

Minutes: Reinvention Center Mid-Atlantic (DC) Regional Network Meeting
March 8, 2002, Washington, DC

The third Mid-Atlantic/DC-area network meeting of research universities sponsored by the Reinvention Center took place on March 8, 2002, at the Army and Navy Club of Washington, DC. It was attended by 35 faculty and administrators from 20 public and private universities as well as by representatives of the National Science Foundation, the National Research Council, and SRI (Stanford Research Institute) International. A list of attendees is attached.

Catching Up

Wendy Katkin, Director of the Center, began with a report on the Center's activities since the group's last meeting in June.

NSF Solicitation

The Center had considered leading an effort to create a consortium to submit a proposal to the National Science Foundation for the creation of a center for teaching and learning undergraduate science, math and engineering. After giving the idea considerable thought, the Advisory Board decided that it would not be a good idea because it would put the Reinvention Center in competition with individual campuses that might be responding to the NSF solicitation for such centers. The best role for the Reinvention Center would be to serve as an important resource which would collect information and data and prepare materials such as annotated bibliographies on relevant studies that could be used by Center constituents. It could also be a valuable agent for dissemination through the networks and the Web site spotlight and resource pages. The Division of Undergraduate Education within NSF, which is sponsoring the solicitation, suggested that the Center urge campuses that are submitting application to write the Center into their applications as a major disseminating vehicle.

Disciplinary Networks

The Center plans to establish disciplinary networks devoted to improving undergraduate education at research universities. The networks, to be made up of research university faculty working in collaboration with their disciplinary associations, will provide a focus for faculty and departments to share practices and strategies and address issues of common interest within the special context of research universities. Libraries might also play important roles here. We are attaching a file that outlines our vision for them. The first networks are projected to be in English and Math. After that we will be considering forming ones in History, Life Sciences, Physics, and Psychology. Meeting participants suggested that additional networks might be established in fields served by professional schools such as Engineering and Business. The final determination will depend on interest, potential leadership and funding opportunities.

If there are departments or individuals on your campus who are active in undergraduate education, and, you think, might want to play a role in the formation of the networks, please let Wendy Katkin know. Dr. Katkin has been in contact with the Department of Education, the National Science Foundation and other groups to see if there is interest in funding such networks.

Web Site Spotlight

The Center's Web site continues to grow as a source for information and dissemination of information. The current Spotlight features an essay by Ellen Woods, Senior Associate Vice Provost for Undergraduate Education at Stanford, on the need for institutions to adopt a

comprehensive approach to involving undergraduates in research that engages all members of the university community, while providing a pathway that prepares students to participate. A second essay by Nancy Weiss Malkiel, Dean of the College at Princeton, is on the inherent value of the research experience to students and faculty alike. The Spotlight also features models drawn from Princeton, Stanford, UC Berkeley and the University of Delaware. The Spotlight URL is: <http://www.sunysb.edu/Reinventioncenter/Research%20spotlight.html>. Additional links to undergraduate research programs on many other campuses are posted on the Center's Resources page: <http://www.sunysb.edu/Reinventioncenter/resundergrad.html>.

The first Spotlight, on first-year programs, is also still available online at: <http://ws.cc.sunysb.edu/Reinventioncenter/spotlight.html>.

The next Spotlight will feature an essay by Greg Bothun, Professor of Physics at the University of Oregon, on barriers to the development of a truly interdisciplinary general education curriculum. We are looking for models of curricula, courses or programs to accompany the essay. We are particularly eager to hear about your approach and strategy. If your campus has a model you would like to share, please send Wendy Katkin a brief description of along with the name and email address of a contact person. If you would like to see a copy of Greg's essay, please let Wendy know.

Undergraduate Research Initiative

At the first two meetings, each network identified areas of common interest. While the original intent had been for each network to create sub-groups that would focus on its priorities, based on discussions at all the meetings as well as the findings of the Boyer report follow-up survey, the Center Advisory Board felt that a better strategy would be to focus across the networks on one issue and to address this issue in a variety of forums.

Undergraduate research was chosen as the issue. This topic emerged as one of the most significant issues in both previous network meetings and the Boyer survey. Research is at the core of what defines research universities, and should be at the core of the undergraduate education they provide. The other issues generally related to undergraduate education – scaling up, addressing all students vs. targeting certain populations, involving graduate students in meaningful ways, engaging faculty – are all embedded in undergraduate research.

To provide a national forum in which to address this issue, the Center is organizing a two-day conference on “Undergraduate Research and Scholarship and the Mission of the Research University,” scheduled for November 14 and 15, 2002, at the Inn and Conference Center at the University of Maryland, College Park. The conference will address over-arching institutional issues. One day will be devoted to assessment. The remainder of the meeting was devoted to discussing the tentative conference agenda

Inventory Results

Prior to the meeting the Center distributed a questionnaire which asked about the ways in which campuses define, administer, support and encourage undergraduate research activities. Significantly, only a small number of campuses were able to respond. Most reported that the information was not gathered in a systematic way and that it would be very difficult to obtain.

Discussion Points

Defining “undergraduate research, scholarship and creative activity”:

Campuses do not for the most part have formal definitions of “undergraduate research” or “scholarship.” However, in considering what constitutes research or scholarship for purposes of funding projects and granting academic credit, they expect certain basic common elements:

- The students either come up with the question themselves or participate in its formulation.
- He/she has ownership of at least a small piece of the project and is responsible for some part of the results;
- The work is within a disciplinary or interdisciplinary tradition or model;
- It is designed to produce results that are worth communicating to one’s peers.

“Inquiry” or “problem-based” learning within a classroom is not typically considered “research.” Research is “finding out something that no one knows but you,” not “finding out something that everyone but you knows.” Preparation to do this comes about through inquiry and design courses infused in the curriculum.

Definitions, whether formal or informal, vary across disciplines, and thus most campus-wide offices craft parameters that include creative activities as well as scientific research and scholarly activity. In a publication commemorating the tenth anniversary of its Undergraduate Research Initiative, Carnegie Mellon University says that “‘Research’ is broadly defined to mean: ‘Research, scholarly, or artistic activities that lead to the production of new knowledge; to increased problem solving capabilities, including design and analysis; to original critical or historical theory and interpretation; or to the production of art or artistic performance.’”

Several themes emerged from the discussion:

1. The “process” of learning how to formulate and test hypotheses, to understand the difference between the “known and the unknown,” is more important than the exact nature of the work that is conducted; what students learn is as much of a defining factor in determining what is considered a “research experience” as the specific activity carried out.
2. There is a need for different levels of research involvement at different stages of a student’s career. Although faculty, especially those in the sciences, prefer students to come into a lab relatively early, students cannot immediately step into projects without developing background knowledge. Thus the curriculum should enable progressive development of the skills needed. Introductory courses should model what those in the discipline actually do, rather than being “weed-out” courses.
3. On most campuses the number of students conducting either supervised or independent research and scholarship is still relatively low. Both because of the demand such activities place on faculty workloads and because of students’ own interests and goals, it may not be appropriate at all campuses to require all students to complete formal research projects. It should be possible, however, to engage all students in the research culture through curricular and other experiences.
4. The mentoring relationship between student and professor may be one of the most valuable outcomes of the undergraduate research experience. The actual skills are less important than that the student’s involvement in active participation.

Since supervising undergraduate students is labor-intensive -- and not always perceived by faculty as contributing to promotion and tenure -- finding ways to increase the number of

students who can participate is a major challenge for many schools. Graduate students can potentially play important roles in expanding the pool of available mentors.

To address this last point, several institutions involve graduate students as undergraduate research mentors:

- The UROP office at the University of Michigan allows a small number of doctoral students to supervise undergraduates directly.
- In Stony Brook's Women in Science and Engineering (WISE) program, graduate students develop and implement three-week "research" modules which are -- carried out by first-year students in a linked course, "Introduction to Research" designed to give them hands-on experience working in a variety of research settings. ‘
- Research is not an isolated experience. Preparation for a research experience is as important as the outcomes. We need to think in terms of the whole curriculum. The research experience is the "value added." Increasingly universities are creating courses that ask students to apply what they are learning to "real-world" questions:
- The Gemstone honors program (<http://gemstone.umd.edu/>) at the University of Maryland brings together teams of students from different majors, starting in the freshman year, to work on multi-year research projects related to social and technological problems.
- An introductory Psychology course at North Carolina State sets the class up as a group of consultants who must conduct surveys and other applied social-science research in order to answer a question for a hypothetical client.

National conference

The goals of research related courses are:

- To pique students' curiosity
- To promote the development of critical thinking skills
- To help students understand the difference between what is known and unknown
- To give students an experimental opportunity to gain a grasp of this.

The Humanities and Creative Arts must be integrated into the research/scholarly community.

We are in the midst of revising the conference agenda in light of suggestions/comments made at the New York, DC, and California network meetings. We will send you the new agenda around May 15, after the Center Advisory Board meeting. We will also post it on the Center's Web site.

The changes mostly involve: 1) an expansion of the agents of change to include deans, provosts, and representatives from government and funding agencies; and 2) modification to the assessment component to address your priorities and to include other approaches. We welcome your suggestions for current or former deans, provosts, department chairs, representatives of professional societies, and others to invite to participate in panel or roundtable discussions. We also welcome suggestions for leaders of both the institutional and disciplinary break-out session.

Registration Fees, Attendance Estimates, and Follow-up

The total conference cost and thus the final fee structure will depend on the number of people attending. The fees will include breakfast, lunch, and conference materials for two days. The graduated rate structure reflects the Center's interest in encouraging universities to send teams that include administrators, key staff, faculty, graduate and undergraduate students.

At present, based on 150 attendees, the following conference pre-registration fees are proposed:

First person: Administrators / Staff: \$400; Faculty: \$325

Each additional person: \$300

Graduate and undergraduate students: \$200

Registration fees after September 15 will increase \$50.

The Center is seeking funds to underwrite some portion of the costs, but has no commitments yet.

To aid in conference planning, we are asking for the following information:

1. How many individuals from your campus do you expect to attend the conference? How many do you estimate will be faculty? administrators? graduate or undergraduate students?
2. Is your campus likely to help cover graduate student expenses?
3. Do you know of any associations that might sponsor the graduate students' registration fees? And do you have good contacts in these associations?
4. Are there groups or individuals, either on your campus or at other institutions or organizations, who should be added to the conference mailing list? We will be sending information to all Presidents, Provosts, and Deans, but would appreciate receiving the names of faculty or others who might want to attend.
5. Finally, if you have suggestions for panelists, roundtable participants or breakout sessions leaders, please let us know.

Please send your responses to Wendy Katkin by April 25th (reinvention@notes.cc.sunysb.edu)

Conference registration materials will be mailed in June.

There will not be a network meeting in the fall, but there will be one in the spring of 2003.