

The University of Wisconsin-Eau Claire: An Institutional Model for Excellence in Undergraduate Research

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Institutional Background

The University of Wisconsin-Eau Claire (UW-Eau Claire) is a regional, comprehensive, public university situated in rural northwestern Wisconsin. The university is located in the City of Eau Claire with a metropolitan population of about 151,000. UW-Eau Claire is 1 of 13 baccalaureate degree granting institutions in the University of Wisconsin System operating under a single Board of Regents. UW-Eau Claire is primarily an undergraduate, liberal arts based, institution. The 10,063 undergraduate students largely reside at or near the university, and the majority are traditional college age students. The university has four colleges: the College of Arts and Sciences, the College of Business, the College of Education and Human Sciences, and the College of Nursing and Health Sciences. Undergraduate students may pursue 80 undergraduate degree programs in a wide range of majors and minors within liberal arts disciplines and professional programs. There are also 503 graduate students pursuing Master's degrees in 14 graduate programs. The university has 360 full-time faculty and 75 non-tenure track instructional academic staff with teaching assignments. In the 2005 classification scheme of the Carnegie Foundation for the Advancement of Teaching, UW-Eau Claire is a Master's/M institution.

In 1988 the UW System Board of Regents established a Center of Excellence for Faculty and Undergraduate Student Research Collaboration (Center of Excellence) at UW-Eau Claire. This center had the following goals:

- Enhancing the quality of undergraduate education by providing students with an opportunity to participate with faculty in research projects,
- Keeping the undergraduate curriculum vital and updated by incorporating the results of current research into the curriculum,

- Promoting the development and vitality of faculty teaching in undergraduate programs,
- Facilitating collaborative research among faculty and students representing diverse undergraduate programs in order to identify and address problems requiring multidisciplinary solutions,
- Encouraging undergraduate students by way of their successful research to consider advanced studies in their disciplines, and
- Providing public service and contributing to economic development

Since its formation, the Center of Excellence has grown from a "good idea" to a thriving and active research and creative activity support center within UW-Eau Claire. This center is the only Center of Excellence within the UW System focused on undergraduate research, and it operates with an annual budget in excess of \$700,000. These funds support a variety of grant programs involving undergraduate students and faculty in outside-of-class research, scholarly, and creative collaborative work. More than 40% of the faculty engage in activities sponsored by the Center of Excellence. UW-Eau Claire's efforts to build strong programs to support research in the undergraduate experience have been acknowledged by the Council on Undergraduate Research (1985; Satz, 2001), the *Chronicle of Higher Education* (Geraghty, 1997), and *USATODAY.com* (Marklein, 2002). The National Conference on Undergraduate Research also awarded UW-Eau Claire funding in the first round of its NCUR/Lancy Initiative (Frankenberger, Lind, Carpenter, Snider, & Wendt, 2000). *U.S. News & World Report*, "America's Best Colleges 2007" (2007) listed UW-Eau Claire as 1 of 62 institutions throughout the nation recognized for its undergraduate research programs. Most institutions on this list are prestigious, private liberal arts colleges or research-intensive universities. Only five institutions on the list are regional, public universities.

Current Programs of the Center of Excellence

Interested readers may find detailed information about the UW-Eau Claire Center of Excellence at <http://www.uwec.edu/orsp/programs/centerofex.htm>.

Below is a summary of the various programs:

Faculty/Student Research Collaboration Grants are designed to facilitate the initiation and development of collaborative research projects between students and faculty. Projects under this program intend to provide students "hands on" experience in the research process. Awards for the academic year do not exceed \$2,800, and funds may be requested for student stipends, supplies, and travel. It is expected that approximately three-quarters of the award will be used for student stipends.

Summer Research Experiences for Undergraduates Grants seek to facilitate undergraduate research and scholarly activity during the summer. Summer grants include a student stipend of \$2,000 and up to \$2,200 for the faculty research mentor. In addition to the stipends, each collaborative project is eligible to receive up to \$500 for supplies, services, and travel. Projects under this program should lead to presentation of results at meetings of scholarly organizations and, where possible, provide baseline data for inclusion in proposals to extramural funding agencies.

Student Travel for the Presentation of Research Results awards are made to assist students traveling to regional, national, and international professional meetings in order to present the results of collaborative research. These awards do not exceed \$500 and are intended to encourage students to submit the results of their research for dissemination at professional meetings. Last year 193 undergraduate students presented scholarly papers and posters at professional meetings with the assistance of these funds.

The **Kell Container Corporation Scholarship for Faculty/Student Collaborative Research** provides one student each year with full resident undergraduate tuition, fees, room and board, and project expenses. This scholarship was created and is endowed through the generosity of Kell Container Corporation of Chippewa Falls, Wisconsin, in order to offer a premier award for an undergraduate student who is involved in faculty/student research collaboration at UW-Eau Claire. The scholarship is supplemented with project expenses for a student stipend, supplies, and travel through the Center of Excellence. In addition the faculty mentor receives a \$2,200 stipend during the project period.

Through **Diversity Mentoring Project** awards, special consideration is given to funding projects that include low-income students and students of color. When a Diversity Mentoring Program student is added to a scholarly project, additional student stipend and supply dollars are also added. Awards do not exceed \$2,000, and funds may be requested for student stipends, supplies, and travel.

As a condition of all of the above awards, students are expected to present the results of their work at the annual **UW-Eau Claire Student Research Day**. This event highlights student research accomplishments and the important role that faculty play as mentors in the scholarly activity process. Participants in arts and humanities, behavioral and social sciences, business and professional studies, and physical and natural sciences are welcome. In the first UW-Eau Claire Student Research Day held in 1993, 60 undergraduate students presented 51 posters with 42 faculty mentors. The 2007 event, 15 years later, involved 245 poster presentations by 414 students and 156 faculty mentors. UW-Eau Claire students are also encouraged to participate in the "Posters in the Rotunda: A Celebration of Undergraduate Student Research" held for legislators in the Wisconsin State Capitol rotunda and the UW System Symposium for Undergraduate Research and Creative Activity.

The Center of Excellence also produces two publications. The first, **Scholarly Contributions of the Center of Excellence** (Lind & Bodelson, 2005), is a publication that provides abstracts documenting peer-reviewed journal articles and presentations at professional meetings that UW-Eau Claire undergraduate students have authored or co-authored. In the last report, covering the 2003-05 biennium, more than 200 students with faculty mentors from 27 academic departments reported co-authored intellectual property in a broad array of academic disciplines. In all cases a complete citation of the work is provided, and in most instances a published abstract is also included. The second publication, the **Proceedings of the UW-Eau Claire Student Research Day**, is an annual document providing an abstract of each presentation made at the annual UW-Eau Claire Student Research Day.

A History of Growth and Development

Undergraduate research and the use of research as a teaching tool had its origins at our university in early 1960's. The 1988 proposal to establish a center for undergraduate research at UW-Eau Claire documents these early efforts (University of Wisconsin-Eau Claire, 1988). The subsequent almost 50 year history offers some insight into the

development of the current Center of Excellence and UW-Eau Claire's position at the forefront of a national movement to enhance undergraduate education through research collaboration between faculty and undergraduate students. In the early years and into the 1980's, departments in many disciplines including arts, humanities, sciences, business, education, and nursing made small amounts of funding available for supplies and sometimes student help to assist faculty engaged in research, scholarly, and creative endeavors. The university also created internal faculty support programs such as its University Research and Creative Activities grants and its Time Reassignment Incentive Program to assist faculty engaged in research. These awards often included modest support for undergraduate student participation in the proposed projects. Typically these internal grants supported about 20 projects per year involving undergraduate students (University of Wisconsin-Eau Claire, 1988).

In 1987 the UW System Board of Regents sought proposals for the creation of Centers of Excellence in the State's comprehensive universities. UW-Eau Claire with its long-standing interest in undergraduate research put forward a proposal to create a "Center for Faculty and Undergraduate Student Research Collaboration" (University of Wisconsin-Eau Claire, 1988). The Center of Excellence proposal contained a budget request of \$396,500 in the first year and \$423,700 in the second year seeking support for faculty time reassignment, summer stipends, student help, service and supplies, travel, library acquisitions, and so forth. By autumn 1988 Regents had approved creation of the Center of Excellence at UW-Eau Claire, but because of budget constraints, Regents provided no funding for the new center. This outcome was a financial disappointment, but on the positive side, our concept was endorsed at the highest level of the UW System. With this endorsement, the UW-Eau Claire Center of Excellence for Faculty and Undergraduate Student Research Collaboration was formed in 1988 with the limited funds at hand. This center was not to just a conceptual center but a real center with centralized management for proposal solicitation, review, and funding. However, the center was also without walls, encompassing the entire university.

The central problem facing the newly formed Center of Excellence was to secure adequate ongoing funds to meet the growing interest in faculty/student collaborative research. External funds through federal grants provided research equipment and infrastructure on a project-by-project basis, and over the next five years the university committed additional budget from a newly established UW System Undergraduate Initiative program. The UW-

Eau Claire Foundation contributed funds to support undergraduate student research and its presentation, and the UW-Eau Claire Office of University Research shifted funds into the growing Center of Excellence.

During the next six years, three new programs emerged to support undergraduate research. A small student research collaboration program began in 1989. The program made very limited funds available on a one-time basis for modest project costs. By 1992, this program evolved into the Faculty/Student Research Collaboration grant program, but there was a limit of \$600 for awards. In that year, the grant program supported 26 undergraduate students from various departments including English, biology, geology, history, music, physics, political science, psychology, business administration, nursing, and social work. A Student Research Day, started in 1993, was a showcase for faculty/student collaborative research. This event took the form of a poster session, and administrators encouraged all students involved in outside-of-class, undergraduate research to participate. In 1994, a student travel grant program emerged to aid students giving papers or posters at off campus professional meetings.

By 1996, internal funding for faculty/student collaborative research exceeded \$112,000, and the Center of Excellence supported more than 200 students through Faculty/Student Research Collaboration grants and the Student Research Presentation Travel Program. The Annual Student Research Day poster session that year included presentations from 229 students. Growth accelerated.

Funding for the Center of Excellence made a significant and lasting advance in 1997 as a result of a university-wide strategic planning effort. Led by the Vice Chancellor for Academic Affairs in coordination with the University Senate, a faculty commission, and the Student Senate, this effort, entitled "Re-definition of the Baccalaureate Degree", was a review of the entire baccalaureate program. This review led to curricular reform aimed at strengthening general education, providing more interdisciplinary courses, and reducing the number of credits required for graduation. The new degree, set at 120 credits, had a balance of 60 general education credits and 60 credits within a major and minor. The reform proposed "capstone" courses near the end of a major that often included a research element, and significantly for the Center of Excellence, it encouraged an expansion of faculty/student research collaboration. Other proposed innovations included a first year seminar to introduce students to the academic and cultural life of the university, and a service-learning component to the degree.

Funding to expand these experiential programs was not available in the university budget, but discussions with the Student Senate yielded remarkable results. An enlightened body of leaders within the Student Senate studied the issue, held open discussions with the student body, and weighed the merits of the proposed enhancements to undergraduate education at UW-Eau Claire (University of Wisconsin-Eau Claire (40th session), 1996). As outlined in an article in the *Chronicle of Higher Education* entitled “A University Enlists Its Students in Improving Undergraduate Education,” Geraghty (1997) wrote “the students themselves voted to increase their tuition by \$50 per semester, to help pay for sweeping changes in the undergraduate curriculum.” This tuition increase created a \$1,000,000 pool of money called “differential tuition” to be used toward the goals of the re-defined degree.

The Student Senate agreed to this tuition increase on the grounds that they would be involved in approval of the areas for spending the funds. The first area approved by the Student Senate was faculty/student collaborative research, and the Senate passed a resolution designating 30-35% of total differential tuition to support faculty/student collaborative research. This income brought the total funding available for collaborative research and travel to present research results to more than \$432,000 in 1997. In subsequent years the Student Senate voted to increase differential tuition to \$65 per semester and beginning in 2004-05 to an annual increase of 4.5% thereafter (University of Wisconsin-Eau Claire (46th session), 2002). The Student Senate evaluates the results of their investment annually and votes on the distribution of differential tuition funds by major category for the next year. The Student Senate has consistently maintained support for undergraduate research at 30-35% of total differential tuition. Funding for the Center of Excellence now stands at over \$700,000 annually with support from differential tuition, internal UW-Eau Claire budget, UW System, and the UW-Eau Claire Foundation. Differential tuition provides about 86% of the total.

Benefits to the Institution and Lessons Learned

The forward to this book and subsequent chapters touch on many of the benefits to students and to faculty through engagement in research. There are also big returns to the institution for their considerable investment of time and money in this effort. UW-Eau Claire’s investment in the Center of Excellence allows us to leverage these funds by

attracting grants from the federal government and other grant sources. National Science Foundation grants for Research in Undergraduate Institutions (RUI), for example, require an undergraduate research impact statement. Placing the proposed research in the context of activities of the Center of Excellence and demonstrating the university’s commitment to research in the undergraduate experience aids in acquiring these federal grant funds. Importantly federal research grants bring faculty summer salaries and research instrumentation that are beyond the scope of our internal Center of Excellence programs.

The combined effects of strong internal and extramural research activities benefit students, faculty, and the institution. These activities contribute to an enhanced research infrastructure critical to building an academically rich environment where faculty and undergraduate students engage in important scholarly pursuits. Mentoring and collaborating with undergraduate students also provides an avenue for developing the intellectual life of the university. These activities increase the reputation of the institution and allow it to attract high quality students and faculty. Many newly hired faculty indicate that the strong faculty/student research collaboration programs at UW-Eau Claire were a primary consideration in their decision to come to our institution. These faculty form the future of UW-Eau Claire and hopefully a continued commitment to faculty/student collaborative research.

The growth of undergraduate research at UW-Eau Claire and the Center of Excellence success is underscored by years of commitment and many lessons learned. First, no faculty/student research collaboration effort can survive without a dedicated faculty willing to invest the time for individualized learning through participation with undergraduates in research and creative activities. A critical mass of our faculty value mentoring undergraduate students even when it adds workload to their already full academic lives. Secondly, administrative leadership and foresight is required at the top level of the university to protect and advance financial support for undergraduate research. At UW-Eau Claire the Director of the Center of Excellence is also the Assistant Vice Chancellor for Research and Sponsored Programs and a member of the Vice Chancellor for Academic Affairs’ staff. This arrangement puts the administrator most knowledgeable about faculty/student research collaboration “at the table” when there are discussions and decisions for competing funding priorities. Finally, key to the success of the UW-Eau Claire Center of Excellence for Faculty and Undergraduate Student Research Collaboration has

been an enlightened and diligent body of student leaders willing to invest in advancing the quality of their own undergraduate education and degree.

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