Council on Undergraduate Research

Learning Through Research

CUR Transformations: A Guide to the Project and Pre-Proposal Process

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CUR Webinar
February 10, 2017

Before We Start

- Please note that all telephone connections will be muted throughout the webinar

- Please write your questions into the questions box in GoToWebinar

- The webinar will be recorded, and the webinar, a copy of the slides, and a summary of the question-and-answer session will be made available to registrants and posted online

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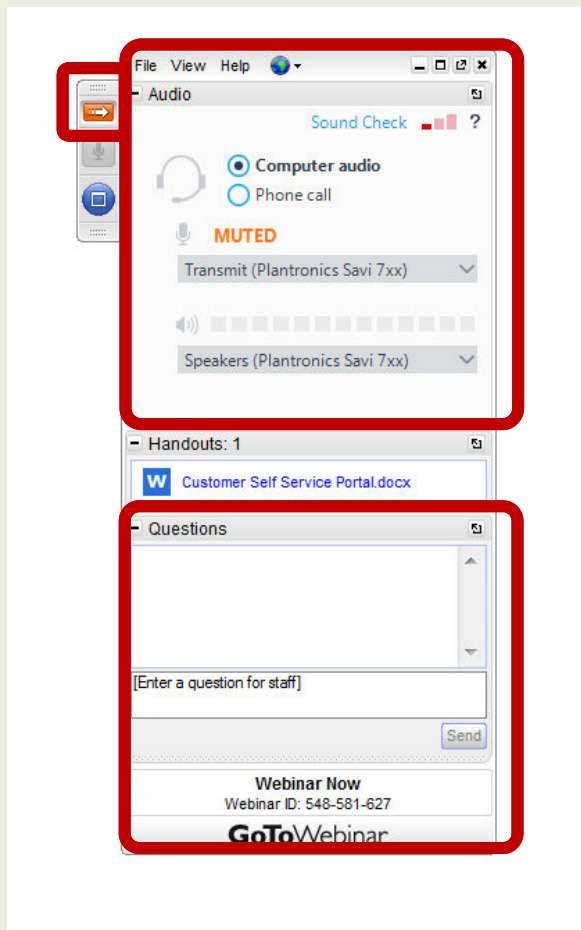
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Note: Today's presentation is being recorded and will be posted on the Project Website.

Our Agenda Today…

- Briefly introduce the Council on Undergraduate Research (CUR)

- Provide a summary of the history/context for the CUR Transformations project

- Provide an overview of the project's goals

- Summarize the project's research design

- Discuss the project's activities, expectations, and selection criteria

- Discuss the application process

- Answer any questions you might have about the pre-proposal stage and the overall application process

About the Council on Undergraduate Research (CUR)

The mission of the Council on Undergraduate Research is to support and promote high-quality undergraduate student-faculty collaborative research and scholarship.

Council on Undergraduate Research

- **A national organization** of individual (>11,700) representing all disciplines and over 900 institutions of all types.

- Eleven **discipline-based divisions**: Arts & Humanities, Biology, Chemistry, Education, Engineering, Geosciences, Health Sciences, Mathematics & Computer Science, Physics & Astronomy, Psychology, Social Sciences.

- Two **multidisciplinary, administrative-based divisions**: At-Large and Undergraduate Research Program Directors.

- http://www.cur.org

CUR Transformations Project Leadership

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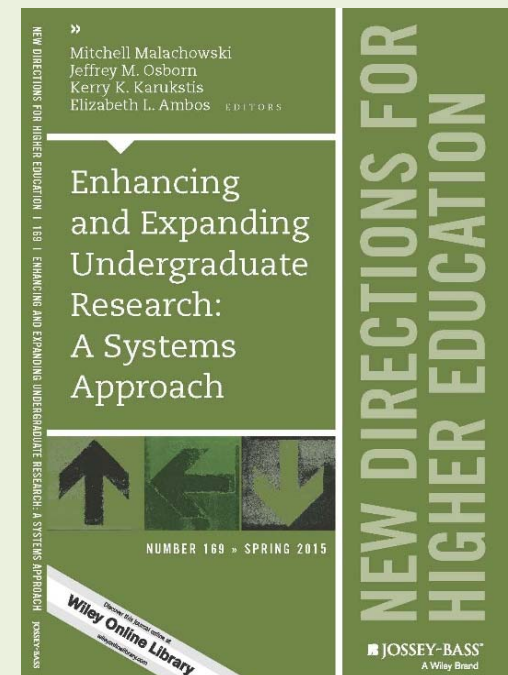
CUR Transformations

Project History and Goals

CUR's Institutionalizing UGR Workshop Program

- **1996 – present:**
  - ❖ Offered 1-2 national-level workshops annually, as well as workshops to groups of institutions and/or to individual campuses upon request.
  - ❖ Participating institutions funded all of their own expenses.
  - ❖ Several repeat attendees.
- **2007 – present:**
  - ❖ Offered several series of workshops in targeted programs funded by the National Science Foundation through DUE 06-18721 and DUE 09-20275.
  - ❖ Collaborated with 80 institutions from six systems/consortia on assisting them build undergraduate research cultures and programs system-wide.
  - ❖ Worked with Oklahoma, Tennessee, and Nevada INBRE/EPSCoR.
- **Served ~600 institutions to date.**

Enhancing and Expanding UGR from a Systems Perspective

- Using the lens of institutionalizing undergraduate research within systems and consortia, the project developed a better understanding of the processes and the most effective drivers of **organizational and cultural change.**

- Held a Summit meeting in March 2014.

- Results and recommendations published in 2015 in a volume of *New Directions for Higher Education (Jossey-Bass)*.

CUR Transformations – Project Goals

- Almost without exception, one key goal described in each campus plan has been to create a more research-rich, connected, and scaffolded curriculum.

- However, institutional teams invariably discover that curricular reform requires a long time arc and poses significant challenges, such as:
  - Gaining an understanding of the different disciplinary cultures.
  - Rethinking faculty workload and reward systems for both tenure-line and non-tenure-line faculty.
  - Developing sustainable faculty leadership structures, particularly against a backdrop of administrative and faculty turnover.
  - Establishing strong partnerships among faculty, students, and administrators.
  - Expanding student participation.
  - Scaffolding curricular elements linked to student learning outcomes.
  - Partnering with students to fundamentally change the learning process.

- Through participation in this CUR Transformations project, the selected institutions and departments will directly tackle these challenges within their own institutional and departmental contexts.

CUR Transformations – Project Goals

- By the end of the project period (2016-2021) we will have….

  ❖ Significantly added to fundamental knowledge of how faculty and students adapt to changes in curricula and culture to support a research-based instructional framework.

  ❖ Partnered with 12 different higher education institutions and 24 departments (2 at each institution) in 4 disciplines to transform curricula and academic culture.

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Research Mission

CUR Transformations Research Mission

- Build on CUR's work to institutionalize undergraduate research.

- Conduct fundamental research on student, faculty and departmental and disciplinary influences on the process of integrating & scaffolding undergraduate research experiences.

  - Explore engaged student learning & student culture change given more inquiry-driven practices, and culture change in departments.

Student Change

What effect does the scaffolded integration of the elements of UGR have on students' learning experiences and outcomes?

- To what extent are students receptive to a research-based STEM curriculum emphasizing discovery, inquiry, and analysis? Does receptivity vary with student characteristics? Do all students value this approach?

- How do student learning experiences and outcomes in the scaffolded UGR curriculum vary by student characteristics? Do all students benefit equally from this approach?

- What is the relationship between students' experiences in an inquiry-driven curriculum and the extent to which departments have integrated the components and outcomes of high-quality UGR?

Faculty Change

How do different STEM departments effectively integrate the components and outcomes of high-quality UGR to reach more students?

- What aspects of different STEM cultures and departments support the integration of UGR elements into the curriculum? What are the most effective strategies to catalyze a more rapid and enduring transformative change process?

- What are the best approaches to research-based curricular redesign and faculty support for creating an inclusive change process, particularly for departments that include both tenure/tenure track and non-tenure track faculty?

- How do faculty members teaching in a scaffolded research-based curriculum monitor the impact of the transformation on student learning?

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Project Overview, Expectations, and Selection Criteria

Why Should you Apply?

Institutions and departments with a strong commitment to undergraduate research who aspire to integrate research-based curricula into their student and faculty cultures should apply in order to:

- Transform student learning and outcomes.

- Develop a deep understanding of student learning in their own contexts.

- Become key change agents on their campus as well as national and international leaders in the development of research-infused curricular reform.

Criteria for Selection of Institutions

Institutional and Departmental Types

- All U.S. institutions of higher education that offer accredited degree programs at the baccalaureate level are eligible to apply.

- Institutions will include two of the following departments/disciplines in the project:

  ❖ Biology, Chemistry, Physics, and Psychology.

    - Department names and titles can vary.
    - The two departments/disciplines are chosen by the institution.

Criteria for Selection of Institutions

Readiness for Participation

Our target cohort of participant institutions & departments:

- Have already made a clear commitment to undergraduate research (i.e., have existing infrastructure and faculty/administrative buy-in).

- Have significant capacity for transformative change.

- We are interested in working with institutions that have begun the challenging task to transform curricula and culture, but have not completed that work.

Criteria for Selection of Institutions

Readiness for Participation (*cont.*)

- However, departments should not yet have a mature, backward-designed, research-rich curriculum in place but will be committed to comprehensive curricular change and poised to move towards this goal.

  - Through participation in the project, each selected department will create:

    - *A **backward-designed curriculum*** (it started with the desired outcomes, then designed the collection of courses, and then the individual courses) that ***vertically scaffolds research experiences into the courses across all four years*** that intentionally create connections, build on past learning, and achieve outcomes developmentally.

Criteria for Selection of Institutions

To be Competitive for Selection:

- A demonstrated need and readiness of the 2 departments & institution.

- A strong commitment to equity, inclusion, access, and support for students historically underrepresented in STEM disciplines.

- A clear statement of the current state and future goals of undergraduate research within the two departments and institution.

- Strong administrative support through the direct participation of deans and/or provosts (i.e., those with resource allocation responsibility).

- Identification of the departmental team leaders and team members, with a clear commitment to multiple layers of "nested leaders" involved in the planning and implementation stages.

- Strong, broad-level faculty support and direct participation of chairs, course coordinators, and curriculum committee members.

- A commitment to sustaining curricula and policy adaptations over the long-term, including after the project activities are completed.

- *Please see the "Request for Institutional Proposals" for a complete list.*

What are the Expectations for Selected Institutions and Departments?

Selected institutions and departments must be:

- Genuinely interested in the aims and research questions driving this project.

- Find relevance of the project focus to their work.

- Value learning from departmental assessment and research projects that inquire about student learning and faculty culture.

- Be willing to work collaboratively to transform undergraduate education.

What are the Expectations for Selected Institutions and Departments?

Selected institutions and departments are expected to commit and deeply engage in five core project elements:

- Sustained four-year commitment.

- Teamwork.

  - ❖ An institutional coordinating leadership team.

  - ❖ Two departmental leadership teams.   We are interested in faculty participants that are involved in educational research, including disciplinary based educational research (DBER).

- Consultant interaction.

- Scholarly engagement.

- Maintaining momentum.

What Resources will be Provided to each Institution and Department?

- Four expert consultants will be matched to each participating institution. Two consultants will work with each department over the entire 4-year period.

  - Consultants will make annual, on-site visits to the each department and work with their departments throughout each year for four consecutive years (2017-2018, 2018-2019, 2019-2020, 2020-2021).

- Travel support for four team members (two from each department) to attend yearly national collaboration meetings of all participating institutions and departments.

- $2,000 per year for each department to help catalyze curricular innovations.

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Application Process

Application Stages

The recruitment and application process includes four stages:

- An open, national Request for Institutional Proposals to participate.

- An open pre-proposal stage.

- An invited full-proposal stage.
    - (Not all institutions submitting pre-proposals will be invited to submit full-proposals.)

- An invited interview stage.
    - (Not all institutions submitting full-proposals will be invited for an interview.)

Application Timeline

- *Rolling* – Optional expression of interest to apply

- *February 10, 2017* – Informational Webinar

- ***March 1, 2017* – Pre-proposal due date**
  - ❖ Electronic submission only

- *March 15, 2017* – Institutions invited to submit full proposals

- ***May 1, 2017* – Full proposal due date**
  - ❖ Electronic submission only

- *May 15, 2017* – Institutions invited for video interviews

- *June 1, 2017* – Institutions selected

- *October 2017* – Kickoff meeting

Pre-Proposal Requirements

Pre-proposal applications include two elements:

- An ***online form*** with institutional and demographic information.

- A ***narrative statement***, uploaded with all elements combined into a single PDF file.
  - Must not exceed 3 pages in length (single spaced, 1" margins, no smaller than 11 point font size)
  - Should address six (6) prompts specified in the Request for Institutional Proposals.
  - Can be formatted and organized as you see fit.

- *Applications are due by 5:00 pm local time, Wed., Mar. 1, 2017; submitted electronically on the CUR website.*

Full-Proposal Requirements

Please plan ahead for the full-proposal application.

- Detailed requirements for the full-proposal will be sent to those institutions invited to submit full proposals. We anticipated making invitations on March 15, 2017.

- In order to engage your departmental and institutional colleagues in the needed planning conversations for submission of the full-proposal, an outline of key questions that invited institutions will be asked to address in their full-proposal is specified in the Request for Institutional Proposals.

- *The deadline for submission of full-proposals is May 1, 2017.*

Acknowledgments

- We acknowledge the leadership and insights of many teacher-scholars who have worked within CUR for the past two decades. The ideas that form the basis for this project are distilled from CUR's work with more than 600 institutions who have participated in our professional development institutes.

- Prior National Science Foundation (NSF) funding, particularly DUE CCLI III grant # 09-20275, has been instrumental in forming our theory and framework for undergraduate research culture and curricula transformation.

- We are grateful to the NSF for their support of this project through DUE IUSE grant # 16-25354.

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Questions?

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