Center for STEM Learning
UNIVERSITY OF COLORADO **BOULDER**

TRESTLE SCHOLARS FACILITATOR REFLECTION SHEET

This reflection sheet is intended to capture your experience, feedback and advice as a facilitator of a Scholars group through the Transforming Education, Stimulating Teaching and Learning Excellence (TRESTLE) project. This report will be posted publicly as part of the group output, but you will have an option to make private comments. Please use complete sentences.

Semester and title of your TRESTLE Scholars group: Fall '17 Exploring Course-based Undergraduate Research Experiences (CUREs)

Your name: Lisa Corwin and Pam Harvey

Please describe how the group went and its activities *~ ½ page narrative. Please include: (1) the weekly list of topics, (2) how the meetings were structured, (3) any comments on the group process and how the group format was arrived at, and (4) list any products or outcomes from the group.*

At the start of the FLC, we asked participants to choose the topics we would discuss and to prioritize topics for our discussion. We generated the list below that we agreed to address in the following order:

- CURE definition and the elements of a CURE
- CURE models
    - CURElets
        - How can short CURE projects be incorporated into courses?
    - Workload balance
        - How are TAs allocated?
        - Are there alternative models of gaining staffing support for the research?
- Challenges of CURE development and implementation
- Existing CUREs at CU
- Assessment of CUREs
    - Assessment of students' skills
        - How can assessments be administered that quantifies that success of the course?
        - How can assessments be developed that provide students with useful feedback on their progress in the course?
    - Assessment of the course
        - Which assessments are most useful for achieving buy-in from the department and university?
        - Are assessments available for CUREs that quantify outcomes to communicate to individuals at other universities through publication?
- Support for CUREs
    - Staffing
    - Funding
- Sustainability of CUREs
    - How does the department support CUREs?
    - How does continuity achieved for the research?
- Achieving buy-in
    - From students
    - From department
    - From university

However, our discussions early in the semester prompted the re-arrangement of some of the topics and emphasis of others. The final topic list covered is below. The group prioritized topics that required more exploration.

Meeting Schedule:

Planned activities are on the left, emergent discussions are on the right.

9/11: Introductions, Statements of experiences with CUREs, Exploring the definition of a CURE	
9/18: Basics of CURE development – What are the important design elements of a CURE?	CURE assessment and challenges, idea of having a CURE round robin to help us get to know what kinds of work people are doing at CU
10/2: CURE Round robin to discuss what all of the group members are doing with regard to development and implementation of CUREs	Need for support by departments and other CURE challenges
10/9: CURE Assessment – Examples of the different kinds and purposes of assessment	Individual needs of FLC participants, agreement that we would focus on both CURE models and buy-in during remaining sessions
10/23: Discussion of different CURE models and scaling-up	Identification of a need for university buy-in, given future aims of the administration, consideration of developing a white paper for the academic futures initiative as our product
11/6: Buy-in for CUREs (students) and discussion of white paper	Challenges encountered with students that are common across departments
11/13: *Optional meeting* Buy-in for CUREs (administrators and departments) and discussion of white paper drafting	Assignment of roles for white paper to be completed over the break including the text, images, and editing
12/4: Discussion of white paper feedback and next steps for the group.	Balance of topics covered in the white paper and priorities of subjects discussed
Future plans: Completion of the white paper. Two more meetings to check-in next semester facilitated by Pam and Lisa.	Potential of starting a website for students to find and access CUREs on campus

Structure and process – Meeting structure varied but generally involved the facilitators presenting on a topic for the first ~30 minutes of the meeting followed by group activities or a lively discussion by participants. This format seemed to work for this group who were both looking to learn new information on CUREs from the facilitators and also to connect, discuss what they were trying, and receive feedback.

Several sessions deviated from this format by being either majority large group discussion, such as the second meeting in which there was much discussion on what is important to include in the design of CUREs, or mostly individual interactions. For example, we facilitated a CURE round robin that allowed participants to briefly describe their goals and current progress with regard to CUREs. We also organized a mini-poster session during which participants provided feedback to each other about the current states of their CUREs. This allowed more personal contact among the participants and exposed them to resources available in other departments.

The structure of each session was organized around the emerging needs of the group. The day after each session, we (the facilitators) met to discuss the plan for the next group meeting and strategies for supporting the group. Resources for participants were uploaded to the FLC Google Drive folder, and an email was sent to participants describing the plan for the next session. Frequent meetings allowed us to be flexible to accommodate the progress of the group.

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An interesting aspect of this FLC was broad range of experiences with CUREs among the participants. Some individuals aimed to understand what a CURE was and how to develop a new CURE, while others had implemented several CUREs or were managing larger CURE programs. This was a strength of the group in that those with experience could answer questions for and comment reflectively on their own process, which often helped those developing new CUREs. For example, one participant who was new to CUREs attributed their development of a new CURE during her involvement in the FLC in large part to this group. Additionally, the large number of departments represented highlighted variability in available resources and opportunities for developing these opportunities in home departments. For example, the number of teaching assistants per course varied across departments. Discussions about this helped participants identify new strategies for increasing the number of assistants through use of the Learning Assistant program or creating a teaching assistant course so returning students can continue their participation in CUREs.

The diversity of experience also presented a challenge for us as facilitators in terms of serving the needs of all participants. We aimed to facilitate a group in which all would benefit, however, choosing the correct level of material covered was difficult.   In order to balance the content of the FLC, we facilitated small group discussions that promoted discussion among those with similar experience and in other sessions, with different experience. This worked well for those beginning CUREs to receive feedback and for those who are experienced to identify resources that might be available in their home departments. What seemed most valuable to those looking to scale or start large CURE programs or new initiatives were the discussions of the different models of CURE instruction, resources needed and available in different departments, and strategies for garnering support and buy-in for these initiatives. Therefore, we focused on these topics and enhanced discussions by bringing resources for the participants.

Products – The idea of completing a White Paper was introduced by one of the participants during the fourth meeting. Everyone agreed that this was a great way to advocate for CUREs on campus, gain support, and potentially set the stage for more specific requests in the future. Katie Suding, who generated this idea, took a large role in developing the direction of the paper and in drafting the text. The facilitators supported this effort by helping to write, organize, and garner contributions from the group. The supplemental material for the paper also included an archive of many of CUREs currently taught by participants in the group. Overall, creating a product that the group felt could be used to affect change on campus in the future was highly productive. All group members approved with the resulting paper and were included as contributing authors on the submission.

How did you create a sense of community, especially in the first few weeks of meetings? *(This information will be useful for future facilitators)*

We aimed to create a sense of community by ensuring that all voices were represented in each meeting and by creating space for community members to direct the goals and topics of the group. Specifically, we used table tents with our names to help the members get to know each other, and we would put these on end when we wanted to talk to prevent a few voices from dominating conversations. We discussed group norms at the beginning of the semester that helped the group respect each other and listen to each other's views. Work in small groups helped those who needed more in-depth feedback to receive it while ensuring that all those who needed feedback got it. Finally, we strove to address any instances where we felt like group members' goals were not being met. For example, when one group member expressed that they felt like the group needed a more applied focus, we discussed whether this was a common perception at our next meeting and adjusted to accommodate this member's request. They later commented that their needs had been met. Being aware of group members needs and ensuring flexibility in the plan were key in creating a cohesive group dynamic.

What "lessons learned" came out of this semester's Scholars Group? What recommendations would you make to another facilitator?

It was challenging to meet the needs of participants from disparate experience levels and tackle all interests in one FLC. Targeting an FLC toward a group that is mostly at the same entry point in terms of the things they would like to learn might make the group feel more cohesive. Alternatively, explicitly establishing roles for individuals of different experience levels early in the FLC would be helpful. The group size, 15 people in this FLC, seemed to amplify the diversity.

A smaller group would be ideal, but with a similarly large group, more group work could mitigate its effects. For a facilitator, it would be helpful to consider information about leading a faculty group before beginning.

What impacts did you observe on TRESTLE Scholars? *How did conversations shift, what sorts of ideas seemed most transformative for participants, what comments were made about changes in the classroom?*

All scholars made gains in considering and understanding what is needed (supports, time, logistics) to implement a CURE and what the challenges of doing so are. It seemed that the individuals with less experience in the group also came away with more specific plans to implement their own CURE to varying degrees and felt supported by the group in developing these. As mentioned above, one participant reported gaining the skills necessary to proposed and gain approval for a CURE. All scholars seemed to have a mutual respect for one another by the end of the FLC and seemed to grow their interest and investment in the success of others in the group. Another outcome of the group was cross-departmental collaboration that would otherwise not have been possible. Two members of the group (from MCDB and ENVS) are working on a website that will make students and faculty at CU aware of the currently available CUREs on campus.

What recommendations do you have for TRESTLE? (Consider ways that TRESTLE could have better supported you and/or participants).

We felt well-supported during the TRESTLE group. Stephanie was available to answer questions and discuss any challenges we encountered. She was especially helpful in providing strategies for how create group cohesion and respect in the early stages of the FLC. Her presence in the sessions at the beginning of the semester was very reassuring, and the space we were given for planning was helpful in developing our independence. As new facilitators, we would love to participate in an FLC on facilitation of faculty groups. It would be valuable to talk with others who facilitate faculty groups regularly and discuss how they do this and what their specific strategies are.