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Name of Institution: **Centre College**

Title of Project: **Instituting Change by Educating Educators (Professional Development)**

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During the summer of 2008, Dr. Nayef Samhat and I worked together to organize an on-campus workshop designed to provide ideas for faculty on how to successfully incorporate student/faculty collaborative work into one's busy agenda. Two representatives from the Council on Undergraduate Research (CUR) were selected to facilitate the day-long workshop. One facilitator was from the sciences (Tim Elgren, Chemistry, Hamilton College) and the other facilitator represented the humanities (Gordon Wilson, Philosophy, UNC-Asheville). The thirty participants were provided with writing supplies and published information on undergraduate research programs. The morning session consisted of a presentation by the facilitators on teacher-scholar models of undergraduate research followed by discussion. An interactive component took place in the afternoon in which participants were asked to develop a mission statement for their scholarly activity, identify major issues regarding collaborating with undergraduates, set goals for beginning, increasing, or enhancing scholarly collaborations with students, develop strategies for achieving desired goals/outcomes, and identify benchmarks for assessing the effectiveness of strategies to achieve goals. The workshop ended with an open discussion about other issues surrounding student/faculty collaborations. To further encourage faculty to begin collaborating with students as soon as possible, workshop participants were eligible to apply for "mini-grants" to cover supplies or travel costs associated with student/faculty collaborations during the academic year.

There were three distinct goals that we hoped to achieve with the workshop and subsequent grants described above. We aimed to (1) increase the overall number of faculty engaged in undergraduate collaborations; (2) increase non-science faculty participation in student/faculty collaborations; and (3) increase student/faculty collaborations during the academic year. In order to assess the effectiveness of the workshop in meeting these goals, we collected information from workshop participants, reviewed self-report collaborative activities, and compiled summaries of independent research and internal summer grants from the past 4 years. Unfortunately, we did not see an increase in the overall number of faculty engaged in student/faculty collaborations during the 2008-2009 academic year. However, we were pleased to find that 47% of the workshop participants had not previously participated in student/faculty research. The workshop was well attended by science faculty but primarily by those already involved in student/faculty collaborations. Of the 20 science faculty in attendance, 5 were recent hires that had not previously worked in collaborations with students. We were very pleased with the number of non-science faculty in attendance. Of the ten Arts and Humanities professors that participated in the workshop, only one had previous experience in student/faculty collaborations. Of the individuals that applied for a mini-grant after the workshop, 25% were faculty that had not previously conducted research with students. We are very encouraged by the display of

interest from so many professors that are inexperienced with student/faculty collaborations and consider this a modest success for our first two goals.

While I consider the CUR – Student/Faculty Collaborations workshop to be a success in general, it did not go entirely as planned. Shortly after introducing the workshop facilitators, the discussion turned to whether Centre College should increase research activity of any sort in light of its status as a “teaching institution.” It quickly became clear that our facilitators were not just “preaching to the choir” as I initially feared, but rather there were a few faculty that were not convinced of the importance of involving students in one’s scholarship. When the education system underwent a shift from a paradigm of “Teaching” (lecturing to students) to “Learning” (knowledge acquired from hands-on, interactive laboratory classes) Centre faculty readily adapted to the change. However, another paradigm shift is taking place, from “Learning” to “Discovery.” Under the Discovery philosophy of education, students are given the opportunity for unscripted exploration and experimentation, as in a research lab, instead of scripted “cook-book” experiments where outcome is known before the experiment is conducted. Education through Discovery experiences creates students that are more likely to become internally motivated and highly creative life-long learners. Central to this form of education is student/faculty collaboration on scholarly activities. Currently, Centre’s faculty is divided on whether student involvement in faculty scholarship is desirable, or even appropriate, for a “teaching institution.” The conversation that took place at our workshop was very productive and the facilitators, with the help of several Centre faculty, did an excellent job representing CUR’s stance on undergraduate research. I do wish I had scheduled more time during the workshop for conversations regarding the role of student/faculty collaborations at Centre College. But, even in the limited time available, “doubting” participants had the opportunity to engage in a compelling discussion with external experts in undergraduate curriculum. I optimistically believe that this experience helped move several faculty closer to accepting student/faculty collaborations as a highly effective means of teaching and as a valuable trend in education. For those that were already engaged in collaborative work, tips on saving time, effective scheduling, lab management, and students as mentors were offered to streamline the collaborative process during the academic year. The development and assessment of this project revealed a weakness in tracking student/faculty collaborations. Therefore, the next step to develop a more accurate system with which to collect data on collaborative endeavors throughout the year. This will allow us to systematically determine whether the activities of our faculty are consistent with current trends in education.

As more faculty become involved in student/faculty collaborations and those currently active become more effective, Centre College will come more in line with recent trends in education and continue to be an attractive option to high caliber students. Although the workshop was focused on professional development, the overall goal is enhancing undergraduate education offered by our faculty. As a result of this grant, 16 students were able to travel with their faculty mentors to present collaborative work at professional conferences. Several other students presented their work at an on-campus conference in spring 2009. Workshop participants are slated to present their collaborative work at a monthly social meeting of Centre faculty in order to further highlight means by which to effectively work with students on scholarship. I will continue to monitor collaborative activities during the next year and plan to present on the effectiveness of the summer workshop at CUR’s annual meeting in June 2010.