<sup>5</sup> the IIT Fellowship Program<sup>6</sup> and the SUTL Fellowship<sup>7</sup>.

Level of Engagement and Goals	Learning Objectives	What will this prepare you to do? (teaching goals)	Program
LEVEL 1 (low): Acquire Teaching Fundamentals	Design learning experiences to maximize student learning.	Engage students to successfully master content.	Occasional workshops and webinars (1-1.5 hours at a time)
LEVEL 2 (mid): Integrate Teaching Fundamentals with Disciplinary Content	Develop learning experiences for the acquisition and application of discipline-specific content and processes.	Teach students how to apply discipline-specific knowledge to solve problems.	Bi-weekly Lunch and Learn Sessions, a two-day Certificate of College Teaching Institute, and Graduate Assistant Orientation and Training
LEVEL 3 (high): Practice Classroom-Based Assessment	Identify a question about teaching or student learning, design a protocol to investigate that question, implement protocol or intervention, collect data, and use the data to inform teaching.	Assess what students are learning in your courses.  Recognize how to match methods of assessment to specific learning goals in your classes.	Certificate of College Teaching Program with Scaffolding sessions to help with the completion of Teaching Portfolio
LEVEL 4 (high): Practice Classroom-Based Assessment Participate in a Community of Practice	Disseminate knowledge of teaching fundamentals and/or discipline-specific pedagogical knowledge by participating in communities of practice with other teacher-scholars	Connect your teaching preparation to scholarship in teaching and learning in your field.  Demonstrate your leadership in the area of teaching.	Cohort-based teaching fellowship programs that last for a semester; participants meet frequently in a community of practice.

Table 1: Levels of engagement in teaching professional development at Michigan State University

### 3.3 Common and distinct elements of high-level engagement programs

The two high-level programs have a common element in the assessment-based project. They are also different in how individuals engage together.

#### 3.3.1 Assessment-based projects

The most comprehensive component of both the Certificate of College Teaching Program and the Fellowship programs is the assessment-based project. The project's goal is to (1) introduce innovations in MSU undergraduate courses, and (2) prepare graduate students to be more reflective teacher-scholars who use evidence-based teaching and learning practices in their faculty careers.

<sup>5</sup> <https://grad.msu.edu/rcah-fellows>

<sup>6</sup> <https://grad.msu.edu/iit>

<sup>7</sup> <https://grad.msu.edu/sutl>

### 3.3.2 *Communities of Practice*

Fellowship programs differ from the Certificate of College Teaching Program in that they build Communities of Practice, where fellows support each other in their professional development and provide feedback on their assessment-based projects.

## 4 *Impact of mid- and high-level engagement programs*

High-level engagement fellowship program assessments indicate that these programs benefit students, faculty and the campus in ways that are different from traditional models (Triezenberg, H. A., Doberneck, D., Campa, H. III., 2020). This is also true of the college teaching preparation fellowship programs. Specifically, they (1) create an expanded cross-disciplinary teaching network that better prepares graduate students to engage in a broad university context; (2) connect central conversations about pedagogical design with real-time innovations in MSU undergraduate classrooms; (3) provide a space for iterative and sustained reflections that change disciplinary habits of mind and transform the ways that faculty and graduate students frame teaching and learning practices; and (4) make participants aware that teaching skills are transferrable to multiple contexts and professions. Attendees of these programs have attributed their success in career advancement to their high-level engagement teaching professional development experiences.

## 5 *Conclusions*

Whereas each program type focuses on various components imperative in teaching professional development, mid-level programs provide increasing continuity and support. High-level programs, however, work toward a culminating goal – the classroom-based assessment project – which demonstrates the application of teaching competencies. These projects, especially when combined with peer support, become transformative experiences and shape participants' habits of mind as they embark on their teaching careers.

## *References*

- Austin, A. E., & McDaniels, M. (2006). Preparing the professoriate of the future: Graduate student socialization for faculty roles. In *HIGHER EDUCATION*: (pp. 397-456). Springer, Dordrecht.
- Connolly, M. R., Lee Y-G., & Savoy, J. N. (2018). The Effects of Doctoral Teaching Development on Early-Career STEM Scholars' College Teaching Self-efficacy. *Life Sciences Education*, 17(4), 1-15.
- Prevost, L. B., Vergara, Claudia E., Urban-Lurain, M., & Campa, Henry III, (2017). Evaluation of a high-engagement teaching program for STEM graduate students: Outcomes of the Future Academic Scholars in Teaching (FAST) Fellowship Program. *Innovative Higher Education*, 43, 41-55.
- Triezenberg, H. A., Doberneck, Diane, Campa, Henry III. (2020). Mid- and High-Engagement Programs to Develop Future Fisheries Management Professionals' Skills. *Fisheries*. <https://onlinelibrary.wiley.com/share/author/UTR9UR32MKDTMU33QQF7?target=10.1002/fsh.10480>.
- Vergara, C. E., Urban-Lurain, M., Campa, H., Cheruvellil, K. S., Ebert-May, D., Fata-Hartley, C., & Johnston, K. (2013). FAST-Future Academic Scholars in Teaching: A high-engagement development program for future STEM faculty. *Innovative Higher Education*, 39 (2), 93-107.