

Southeast Regional Meeting  
March 5, 2004  
Club Quarters, Washington DC

The meeting was attended by 50 faculty and administrators and three undergraduates from the University of Delaware.

I. Review of Reinvention Center Activities

A. Interdisciplinarity: Participants at the Reinvention Center conference in November, 2002, recommended strongly that the Center focus on ways to promote interdisciplinarity in undergraduate education. The Center has addressed this recommendation in two ways:

- i. Math/Bio Project: The Center applied successfully to the NSF for funds to conduct a study designed to assess the current state of undergraduate biology, and specifically to investigate how quantitative approaches are being incorporated into the curriculum at research universities. The project, which involves a survey and interviews, will also ascertain the ways in which undergraduate programs in mathematical and computer sciences are educating their undergraduates about opportunities for them to apply quantitative approaches and methods in biological research. We have just completed the survey and interviews and are analyzing the data. We will disseminate the findings in a report and through the regional networks. In addition, we plan to compile an inventory of exemplary courses and programs, which will be posted in the Resources pages of the Center's Web site.
- ii. The Center has twice made Interdisciplinarity the focus of the Spotlight feature of its Web site. The first Spotlight was on "Achieving an Interdisciplinary General Education." The second Spotlight looked at the "Minor as a Vehicle for Interdisciplinary Education." Both Spotlights have thoughtful essays and models of successful programs or courses.

B. Assessment: Following up on the University of Delaware presentation on assessment at the conference, the Center applied unsuccessfully to the NSF for a project involving the modification and implementation of the Delaware instruments on four campuses. The Delaware instruments, which had been developed by a panel of faculty and assessment specialists, were designed to assess the short- and long-term impact of participation in research on current undergraduates, alumni, and faculty. The proposal was rejected because the reviewers felt it relied too much on the Delaware instruments, which did not make "a systematic effort to capture or assess the learning advantages for students who participate in research." Several people at the meeting agreed and suggested that no survey instrument can capture the intellectual growth or change in academic "disposition" that results from a meaningful research experience. This sense was reinforced later in the day when three students from the University of Delaware gave presentations on their experience in doing research and the impact it has had on their further education and on their thinking more generally. See below.

At the suggestion of the program officer and others at the NSF, the Reinvention Center will undertake a different approach to assessing the impact of undergraduate research. Rather than continuing to focus on the design and implementation of effective instruments, we will focus on the design and supervision of undergraduate research experiences in light of specified goals and desired outcomes for the undergraduate

students, faculty, and graduate students. Goals might range for example from an enhanced development of cognitive skills (i.e. in reasoning, critical thinking, communication, persuasion) to a determination to pursue graduate study, and they may be different for different undergraduate groups. The NSF officials speculated that good assessment tools can be developed only after the goals and desired outcomes are articulated and that the process include the voice of faculty. In parallel with this emphasis on the experience, we can work on designing assessment tools that will serve to codify the learning advantages of undergraduate research participation. This will require input from a group made up of faculty who supervise undergraduate research and assessment specialists.

The Center's plan is to submit a proposal to the NSF for a series of meetings of a small group made up faculty who frequently supervise undergraduate research and assessment specialists. The group will hammer out short- and long-term goals and desired outcomes of undergraduate participation and develop strategies for measuring the extent to which and how/why they are achieved. Please send the Reinvention Center the names of colleagues who would be interested in being part of the group.

- C. SLC Initiative: The Center had submitted a proposal to the NSF for a Science of Learning Center (SLC) Catalyst Grant to study past and current NSF-funded Science and Technology, Engineering and Materials Science Research Centers to determine the extent to which and how they have incorporated research advances into their undergraduate education. Based on the findings, as well as on input from experts in the science of learning and various science disciplines, the Center sought to identify effective models and practices and create an integrative prototype that campuses could use in developing their own SLCs. The proposal was rejected because the reviewers felt it did not fall within the SLC Catalyst program guidelines, which were designed to support campus groups planning to develop SLCs. The NSF plans to establish a new category in its next solicitation that will accommodate proposals like ours. The Center will re-submit its proposal at that time.
- D. Center By-laws: Now that the Reinvention Center is almost four years old and appears firmly established the Center's Executive Board has developed By-Laws for the Center. The By-Laws strengthen the role of the regional networks by calling for the creation of Advisory Boards for each. Further, they establish a connection between each of the regional networks and the Executive Board by requiring that one member of each regional network Board be on the Center's Executive Board. The Executive Board also decided to establish a Center institutional membership fee of \$1500. Those present appeared to recognize the need for the membership fee. Further, the group agreed with the consensus of the Northeastern network that the fee should not be implemented until next year, after the next national conference, given the severe budgetary problems many universities are having.

## II. North Carolina State Survey

North Carolina State is undertaking a survey on financial support for undergraduate research at research universities. George Barthalmus distributed the survey and urged all those present to fill it out themselves or to pass it on to the appropriate person on their campus. The survey is attached here as well. Respondents to the survey may return it to George Barthalmus (address on survey) or The Reinvention Center (fax: 631-632-7112). North Carolina State

will share the findings with the Reinvention Center and the Reinvention Center will post the findings on its Web site.

### III. A Review of the Program for the Reinvention Center's Next Conference

There appeared to be general satisfaction with the planned conference format and program. Based on the recommendations of the group, three breakout sessions will be added: One on service learning and civil engagement, one on ways in which professional schools can contribute to undergraduate education, and one on forming productive multi-campus partnerships as required for example for large-scale grants. It was noted that the conference does not include any sessions focusing exclusively on assessment. This decision was based on the recognition that assessment of any initiative must relate directly to the goals and desired outcomes of the initiative. It was suggested that, where appropriate, breakout session leaders be asked to frame the discussions to include such questions as what are the learning outcomes you seek for your students and how can you measure your effectiveness in achieving them. We are trying to identify good speakers and breakout session leaders for some of the sessions. Please send your suggestions to the Reinvention Center. The latest version of the conference program is attached.

### IV. Humanities Initiative

Humanities faculty attending the last conference urged the Reinvention Center to sponsor forums that focus exclusively on undergraduate education within the Humanities. In response to this call, the Center submitted a "focus" grant proposal to the NEH, to establish a network made of faculty whose research and/or teaching was in literature; the idea was for the network to provide a structure through which these faculty collectively could address disciplinary and institutional challenges that are fundamental to undergraduate teaching and study of literature. Unfortunately, the proposal was rejected. The Center is therefore moving forward another way. First, it has set aside time at all four network meetings in the spring 2004 for discussions of what faculty would like to see happen at the forums and to consider also such questions as what undergraduate scholarship means in the humanities and how scholarship should be conceptualized in relation to the discipline and in relation to interdisciplinary interests. Following this round of meetings, the Center will convene a small group of faculty across all Humanities disciplines to sift through and give shape to the recommendations and develop an agenda for the Center. Colleagues from the Carnegie Corp., National Humanities Center, ACLS and possibly organizations like the Consortium of Humanities Institutes and Centers, (made up of directors of Humanities Centers) will be invited to participate.

The discussion was organized around a presentation by Jim Dean, Professor of English at the U of Delaware, and three undergraduates. Jim began by describing the U of Delaware's approach which is based on a scientific model in which undergraduates serve as apprentices to faculty mentors and pursue projects that relate to the faculty members' own scholarly interests. The understanding that the student and faculty mentor have of the connections between their work and is critical in it shapes their relationship and fosters a collaborative rather than a hierarchical partnership. This distinguishes it from "independent study" in which the students' research is independent of the faculty's scholarly activities and in which the faculty member is clearly the research supervisor. The students and faculty typically "negotiate" the topic in the spring semester and the students begin work on their project during the summer. They continue during the academic year, though the summer is key in allowing them time to truly focus. The U of Delaware approach has several critical elements:

regularly scheduled meetings between student and faculty mentor, student participation in “peer groups” especially created so that the students can share ongoing work with other student researchers working in a loosely-related area, public presentations of their research, and, for many students, a thesis and/or publication. A graduate student or advanced undergraduate serves as facilitator of the peer group seminar. Jim pointed to several benefits of this model. It deeply engages each faculty member with an undergraduate learner, it enables faculty to be aware of student learning processes, it improves the quality of life for the faculty member, it enables the students to test their interest/aptitude for graduate study, and the students gain rigorous, exciting experience of how to learn in a discipline. In addition, he noted another unanticipated benefit; as a result of a student’s work on the text, he now has a way to teach and write about “The Legend of Good Women,” a work that he had not previously studied in depth. Similarly, Bill Frawley, who previously had been a dean at the U of Delaware, said that his research students became his “way” of talking to other undergraduate students and he frequently invited them to become undergraduate TAs in courses he taught. Thus there is a practical administrative benefit as well. The limitation of the Delaware model are the substantial amount of time it requires of faculty, the costs as students must have the summer immersion, and the fact that it can serve only as many students as there are faculty participants. Interestingly, the U of Delaware has found that the undergraduate research program is attractive to external funders.

The students’ presentations were particularly noteworthy. Josh, the first student to speak, began with a description of the process through which he and Jim negotiated his topic, stressing its collaborative nature. He then offered his perspective on the experience and the ways it differs from classroom learning. The aspects he emphasized were the student-mentor partnership which he described as an “amicable professional relationship” in which you “aren’t just told,” the intellectual engagement and growth he experienced through his scholarship, the value of his attendance, inspired by his research, in a medieval/renaissance graduate student colloquium, the academic relationships he formed with individuals outside of the U of Delaware, and the excitement of publishing a paper based on his work. He also noted the importance of the concentrated effort over the summer, which allowed him to focus totally on the project and gain a “sense of ownership.” This kind of focusing is not possible during the academic year when students have lots of demands on their time.

Annie and Sara, the other two students reinforced and expanded upon Josh’s themes. All three students noted the differences between a research experience and classroom learning and indicated that they were better able to focus on their courses as a result of their research experience. All three defined their research project as a socially and intellectually transformative experience—one which legitimized their ideas, enabled them to develop skills in written and oral communication, and instilled an enormous sense of confidence. Their words as they reflected on the research experience and their interactions with their faculty mentors are noteworthy. From the “doubt” they all reported feeling at the beginning, when they were just thinking about doing research, they moved to “risk,” “confidence,” “ownership,” “excitement,” “leadership,” “direction” and “communication.” In addition, they routinely spoke of “we” in reference to their work, denoting the extent to which they regarded it as a collaborative venture with their faculty mentor and their sense of ownership. All three students considered themselves as “pretty unremarkable” prior to their involvement in research and one said flatly that she was bored and disengaged in her first two years. All three now plan to go on to graduate school.

Jim Dean and Bill Frawley both emphasized that the U of Delaware undergraduate research program was not an Honors Program directed at the University's top students; rather it sought to engage more typical students.

The U of Delaware presentation was followed by a discussion of the value of a research experience in promoting the development of oral and written communication skills. Most universities now have forums whereby students can present their work, though few universities have courses that train them to do this. Since 1999 all North Carolina's public universities have joined together for an event at which students present their research to legislators in Raleigh. Abstracts of the students' presentations also published in a manual. One outcome of this combined activity is the submission of a grant proposal to the NSF to establish an Undergraduate Research Center in Chemistry.

The group identified three priorities for the Reinvention Center's Humanities initiative:

- A. Create new models for engaging undergraduates in scholarship. We need to break out of the traditional 1:1 working relationship if we are going to accommodate substantially more students. Duke for example has developed research courses in which, using technology, students engage in small, creative projects. The University of Maryland has just initiated a pilot Discovery Research projects in which 2<sup>nd</sup> year students participate in abbreviated projects. Two possible approaches that were mentioned were apprenticing undergraduates to graduate students, much like in the sciences, and forming small groups in which students work together on a project. Scalability remains a major problem.
- B. Undertake action designed to change the culture and promote systemic models which include rewards and incentives. This is especially important because Humanities faculty are the lowest paid. Jim Dean noted that the English Department at Delaware has no official way of acknowledging supervision of undergraduate research. Departmental and institutional quality enhancement plans must emphasize undergraduate research if there is going to be change.
- C. The gulf between classroom teaching and learning and a research experience represents a major problem. The typical classroom "research" paper is a boring and not very useful requirement in which students are asked to write on a topic in a specified number of pages using a specified number of sources. There needs to be an examination of what happens in the classroom before the research experience. What do we have to do in the curriculum to prepare and involve undergraduates in scholarship? Discovery is inherent in science and evident to students. It is not however so evident in the Humanities. How within a classroom setting can we get students to learn about and understand ethic and the process of humanities scholarship and the kind of knowledge it produces? What is the "magic line" between undergraduate and graduates courses? Humanities departments may want to partner with teaching and learning resource centers. Jim and his students will report on their experiences in the next Spotlight on the Reinvention Center Web site.

#### V. Development of a Prototype of Research Learning Community

The Reinvention Center has had conversations with officials at the NSF about developing a prototype of a research-oriented learning community directed at 1<sup>st</sup> and 2<sup>nd</sup> year students and designed to prepare them for meaningful participation in research. A distinguishing feature would be its grounding this preparation in the liberal arts. In addition to basic science and math courses, "Research Learning Community" (RLC) requirements for example might

include courses in which students learn to read and interpret texts, evaluate information, gain skills in communicating both in writing and orally, and have sequential research-oriented experiences. The goal will be to develop a model that engages students in inquiry-based learning early and helps them from the outset to develop the broad competencies and specific disciplinary skills they will need for a productive research experience.

There were presentations on three programs that have research as a central component. Deanna Cooke described the approach of The Office of Research at Georgetown's Center for Social Justice at Georgetown, which offers community-based courses and research experiences. The Center uses three strategies to engage faculty and students in community-based projects. One strategy is for the Office of Research to request faculty to incorporate community-based research in their courses in order to augment the students' experiences. A second strategy is to encourage and assist students to work on a community-based project outside a course. The third strategy involves the Community Research and Learning Network (CORAL) which is made up of higher education institutions in the DC area and supports and promotes community research and links students with existing opportunities. The Center is working to increase the legitimacy of community-based research at Georgetown in general. One advancement made thus far is the implementation of a social justice analysis track within the Department of Sociology that culminates in an upper division year-long capstone course on community-based research. For further information about the Georgetown Center for Social Justice Web site and CORAL, check out their Web sites: <http://socialjustice.georgetown.edu>; <http://coralnetwork.org>

Bernie Cook gave a presentation on the John Carroll Program (<http://jcs.georgetown.edu>) at Georgetown University, an undergraduate scholars Program that uses research as a focus to develop and train leaders for social change. Students in the program take two gateway courses. The Forum Course introduces students to the skills and practices of leadership, including public speaking and writing, interpersonal communication and critical thinking. Students also consider questions that are central to their undergraduate education such as how to integrate curricular and co-curricular involvement and how to take ownership of their education through creating an intellectual project. Texts include Richard Light's *Making the Most of College* (Harvard 2001). After completing the Forum, students enroll in the Introduction to Research Course. Developed in partnership with research library staff, the course teaches students an array of research skills, such as advanced electronic searching, discovering and using resources, in DC, and developing an annotated bibliography. Faculty regularly visit the course to discuss their research and to advise students on how to approach and work with faculty on research. As part of the course students design their own research projects, which connects their own interests with academic and student life, and they write research proposals for summer research funding.

Diane Harvey described the University of Maryland's Gemstone program. Gemstone is a living learning community of 500 invited honors students from all majors, who initiate and complete four-year team-based research projects. The goal of Gemstone team research is to advance understanding of the social implications of scientific and technological developments. Gemstone students spend their first year taking an orientation course to Gemstone as well as a specially designed course in the history of science and technology. They also form research teams, pick a team topic and identify a faculty mentor who will work with the team for the next three years. In their sophomore year, the students take Team Dynamics and Research Methods. During each of the subsequent semesters, the students work with their mentors and team librarians on their research projects. Presentation opportunities are provided each year at colloquia and the campus Undergraduate Research

Day. The fourth year is spent writing the thesis and presenting their research at the Gemstone Thesis conference. Co-curricular activities such as “Gems Camp” for incoming students, and service-learning opportunities, supplement the academic program.

Following these presentations, the group turned its attention to the “research” learning community. Several questions need to be addressed as we think about developing the prototype:

- What is the nature of a “research” course v. a research experience?
- How can we incorporate ongoing research into introductory courses?
- What do we have to do within the curriculum so that both research advances and hands-on “research” experiences by students are both embedded in it?
- Are there other processes or experiences we can offer students that will reap benefits similar to those students gain from a research experience.
- How can we use research papers to promote genuine scholarly activity?

It was suggested that we focus on ways to more closely integrate classroom learning with undergraduate research programs. A second suggestion was that we engage in conversations with colleagues in Resident Life as we move forward in creating the prototype.