Documenting Your Training Efforts for Grant Proposals: Using CU-CIRTL for Broader Impacts and Student Professional Development

Research and training grant proposals often require the PI to document how graduate students, postdoctoral scholars, or other students and educators will participate in training opportunities through your project, how outcomes will be disseminated to other universities or to a wider public, and ways to diversify the audiences impacted by your efforts (broader impacts). The funding agency may also require a one-page formal document describing the plans for professional development of postdoctoral scholars or trainees funded by the research (postdoctoral mentoring plan or individual development plan).

An example of how University of Wisconsin's CIRTL program helps address the NSF Broader impacts criterion is described in this article (Mathieu, Pfund, and Gillian-Daniel, 2009):
www.researchgate.net/publication/238401304_Leveraging_the_NSF_Broader-Impacts_Criterion_for_Change_in_STEM_Education

The Cornell University Center for the Integration of Research, Teaching, and Learning (CU-CIRTL) can help you address these requirements, either by providing a few sentences of text for your proposal, or by writing a letter of support/letter of commitment describing CU-CIRTL’s role as a partner on professional development and outreach opportunities for STEM graduate students and postdoctoral scholars.

For purposes of writing your proposal, here are some ideas on ways that CU-CIRTL might partner with you:

• Presenting a half-day workshop on teaching or academic career preparation, tailored to your audience’s needs, or a mini-series of one-hour workshops.
• Advising graduate student-led Teaching as Research projects related to the goals of your proposal; these are projects in which student use evidence-based practices to refine learning opportunities associated with courses or other events.
• Providing opportunities for you or your students to present an online CIRTLcast seminar to a national audience of current and future faculty.
• Helping you create a training manual on a specialized teaching and learning topic for the CIRTL Network website.

We’d also be happy to talk with you about playing other roles in your grant activities. Below is some language about the CIRTL initiative at Cornell, as well as the national CIRTL Network. Following that are links to resources with more information.

We encourage you to contact us at cu-cirtl@cornell.edu or 607-255-2030 with any inquiries about possibilities for supporting your proposal.
**About the CIRTL Network**
The Center for Integration of Research, Teaching, and Learning (CIRTL) is a network of 21 universities collaboratively offering resources, webinars, online courses, and in-person training opportunities for the professional development of graduate students and postdocs. The CIRTL mission is to enhance excellence in undergraduate education through the development of a national faculty committed to implementing and advancing effective teaching practices for diverse learners as part of successful and varied professional careers. Cornell has been an active member of CIRTL since 2011. The CIRTL Network is funded by the National Science Foundation, the Sloan Foundation, and the Great Lakes Higher Education Guaranty Corporation.

**Sample proposal text describing the National CIRTL initiative:**
For the last decade, the Center for the Integration of Research, Teaching and Learning (CIRTL) has focused attention on the leverage point of preparing the future national STEM faculty to be *both* excellent teachers and excellent researchers. Nearly 80% of STEM PhDs are granted at only 100 research universities, allowing for a highly targeted intervention before graduates transition into faculty positions at the 4400 U.S. research universities, comprehensive universities, liberal arts colleges, and community and tribal colleges. Building on three core ideas – teaching as research, learning communities, and learning through diversity – CIRTL has developed, implemented and evaluated programs that demonstrably prepare future faculty to implement evidence-based, high-impact teaching practices as they move into higher education careers. These future faculty are the foundation for long-term, sustained national transformation of *all* institutions of higher education toward substantial increase in use of evidence-based teaching and learning practices. The CIRTL Network of 21 major research universities, including Cornell University, represents 22% of the national STEM PhD production.

Three core ideas, often referred to as the CIRTL Pillars, are at the foundation of all that CIRTL does: Teaching-as-Research, Learning Community, and Learning-through-Diversity, as defined below:

**Teaching-as-Research** is the deliberate, systematic, and reflective use of research methods by natural and social science, technology, engineering, and mathematics (STEM) instructors to develop and implement teaching practices that advance the learning experiences and outcomes of both students and teachers.

**Learning Communities** bring together groups of people for shared learning, discovery, and generation of knowledge. To achieve common learning goals, a learning community nurtures functional relationships among its members.

**Learning-through-Diversity** capitalizes on the rich array of experiences, backgrounds, and skills among STEM undergraduates and graduate student through faculty participants to enhance the learning of all. It recognizes that excellence and diversity are necessarily intertwined.

[www.gradschool.cornell.edu/cu-cirtl](http://www.gradschool.cornell.edu/cu-cirtl)
Cornell University CIRTL and other Graduate/Postdoc Resources:

- Housed in the Graduate School, CU-CIRTL (http://gradschool.cornell.edu/cu-cirtl) prepares graduate students and postdoctoral scholars to excel as teachers, researchers, and mentors, working through a rich network of faculty, staff, and students brought together by shared ideas about the importance of evidence-based and inclusive teaching and mentoring practices. Through our participation in the national CIRTL Network, our university contributes and provides access to online seminars, courses, and training guides for interest students, faculty, and staff. In addition, a particular focus of the CU-CIRTL program is on research mentor training, enabling graduate students and postdocs to effectively mentor undergraduate researchers from diverse backgrounds and eventually supervise their own graduate students, postdocs, and research technicians.
- Our partners at the Center for Teaching Excellence (www.cte.cornell.edu) also serve as a resource for the Cornell community by offering a wide array of research-based programs and services that support innovative teaching and reflective practice. CTE staff members encourage and support instructional practices that focus on student learning and develop critical thinking skills for graduate students, postdoctoral scholars, and faculty.
- The Graduate School Office of Inclusion and Student Engagement (OISE) and Office of Postdoctoral Studies provide programming in leadership development, academic success, and navigating mentoring and advising relationships. Our Director of Recruitment for the Graduate School is also housed within OISE and focuses on recruiting a diverse population of graduate students to Cornell.

Useful Links
Cornell University CIRTL Mission: http://gradschool.cornell.edu/cu-cirtl/mission
Benefits of Cornell participation in CIRTL: http://gradschool.cornell.edu/cu-cirtl/community

Example Programs offered for Graduate Students and Postdocs: http://gradschool.cornell.edu/cu-cirtl/programs

National CIRTL Mission: http://www.cirtl.net/About
Participating Institutions and Leadership: http://www.cirtl.net/leaders/network


Postdoctoral Mentoring Plans from the National Postdoctoral Association: http://www.nationalpostdoc.org/?MentoringPlans

www.gradschool.cornell.edu/cu-cirtl