

Characteristics of Excellence in Undergraduate Research (*COEUR*)



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Undergraduate Research (COEUR)



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Webinar hosts

- Linda Blockus
 - Director of Undergraduate Research, University of Missouri
- Susan Larson
 - Associate Professor of Psychology, Director of Undergraduate Research, Concordia College
- Roger Rowlett
 - Gordon & Dorothy Kline Professor of Chemistry, Colgate University





Outline of Webinar

- Purpose and motivation for COEUR
- Overview of *COEUR*
 - Executive summary of the major topics addressed in *COEUR*
- Uses for *COEUR*
- Opportunity for questions and conversation





Purpose and motivation for *COEUR*

- Mission of CUR
 - To support and promote high-quality undergraduate student-faculty collaborative research and scholarship
- Purpose of *COEUR*
 - To provide a guide for those who wish to build, evaluate, and maintain robust, productive, meaningful and sustainable undergraduate research programs





Development of *COEUR*

- CUR Executive Board approves development of *COEUR* (Jan 2011)
 - Recognized need to define excellence in undergraduate research in the context CUR's 30+ years of expertise
 - Lead authors selected
- Councilors provide initial input (Jun 2011)
- *COEUR* draft developed (Jul-Oct 2011)
 - Disseminated to CUR councilors, Executive Board for feedback
- Final draft shared with Executive board (Jan 2012)
- Responses to *COEUR* solicited for publication (Oct 2011-Jan 2012)
- Publication (Apr 2012)





What is *COEUR*?

- What is *COEUR*?
 - A summary of best practices that support and sustain highly effective undergraduate research environments
- Who is *COEUR* for?
 - Institutions, programs, academic departments, faculty and administrators as they work to develop and enhance their undergraduate research programs





Overview of COEUR

- *COEUR* is organized in sections that correspond to various functions or units of a typical college or university





Contributors to *COEUR*

- Editor, **Nancy Hensel**, former Executive Officer, CUR; President, New American Colleges and Universities
- Introduction, **Mary Ann Baenninger**, President, College of St. Benedict
- Respondents:
 - **Janet Stocks**, Associate Academic Dean, Baldwin-Wallace College
 - **Paula Dehn**, Vice President of Academic Affairs & Dean of the College, Kentucky Wesleyan College
 - **Andrea Chapdelaine**, Provost & Vice President for Academic Affairs, Albright College
 - **Beth Paul**, Provost & Vice President for Academic Affairs, Stetson University
 - **Kelly McConnaughay**, Associate Dean for Liberal Arts & Sciences, & **Charles Maris**, Associate Dean for Research & Sponsored Programs, Bradley University
 - **Michael Palladino**, Dean, School of Science, Monmouth University





Contributors to *COEUR*

- **Mary Boyd**, Dean, College of Arts & Sciences, University of San Diego
- **Judith Marwick**, Provost, William Rainey Harper College
- **John Barthell**, Dean, College of Math & Sciences, University of Central Oklahoma
- **Gerardo Gonzalez**, Dean of Graduate Studies, Associate Vice President for Research, CSU-San Marcos
- **Janice DeCosmo**, Associate Dean, Undergraduate Academic Affairs, University of Washington
- **Beth Ambos**, Executive Officer of CUR
- **Bill Spellman**, Director, Council of Public Liberal Arts Colleges
- **Simon Gray**, Program Officer, Great Lakes Colleges Association
- **Maher Khelifa**, Chair of Undergraduate Research Scholars Program, Zayed University
- **Angela Brew**, Professor, Macquarie University
- **Beth Cunningham**, Executive Officer, American Association of Physics Teachers
- **Amy Chang**, Education Director, American Society for Microbiology





Campus mission and culture

- A campus culture that values and rewards undergraduate research (UR) is essential; this culture should include
 - Institutional commitment
 - Scholarly faculty and faculty commitment to UR
 - Broad disciplinary participation
 - Opportunities accessible to students
 - Integration with other engaging & high impact opportunities





Administrative support

- Administrative support and commitment are critical for excellent UR programs; this includes
 - Intramural budgetary support and startup funding
 - Faculty load credit for supervising undergraduate research and for research-related tasks
 - Student support, including for travel
 - Research grants office





Administrative support: Office of Undergraduate Research

- Most highly successful UR programs have a central office, which oversees campus-wide UR activities
- These offices include
 - A Director of Undergraduate Research
 - Full- or part-time
 - Sufficient, well-located space
 - Infrastructure support, such as support staff, an office and publicity budget





Research infrastructure

- To sustain productive research and scholarship with undergraduates, research infrastructure is needed; this includes
 - Space, instrumentation and equipment
 - Library and computational resources
 - Research oversight structures
 - Support, administrative and technical staff





Professional development opportunities

- Professional development should be available for all those involved in UR
 - Faculty, in particular, need access to research leaves and other professional development opportunities
 - Mentor training for faculty, graduate students and post-doctoral fellows is also encouraged



Recognition

- An institution that values UR as an activity integral to its mission will provide clear, tangible forms of recognition for faculty and students
 - Acknowledgement of undergraduate research in promotion and tenure guidelines, salary review and campus awards
 - Prominent publicity for research accomplishments





External funding

- External funding is essential for the development of a rich, productive, and contemporaneous faculty-student research environment
 - Faculty should seek and be supported for seeking external research funding
 - Institutional research funding should also be available



Dissemination

- Faculty and students should strive for peer-reviewed dissemination in the form of publications, exhibition or performances
- Other desirable forms of dissemination include
 - Presentation at professional meetings
 - Student research conferences
 - On-campus symposia





Student-centered issues

- UR experiences should incorporate best practices in undergraduate education and UR programs should strive to integrate student research with other engaging experiences



Student-centered issues

- Other student-centered issues include
 - Creating a community scholars, possibly with peer mentoring/teamwork
 - Providing opportunities for early and sustained involvement in UR
 - Establishing and communicating expectations
 - Providing developmentally appropriate expectations
 - Faculty mentor availability





Curriculum

- Departments and programs should design curricula that expose students to skills necessary to undertake UR, and curricula should be designed in ways to facilitate faculty and student involvement in UR



Curriculum

- Curricular considerations include
 - Research-supportive curriculum
 - Allowing for the integration of teaching and research
 - Attentive to faculty load management
 - Training opportunities and workshops
 - e.g., Responsible Conduct of Research
 - Student course credit for research





Summer research program

- A robust summer research program is essential to a vibrant UR environment, and includes
 - Faculty and student compensation
 - Student access to facilities and student services, including housing
 - Programming, including research symposia
 - Coordination between multiple programs and attention issues for hosting students





Assessment activities

- Institutions and programs should have multiple approaches to assessment to recognize successes, illuminate gaps, and collect benchmarking data, including
 - Assessment of student learning
 - Program assessment and evaluation
 - Collection of participation/outcome data



Assessment activities

- Program assessment and evaluation should include the following
 - Feedback from faculty and students on their satisfaction with activities
 - Sustainable method to collect data on participants (e.g., demographic information) and faculty mentors (e.g., outcomes)
 - Mechanism to track external funding and post-graduate career plans of students





Strategic planning

- Institutions that aspire to creating and sustaining an excellent undergraduate research environment will have thoughtful and clearly articulated benchmarks and strategic plans.



Uses of *COEUR*

- Purpose of *COEUR*
 - To provide a guide for those who wish to build, evaluate, and maintain robust, productive, meaningful and sustainable undergraduate research environments
 - Serve as a guide to sustain best practices in undergraduate research
- Many examples of uses of *COEUR* in the CUR publication





Uses of *COEUR*

- Function as a guide for strategic planning
- Provide programmatic and institutional benchmarking against national standards



Uses of *COEUR*

- Outline a structure for UR self-study
 - Utilized in assessment and evaluation of UR
- Provide guidance for resource distribution decisions
- Encourage the development of new initiatives related to UR
- Provide a framework for campus discussion





Comments by respondents on use of *COEUR*

- "...a successful undergraduate research program must be embedded in the culture of an institution and thereby supported through multiple organizational structures, policies, and programs. By using COEUR to guide efforts aimed at achieving this goal, an institution is much more likely to achieve this desired result."
 - Andrea Chapdelaine, Provost and Vice President for Academic Affairs, Albright College





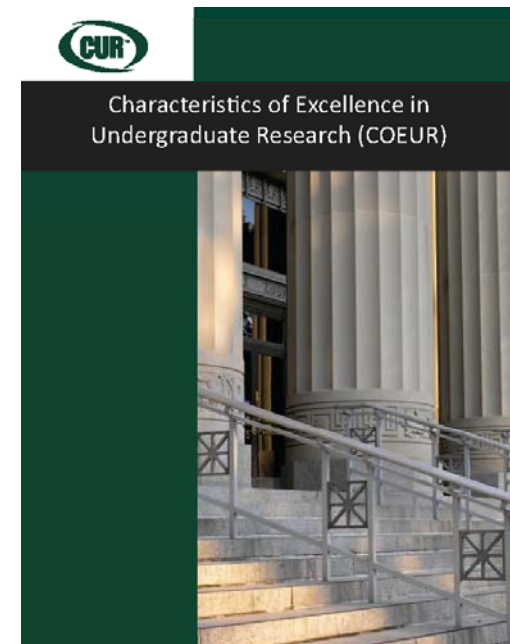
Comments by respondents on use of *COEUR*

- "...the value of COEUR is in providing the framework that makes these [consortium] conversations fruitful."
 - Simon J.M. Gray, Great Lakes Colleges Association
- "COEUR provides guideposts for developing and sustaining 'best practices' for undergraduate research."
 - Gerardo Gonzalez, CSU-San Marcos



Discussion & questions

- Which *COEUR* topics do you think are most relevant for a fruitful discussion on your campus?
- Do you have other suggested uses of *COEUR*?
- Other questions and comments?



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