

CORE

Creative Original Research Experiences Overview April 9, 2009

The Creative Original Research Experiences Committee (CORE) includes faculty and student members who are leading grassroots effort to bring research experiences to the University of Wisconsin – Stout. The mission of CORE is to promote undergraduate student research, scholarship, and creative activity as a significant active learning pedagogy. CORE members therefore promote undergraduate research as a student-faculty collaboration that examines, creates and shares new knowledge or works in ways commensurate with practices in the discipline and promotes current and emerging best practices in teaching environments.

CORE has four goals which include:

1. Assisting faculty in implementation of best practices of student-faculty collaborations including undergraduate and graduate experiences.
2. Promoting an undergraduate research (UR) experience for all freshmen.
3. Promoting capstone experiences in undergraduate research (UR).
4. Promoting engagement in other independent research.

The History and Achievements of CORE and at UW-Stout:

CORE began with a small group of faculty committed to providing undergraduate research experiences for UW-Stout students. Their efforts have grown into a committee that currently includes 36 faculty and student members. The history of CORE and accomplishments to date include:

2006	UW-Stout becomes a member of the Council on Undergraduate Research (CUR) a national organization focusing on promoting and supporting high- quality undergraduate student- faculty collaborative research and scholarship activities (http://www.cur.org/about.html).
2007 – Summer	Council on Undergraduate Research (CUR) hosted a workshop “Mentorship, Collaboration and Undergraduate Research in the Social Sciences and Humanities”. The conference was attended by Steve Deckelman, Desiree Budd, and Richard Tafalla. During this workshop three goals were proposed that included: <ol style="list-style-type: none">1) Establish a universal undergraduate research experience for all freshmen.2) Establish a universal capstone experience in undergraduate research.3) Have 5%- 15% of students engage in independent research outside of the first-year undergraduate experience and capstone experience.

2007 – Fall

Workshop focusing on undergraduate research held at UW-Stout to further explore the goals developed in the CUR's summer 2007 workshop. The workshop's three goals were:

- 1) Establish a core group of researcher/teachers who are already dedicated to scholarly activity that engages undergraduates.
- 2) Determine how to increase the number of researcher/teachers on campus dedicated to the goal of scholarly activity that engages undergraduates.
- 3) Strategize how implement the three goals established at the summer 2007 CUR workshop.

The result of this workshop was the establishment of the grassroots Committee on Research Experiences (CORE). The committee began to address how to broadly define research in a fashion commensurate with a Polytechnic and to operationalize research in a manner that can guide UW-Stout's institutional objectives. CORE subcommittees began exploring ways to implement undergraduate research experience. Subcommittees were formed to examine undergraduate research courses, learning communities, audit undergraduate research courses at the university and to explore models of implementing undergraduate research.

Spring – 2008

At the December 17, 2007 C.O.R.E. meeting it was decided to interview program directors at UW-Stout to determine research activities that were presently occurring in programs. A subcommittee was developed to achieve this task including Jeanne Rothaupt, Forrest Schultz and Susan Wolfram. On January 16, 2008 Jeanne presented at the Program Directors Meeting to provide general information about the new C.O.R.E. committee and to alert program directors of upcoming contact from one of the subcommittee members.

Procedure

Subcommittee members compiled interview questions in January, 2008. Face-to-face interviews took place from February 14-May 8, 2008. 19/29 (65%) of program directors were interviewed. Findings from these interviews follow.

Research conducted in the programs:

- All programs indicated some sort of senior research project. Examples include:
 - Capstone research and development projects with industry
 - Studies completed with social service agencies
 - Action research projects
 - Diagnostic field experience in schools
 - Market research for existing golf courses
 - Applied research to identify new materials and processes used in manufacturing
 - Research for food systems and technology

- Pure/Basic Research and Applied Research in Math and the Sciences

Themes Identified in Discussion:

- Undergraduate research primarily occurring in independent studies and senior capstone projects.
- Interface with industry/agencies crucial. Various stakeholders.
- Action and applied research more prevalent.
- Application of knowledge gained—desire to have meaningful and applicable research experiences.
- Research increases student engagement and builds community.
- Problem-based learning as research experiences: “this class makes my brain hurt.”
- Value of “research experience.” Scholarly writing, literature searches, applied experiences and problem-based learning prevalent.

Value of Research:

- Recruiting—“It tells potential student that we go beyond the class into the professional world.”
- Look to problems outside the classroom—
- Learn to discern, analyze and propose solutions.
- Learn to work as a team.
- Research projects engages faculty and students
- Funded projects assist with meeting resource demands beyond the research project, creates sustainability for institution infrastructure
- Provides professional outlook for students, maturation process for learning, and creates importance and relevance for the program curriculum
- Increased student retention
- Keeps program, faculty, and students at the cutting-edge for their discipline.

Regarding freshman research:

- Several programs begin basic research coursework in freshman year (i.e. Applied Science and Psychology)
- In introductory courses freshmen learn to how formulate a research question, search literature and begin scholarly writing.
- Investigation papers—“Now that I know this, then what?” Literature reviews with implications.
- Set the stage for more in-depth research
- Instill passion for research
- Discern quality of research
- Primary concern of freshman research is “learner readiness.”

Faculty Suggestions:

- Encourage freshmen to become involved in campus organizations.
- Develop student mentoring programs—juniors and seniors mentoring freshmen (i.e. women engineering students mentoring freshmen women engineering students)
- Work to foster collaboration versus competition.
- Learn how to communicate research in a way to “hook” young students into a “culture” of research; the importance of early engagement.

Additional Comments:

- “Much of the way research is talked about has to do with ‘applied/real world’ meanings/experiences, not the traditional methods.”
- Instructors “must be okay with messiness.”
- “It is nice to know the value of the cards—what kind of research is valued the most?”
- Not enough faculty time to engage all students.
- Concern for sustainability with changing of faculty.
- Concern for funding of labs and resources

2008 – May	Visit from provost to the CORE committee was made to request a formal position paper be developed to define and justify undergraduate research relative to UW-Stout. A position paper was drafted with discussions continuing among the CORE committee.
2008 – June	Council on Undergraduate Research held its national conference on June 21-24 at the College of St. Benedict entitled “Frontier s and Challenges in Undergraduate Research.” A team of faculty and staff, Desiree Budd (Psychology), Steve Deckelman (Math, Statistics and Computer Science), Susan McClelland, (Research Services), Richard Tafalla (Psychology), Sarah Wood (Psychology), and Robert Zeidel (Social Sciences) attended. This is the second CUR sponsored conferences faculty have attended with the express purpose returning with practices and ideas for institutionalizing undergraduate Research (UR). In addition, Richard Tafalla, Desiree Budd, Sarah Wood, and Steve Deckelman presented a poster on their NSF funded program C-NERVE and Richard Tafalla and Susan McClelland presented a poster on the student research portal developed in Research Services.
2008 – November	CUR Central Regional Workshop at Truman State University was funded by the National Science Foundation. Richard Tafalla (Assistant Vice-Chancellor), Steve Deckelman (Mathematics, Statistics and Computer Science) Robert Zeidel (Social Sciences) and Amanda Little (Biology) attended the workshop. Session topics included items such as “Creating a Campus Culture that Supports Undergraduate Research”, “Building and Sustaining Undergraduate Research Programs: Models and Strategies for Faculty and Administrators” and “Assessing the Impact of Undergraduate Research & Sustaining and Undergraduate Research Culture on Your Campus”. A mission statement and action plan for CORE resulted from this workshop.
2009 – Spring	CORE (Creative Original Research Experiences) becomes an officially recognized UW-Stout committee.

CORE's Action Plan:

The Creative Original Research Experiences Committee has developed both short-term and long-term action plan goals to facilitate undergraduate research experiences at UW-Stout. The action plan serves as a roadmap to identify items needing immediate attention as well as to help plan long-range goals. The action plan serves as a roadmap to help achieve the institutionalization of undergraduate research at UW-Stout.

Short-term Action Plan:

Getting undergraduate research recognized as important to Stout and integrated into the curriculum. Short term actions include identifying research activities already in place at UW-Stout, supporting providing recognition for existing undergraduate research, and incorporating professional development opportunities when possible. Efforts to be addressed on the short term include:

1. Obtain endorsement of CORE from Faculty Senate
2. Obtain endorsement of CORE from Senate of Academic Staff
3. Obtain endorsement from the Stout Student Association
4. Organize spring and summer professional development activities
5. Promote CORE and CUR to campus-wide audiences during opening sessions and professional development sessions aimed at entire faculty and academic staff.
6. Encourage the Stout administrators (chancellor, provost, chairs and program directors) to promote and endorse the vision of research as pedagogy and CUR's teacher-scholar to the faculty and staff.
7. Hire Deans that will support research integration into the curriculum.
8. Redefine professional development grants for curricular transformation (for 1-2 years)
9. Provide research grants and research presentation, and research recognition opportunities for students and the staff who support them.
10. Develop a web presence for CORE
11. Develop marketing materials to promote CORE, its goals and missions to students, faculty and staff.

Benchmarks of success would include, but not limited to, evaluating the number of posters, the number of student research grants produced at the University of Wisconsin-Stout. Additional measures of success would include endorsement of CORE by Student, Faculty and Academic Staff Senates. The development and presence of CORE web sites and marketing materials at key research-related events.

Mid-term Action Plan

While the short-term action plan focuses heavily on building and maintaining infrastructure, the mid-term action plan focuses on creating the resources necessary to facilitate paradigm shifts and implement research as pedagogy within the university. Mid-term action planning requires the support of the administration and long-term plans to support undergraduate research at the university. Mid-range action plans facilitating the implementation of undergraduate research includes, but is not limited to:

1. Provide funding for re-inventing general education/introductory courses to include a research component.

2. Provide dollars for professional development workshops
3. Deliver a message of support for undergraduate research from university administrators that coincide and are consistent with CORE's grassroots efforts.
4. Include the implementation of undergraduate research activities in UW-Stout's visioning and long range planning processes.
5. Provide competitive dollars for student stipends relative to students' research, original works and creative activities.
6. Host a national CUR conference at the University of Wisconsin-Stout.

Continue with the goals to

1. Hire Deans that will support research integration into the curriculum.
2. Refine assessment tools for measuring undergraduate research
3. Provide research grants and research presentation, and research recognition opportunities for students and the staff who support them
4. Maintain a web presence for CORE
5. Update marketing materials to promote CORE, its goals and missions to students, faculty and staff as needed.

Benchmarks of success would include, but not limited to, identifying the number of courses surveyed that self-identify as including an authentic research component or evaluating the dollar amounts and the number of professional development workshops dedicated to developing teacher-scholar initiatives on campus. Implement a student stipend program that supports students' creative endeavors, original work, or research. Tracking the number of research related activities posted on CORE's website.

Long-term Action Plan

While the short-term and mid-term action items listed above should be continued, the long-term action plan envisions the structural revisions on campus necessary to institutionalize undergraduate research as follows:

1. Provide every graduating senior with a true research experience in their curriculum.
2. Provide every freshman with a research experience (via RI designation),
3. Establish an Office of Undergraduate Research
4. Work toward a paradigm shift that generates a more scholarly atmosphere on campus.
5. Creating a seat for a CORE representative on the Faculty Senate.

Summary

The CORE committee is a grassroots organization that has gained a foothold at the University of Wisconsin-Stout and continues to expand. It currently includes faculty members and students who are interested in institutionalizing undergraduate research at UW-Stout.

CORE activities include inventorying current research activities, connecting with the Stout's Student Senate, creating web sites and marketing materials, and attending professional development activities relative to undergraduate research.

An action plan that serves as a road map has been laid out for the CORE committee to follow. It is realized that this plan will be fluid as goals are achieved and new challenges arise. We are a group of individuals who are committed to providing undergraduate research experiences for students at UW-Stout.