

and learning process. Within a learning community, individuals take responsibility for the shared learning, discovery, and the generation of knowledge that results in achieving learning goals. Four core ideas are central to the learning community:

- shared discovery and learning
- functional connections among learners
- connections to other knowledge and life experiences
- an inclusive learning environment

Learning-through-Diversity

Diversity in the classroom includes, but is not limited to: preferred learning styles, race, ethnicity and culture, gender, sexual orientation, disabilities, religion, age, and socioeconomic backgrounds.

It is important to recognize and utilize the diverse experiences and backgrounds of students to enrich the learning process. This requires an intentional and deliberate effort to promote equal success for all learners. The CIRTl Network has developed four specific aims to promote Learning-through-Diversity:

- know the diverse backgrounds of your students and the implied implications for learning
- identify curricular, teaching, and assessment practices that promote learning for all
- draw upon the diversity of your students to enhance and enrich the learning of all
- recognize existing inequities, and promote an equitable, inclusive and respectful climate for learning.

More resources on the CIRTl Pillars are available at www.cirtl.net. The GTP office also has materials on the CIRTl pillars.

Graduate Student Commentary

“It’s very time consuming to do research on teaching! [The workshops had] great insights on teaching, specifically what kids are about and what really motivates them.”

“The portion of the workshop that discussed not being blinded by unexpected research was great.”

“This workshop got me thinking about what is ahead. It had some good tips.”

Graduate School

The Graduate Teacher Program’s

Collaboration with

The CIRTl Network



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The National CIRTL Network

The national Center for the Integration of Research, Teaching, and Learning (CIRTL) Network, based at the University of Wisconsin at Madison, was created with a \$5 million grant in collaboration with Michigan State University and the University of Pennsylvania to prepare graduate students for careers as science, technology, engineering, and mathematics (STEM) faculty. The University of Colorado at Boulder, Howard University, Texas A&M University, and Vanderbilt University joined the Network in 2006. See the website at <http://www.cirtl.net/> for further information.

In 2008, Laura Border, Director of the Graduate Teacher Program and Patricia Rankin, Professor of Physics and Associate Vice Chancellor for Diversity became Co-PIs on a new three-year (2008-10) CIRTL project funded by the National Science Foundation. CU Boulder's portion of the new \$5 million grant is approximately \$400,000. The CU Boulder team, operating under the acronym TIGER, hopes to develop more teaching methodology courses in STEM departments, disseminate Teaching-as-Research, Learning Communities, and Teaching for Diversity; provide programming for STEM graduate students; and collaborate with the CIRTL Network on a yearly exchange of graduate students between the campuses. The project will offer small grants to STEM departments that work to develop a discipline-specific course on college teaching.

Collaborators include Michael Klymkowsky, MCDB, and Noah Finkelstein, Physics. Professor Klymkowsky will develop a course on science teaching and offer it on-line across the network. Students from CU-Boulder may register for the on-line CIRTL Network courses. Professor Finkelstein will work with other campuses in the Network to develop teaching and learning activities to prepare future STEM high school teachers.

The Graduate Teacher Program hosts the CIRTL/TIGER project and provides teacher preparation and professional development opportunities for graduate

students in all schools and colleges on the Boulder campus. We focus on graduate students' current teaching, research, service responsibilities, and on their future career goals as faculty or professionals in other sectors. Whether planning a career in academia, or in business, government, industry, or the arts, participants enjoy and benefit from our activities, events, and certification opportunities. Visit the GTP website (<http://www.colorado.edu/gtp>) for more information on professional development and to see schedules of events.

TIGER

The Teaching Institute for Graduate Education Research (TIGER) at the University of Colorado at Boulder was formed in 2006 by the Graduate Teacher Program (GTP) to address the importance of building a solid research base on teaching and learning at the baccalaureate and postgraduate levels. TIGER's current goal is preparing the next generation of STEM faculty through our collaboration with the National CIRTL Network. We work together to promote the development of a well-prepared national faculty in the STEM disciplines.

The Graduate Teacher Program offers TIGER workshops to address teaching, learning and professional development in the STEM disciplines specifically. TIGER workshops emphasize the CIRTL pillars—Teaching-as-Research, Learning Communities, and Learning-through-Diversity—while also featuring outstanding STEM faculty on the CU Boulder campus. Graduate students, undergraduate students, postdoctoral fellows, and faculty are encouraged to attend.

Participation in TIGER workshops counts toward the Graduate Teacher Certificate, the Professional Development Certificate for Preparing Future Faculty, and the Professional Development Certificate for Business, Government, Industry, and the Arts. For more information on GTP certificates go to: <http://www.colorado.edu/gtp/training/certification.htm>.

The CIRTL Pillars

The CIRTL Network is committed to implementing and advancing effective teaching practices for diverse student audiences as part of their professional careers. The pillars of the National CIRTL Network—Teaching as Research, Learning Communities, and Learning-through-Diversity—underlie all Network activities. The pillars are described in more detail below.

Teaching-as-Research

Assessing the effectiveness of teaching methods in the undergraduate classroom can be difficult. Teaching-as-Research (TAR) helps instructors design and implement deliberate, systematic, and reflective tools to help assess the effectiveness of their teaching efforts and their students' learning in their classrooms.

Instructors utilize critical thinking and research skills to evaluate student needs. This enhances the learning experience of both the students and instructors. Seven steps make up the Teaching-as-Research process:

- learning foundational knowledge
- creating objectives for student learning
- developing a hypothesis for teaching practices that achieve the learning objectives
- developing and implementing teaching practices within an experimental design
- defining measures of success
- collecting and analyzing data
- reflecting, evaluating, and reworking for the next version of the design

Learning Communities

Faculty and graduate students can foster the development of learning communities in their courses and in their departments. Learning communities provide a forum for the discussion and dissemination of information on a shared topic of interest. Learning communities may focus on specific course materials, or be open to a more general discussion that helps to guide the teaching