

CIRTL Network Overview

CIRTL's mission and core ideas are the cornerstone of everything we do

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.



CHANGE MODEL

Nearly 4,000 institutions in the United States offer STEM undergraduate education. Most of their faculty come from graduate programs at ~100 research universities. Thus training graduate students at these universities is a powerful leverage point for change throughout STEM undergraduate education.

STRATEGY

CIRTL has created the CIRTL Network of diverse research universities committed to advancing the professional development of future STEM faculty. Each member of the CIRTL Network develops, implements, and evaluates local programs and learning communities for graduate-through-faculty development in STEM higher education. In addition, the universities contribute to a cross-Network learning community and associated programs that allow all future faculty to draw on the diversity of the Network.



CORE IDEAS

Three core ideas underlie all CIRTL Network activities: Teaching-as-Research, Learning Communities, and Learning-Through-Diversity. CIRTL programs prepare STEM faculty to apply systematic and reflective use of research methods to enhance learning outcomes. This preparation is done within a community of shared learning and discovery, and explicitly recognizes that effective teaching capitalizes on the rich array of experiences, backgrounds, and skills among the students and teachers.

NETWORK DEVELOPMENT

The CIRTL Network comprises 46 institutions across the U.S. and Canada. By design, these institutions represent a broad diversity — private/public; large/moderate size; majority-/minority-serving; and geographic location.



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CIRTL Network Learning Outcomes

Three tiers of expertise inform our programming

CIRTL Learning Outcomes

Often we are asked, “If I met a STEM faculty member, how would I know if they had taken part in CIRTL at some point in their development.” In the broadest sense, the CIRTL participant would see teaching as a dynamic and ongoing process aimed at understanding and improving student learning. Indeed, there would be little difference in the way the CIRTL participant talks about teaching and learning compared to the way he or she talks about disciplinary research.

The CIRTL Learning Outcomes outline a more formal and rigorous response to this query and delineate levels of experience and engagement with CIRTL, the CIRTL core ideas and with teaching and learning.

Learning Outcome Levels

We envision three types of CIRTL program outcomes: CIRTL Associate, CIRTL Practitioner, and CIRTL Scholar. These three CIRTL outcomes recognize first the role of the CIRTL core ideas in effective teaching and learning, then scholarly teaching that builds on the CIRTL core ideas to demonstrably improve learning and make the results public, and finally scholarship that advances teaching and learning under peer review. CIRTL program outcomes conceived in this way permit anyone to enter the CIRTL Network learning community from a wide variety of disciplines, needs, and past experiences, and to achieve success as a teacher at a wide variety of engagement.

Graduates-through-faculty who are CIRTL Associates have the knowledge and skills to be effective teachers, where they are able to implement research-based “best” practices in different learning environments to achieve defined learning goals. CIRTL Associates recognize the diversity of their students and seek to meet the needs of diverse learners. CIRTL Associates are developing familiarity with a new area of knowledge that is outside of their STEM disciplines. Specific outcomes might include:

- Participants can identify realistic, well-defined and achievable learning goals.
- Participants can design effective and inclusive instructional materials, courses, learning environments, and curricula that align learning activities with learning goals and assessments.
- Participants have been exposed to the literature associated with teaching, learning and assessment.
- Participants can describe the Teaching-as-Research process and how it can be used to enhance student learning.
- Participants can describe the impact of learning communities on student learning.
- Participants participate in professionally-focused groups associated with teaching and learning.
- Participants recognize the diversity in their classrooms and the need to address that diversity in teaching plans.

CIRTL Associate

CIRTL Practitioner

A CIRTL Practitioner has a level of knowledge and skills that allows them to be scholarly teachers, who use Teaching-as-Research to improve their practice. Scholarly teaching builds on what others have learned in an ongoing way, seeks evidence of learning, and uses evidence to improve practice. Scholarly teaching is an intellectual activity designed to bring about documented improvements in student learning and share them publicly (e.g., within a learning community). As such, scholarly teaching reflects a type of action research often focused on improved teaching practice. Specific outcomes might include:

- Participants at this level are reading the literature associated with teaching, learning, and assessment and are able to critique it effectively with peers.
- Participants at this level have started designing and implementing Teaching-as-Research projects for the classroom. From these projects they can recognize if student learning has occurred, but may not know why.
- Participants can demonstrate how their disciplinary research can inform their teaching.
- Participants are developing integrated learning communities with their students.
- Participants participate and contribute in local professional learning communities associated with teaching and learning (i.e., they are contributing to the goals of the group, based on their experiences). Through their participation, they also provide leadership within their disciplines.
- Participants are intentionally determining the diverse backgrounds among their students and designing teaching plans in response to those findings.
- Participants are engaging the diversity of their students in ways that enhance the learning of all.

Graduates-through-faculty who achieve CIRTL Scholar expertise have the knowledge and skills to add to our knowledge-base of teaching and learning through the sharing of the results of Teaching-as-Research projects with peers. CIRTL Scholars go beyond scholarly teaching and are driven by a desire to understand how students learn effectively and how teaching influences this process. Becoming a CIRTL Scholar requires in-depth understanding of the literature, critical reflection, and sharing findings with a local, regional, or national group of peers.

CIRTL Scholar

To achieve this level, graduates-through-faculty have been exposed to the core ideas of CIRTL, recognize the importance of implementing practices associated with each core idea for being an effective and improving teacher, and have designed, implemented (in the classroom), and have defended Teaching-as-Research project designs and results to peers (in education or discipline). These graduates-through-faculty have presented and/or published the results of Teaching-as-Research efforts to local, regional, national, or international audiences of their peers. This level represents a high level of engagement with CIRTL's core ideas through their application and defense of work. The CIRTL Scholar represents a high level of scholarly achievement, especially for graduates-through-faculty otherwise engaged in STEM careers, and so it is not expected that many seek this level of expertise.

CIRTL Network Programming

Courses, workshops, and more bring members together in person and online

COURSES

CIRTL's courses and short courses on teaching and learning give graduate students and post-docs an interactive, synchronous, online learning experience led by faculty from CIRTL Network universities across the nation. By bringing together students from across the Network, our courses leverage the Network's diversity to prepare future STEM faculty to be both superb researchers and excellent teachers.

CIRTL offers two MOOCs each focused on different aspects of evidence-based STEM instruction. These MOOCs, designed and led by faculty across the country, are offered year-round.

WORKSHOPS

CIRTL's online workshops are tailored to helping graduate students and post-docs develop specific materials that can advance their teaching and research expertise. These workshops, led by faculty and staff from CIRTL institutions, cover a range of topics, like writing and implementing an individual development plan, and writing and refining teaching philosophy statements.

ONLINE LEARNING COMMUNITIES

CIRTL's online learning communities give graduate students, post-docs, faculty, and staff a platform to make connections, share resources, and discuss new ideas. CIRTL Learning Communities focus on issues of teaching and learning in STEM disciplines.

EVENTS

Weekly CIRTL Casts give current and future faculty the opportunity to learn about and discuss a wide range of topics related to STEM teaching and learning. Led by CIRTL Network faculty and staff, these online, synchronous events enable participants to dig deeper into issues of interest.

CIRTL's journal club has monthly online, synchronous discussions about current research on teaching and learning in higher education.

TEACHING-AS-RESEARCH (TAR)

Each year, graduate students from across the CIRTL Network develop TAR projects. The TAR Capstone series brings together these students with post-docs, staff and faculty from across all institutions to present final their projects, discuss, share resources, and ask questions.

IN-PERSON OPPORTUNITIES

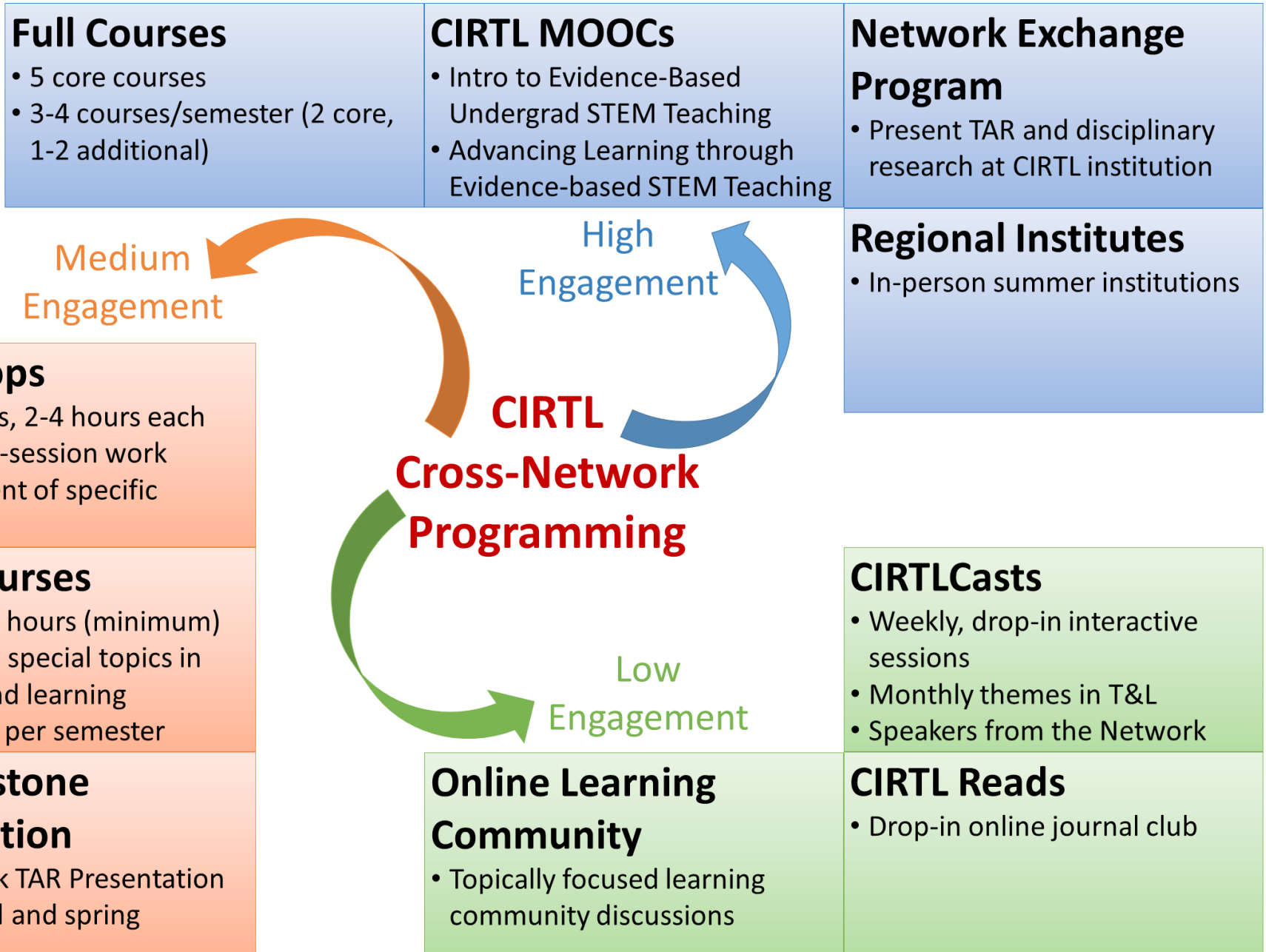
The CIRTL Network Exchange program is a two-to three-day visit to a CIRTL Network campus, designed to give participants the opportunity to network and practice professional skills before entering the job market. Please contact your local Network leaders to see if this opportunity is available on your campus.

In-person institutes give CIRTL students the opportunity to engage in in-depth teaching development in multi-day sessions hosted at CIRTL member institutions.



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CIRTL's programming is broken into three levels of engagement: low, medium, and high.



CIRTL Network Courses & Events

Online courses and events help future faculty improve their STEM teaching

ONLINE COURSES & REGISTRATION REQUIRED

Diversity in the College Classroom: Teaching the STEM Undergraduate

Examine how diversity impacts student learning and develop your own inclusive teaching practices (Fall)

Teaching with Technology

Learn how to use classroom technology to enhance STEM instruction (Fall)

The College Classroom

Build on your own TA experience with this seminar on evidence-based undergraduate teaching (Spring)

Research Mentor Training

Learn new tools and examine case studies for being an effective, insightful mentor for STEM students (Spring)

Teaching-as-Research

Develop a Teaching-as-Research proposal in this course, designed as an extension to CIRTL MOOC (Fall, Spring)

CIRTL MOOC I: An Introduction to Evidence-Based Undergraduate STEM Teaching

Get an introduction to evidence-based teaching practices in this Massive Open Online Course (Fall, Spring)

CIRTL MOOC II: Advancing Learning through Evidence-Based STEM Teaching

Pursue your own evidence-based teaching practices by developing a Teaching-as-Research proposal (Fall, Spring)

Basics of Online Learning and Teaching

Learn the basics of online pedagogy and develop your own online teaching materials (Summer)

ONLINE EVENT SERIES OPEN ON A DROP-IN BASIS

CIRTLcasts

A weekly series organized around monthly themes related to STEM teaching and learning (Fall, Spring)

Journal Club

A monthly series where participants discuss journal articles related to STEM teaching and learning (Fall, Spring)

Teaching-As-Research Capstone

A series of events designed to give current and former TAR students a platform to share their work (Fall, Spring)



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CIRTL NetworkMOOCs

Two Massive Open Online Courses (MOOCs) examine evidence-based teaching

MOOC I: An Introduction to Evidence-Based STEM Teaching

An Introduction to Evidence-Based Undergraduate STEM Teaching is a free online course exploring effective teaching strategies for college or university STEM classrooms. Designed for graduate students and post-doctoral fellows planning college and university faculty careers in the STEM disciplines, this course will provide you with an introduction to evidence-based teaching practice.

MOOC II: Advancing Learning through Evidence-Based STEM Teaching

Advancing Learning through Evidence-Based STEM Teaching is an open online course that explores the concepts behind “Teaching-as-Research”—the deliberate, systematic, and reflective use of research methods to develop and implement teaching practices that advance the learning experiences and outcomes of both students and teachers. By the end of this course, students will have developed a Teaching-as-Research proposal ready for implementation.

While this is an advanced course, there is no need for students to have completed any prerequisite courses to participate.

MOOC-Centered Learning Communities

Many CIRTL member institutions choose to run MOOC-Centered Learning Communities (MCLCs) on their local campus to give MOOC students a way to elaborate on and further develop the lessons learned online.

To learn if your institution will be hosting an MCLC for an upcoming MOOC, contact our MOOC team at mooc@cirtl.net.

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MOOCs are organized
by faculty from



CIRTL NetworkExchange

Exchange trips enable future faculty to present research at CIRTL institutions

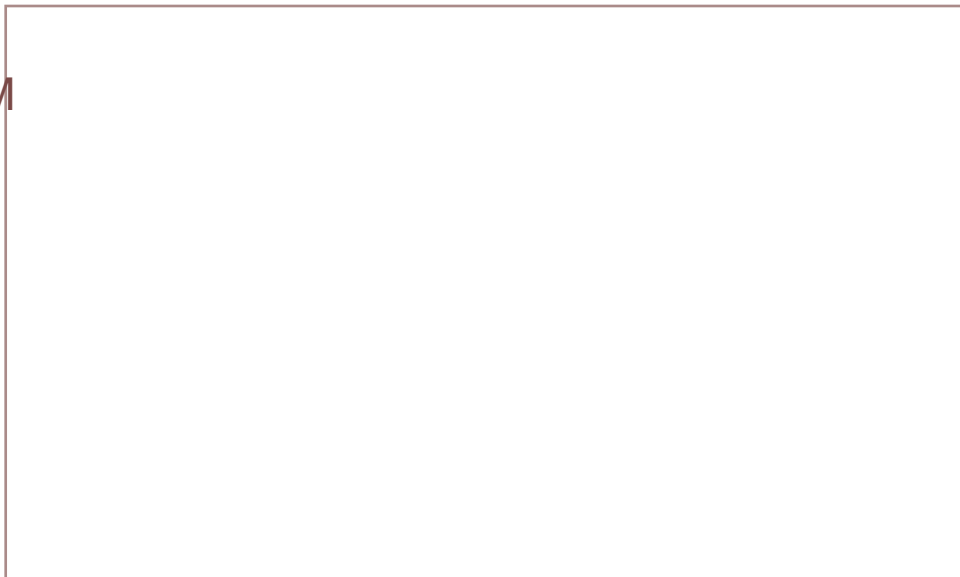
CIRTL'S NETWORK EXCHANGE PROGRAM

is a two- to three-day visit to a host campus within the CIRTL Network. The program is designed to allow advanced graduate students and post-docs to practice professional skills before entering the job market, while also networking with education and disciplinary colleagues at the host institution.

PARTICIPANTS present a disciplinary research talk and a Teaching-as-Research project, and interact with colleagues and potential collaborators at the host institution. Ask your local CIRTL program leaders about ways to get involved in research on teaching.

HOST INSTITUTIONS also benefit by welcoming an early-career scholar from another institution, enhancing their pool of qualified applicants for future academic positions.

APPLICATION INFORMATION available online at www.cirtl.net.



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