

TO: Brian Reed, Associate Provost for Teaching and Learning

FROM: Prof. Jason Stockwell Prof. Lesley-Ann Dupigny-Giroux

DATE: January 12, 2017

RE: Final Report on Engaged Practices Innovation (EPI) Award: *Mentoring Matters: Faculty Development to Enhance and Improve Undergraduate STEM Research Mentoring at UVM*

### **Project Goals**

- Provide development opportunity for faculty to increase their capacity for mentoring undergraduate STEM researchers, based on the National Research Mentoring Network curriculum.

### **Description of Outcomes and Assessment of Impacts**

- The group of 10 participants met with the 2 facilitators at CTL for a total of 10 hours over 5 meetings during the fall of 2015. The format of the workshops was discussion based, with facilitators prompting participants to share experiences and explore ideas around the following themes: group dynamics, effective undergraduate research projects, expectations, promoting professional development, effective communication, equity and inclusion, assessing understanding, fostering independence, and mentoring philosophies.
- Participants included a professor, five assistant professors, two post-docs, a senior academic services professional, and a cyber/education specialist. All participants held PhDs. Gender balance was equal (5 females and 5 males).
- Participants varied in their undergraduate mentoring experience: 2 had no experience, 6 had less than 5 years of experience, and 2 had more than 10 years of experience. Eight of the ten

participants had not previously participated in research mentor training. Of the two with previous mentor training, one attended an undergraduate research mentorship workshop at Lehigh University, and the other attend a 1-hour workshop on diversity and mentorship training through VT EPSCoR.

- At the time of the workshop, participants were actively mentoring trainees, in a research context, at the following career levels: junior faculty (1), post-docs (2), graduate students (5), undergraduate students (5), high school students (1).
- Participants completed a post-workshop Mentoring Competency Assessment (MCA), where they rated how skilled they felt before and after attending the research mentor training. Results from the MCA indicate participants felt their mentoring skills increased across all skill areas evaluated (Table 1).

**Table 1.** Average responses of how skilled participants felt before and after attending the undergraduate mentoring workshops in six skill areas. Scale for responses ranged from 1 (not at all skilled) to 7 (extremely skilled) with 4 as a mid-point (moderately skilled).

Mentoring Skill	Before Workshop	After Workshop	N
Maintaining Effective Communication	3.9	5.4	10
Aligning Expectations	3.7	5.9	10
Assessing Understanding	3.9	5.9	10
Addressing Equity and Inclusion	3.5	5.6	10
Fostering Independence	4.6	6.0	10
Promoting Professional Development	3.7	5.4	10

- All participants reported that they had made, or plan to make, changes to their mentoring as a result of participating in this workshop. Six participants provided descriptive details about such changes they had or will make to their mentoring practices:
  - *Be clearer about expectations, be more in tune with what the student wants out of the mentoring experience.*
  - *I see better now the importance of creating a common ground at the beginning when a student starts working in the group. Creating a relationship of trust as well as setting some general expectations, help both the student and me to have a clear idea on how to collaborate and work together towards an agreed goal. Even if with time goals can change, it is important to start with a good sense of direction and some principle of conduct.*
  - *I will attempt to be better at communicating with my mentees as far as expectations and day to day stuff go. I will also be more cognizant of cultural and personality differences between my mentee and I.*
  - *I have a heightened awareness of the role of all the skills listed above. I will particularly work on setting up regular meeting times and incorporating ways of assessing understanding in the mentee's training. These assessments will help evaluate how far they have gone towards independence, the ultimate goal.*
  - *Establishing and reflecting on a mentorship philosophy; which wasn't something I had articulated to myself or others before.*

- *1. Clearer and more regular communication. 2. Clearly defined expectations. 3. Specific praise. 4. Plans for fostering independence, such as leading writing projects, presentations, etc.*
- Participants rated the effectiveness of the facilitators as effective (3) or very effective (7), and all were likely (4) or very likely (6) to recommend the undergraduate mentor training workshops to a colleague.
- All 10 participants indicated attending the undergraduate mentor training as a valuable use of their time.

### **Current Status of the Project and Future Plans**

- Feedback from the workshop participants suggests this training was a valuable experience for all, providing new and different ways for faculty to think about how they work with undergraduate researchers. In particular, the discussion-based format of the workshop seemed to resonate with the participants – active participation with sharing of experiences and ideas made for a richer experience compared to a format based on information transfer.
- Other duties and obligations precluded offering the workshop in Fall 2016. Stockwell had an extensive travel schedule and Dupigny-Giroux is now Chair of Geography in addition to her many other responsibilities.
- Future opportunities to build on this EPI-sponsored workshop include: workshops for faculty and graduate students involved in the Lake Champlain NSF REU (if renewed) and the VT EPSCoR Basin Resilience to Extreme Events (BREE); faculty workshop in Fall 2017; and a graduate student course in 2017-2018 (the curriculum would easily accommodate a weekly 1-credit seminar-style course).