

Minutes: Reinvention Center West Coast Regional Network Meeting  
March 22, 2002: Los Angeles, Ca.

The third west coast network meeting of research universities sponsored by the Reinvention Center took place on March 22, 2002, at the University of Southern California. It was attended by approximately 40 faculty and administrators from more than 20 public and private universities as well as by representatives from the UC systems office. A list of attendees who had responded by March 18 is attached. We ask that attendees who are not on the list to send the Center their name, title, institution and email address: [reinventioncenter@sunysb.edu](mailto:reinventioncenter@sunysb.edu)

### 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 a network, 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. Several sessions will be devoted to assessment. The remainder of the meeting was devoted to discussing the tentative conference agenda

#### 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 at their institutions and that it would be very difficult to obtain.

#### *Discussion Points*

Definition of Undergraduate Research, Scholarship and Creative Activity: While few campuses have formal definitions of undergraduate research or scholarship and there was variation among those that do, there was general agreement that to be considered “research” or “scholarship” a student’s project should meet five criteria: 1) Involve inquiry, study or investigation, 2) use acceptable methodology, 3) make a meaningful intellectual or creative contribution 4) result in a product (abstract, paper, object) and 5) be supervised by a faculty member or colleague with a similar level of expertise. Students should participate in the generation of the question or problem they are addressing in their work.

Rather than imposing a single definition, several members of the group proposed a developmental or learning curve model, with students gradually developing component pieces along the curve; there should be different goals and desired outcomes, depending on the student’s level, or place on the curve, and different ways for students to achieve these goals. These include research-oriented courses, apprenticeships, service learning and relevant extra-curricular activities. The steps and process should be clearly delineated and there should be clear benchmarks for students every year. Lower division courses that emphasize group activity and problem-based learning can make students aware of the intellectual activity on the research university campus and encourage and help students to develop skills so that they can become part of the intellectual community.

A major question is how many students can reasonably be expected to complete the process and achieve the skills to pursue a significant project. Similarly, what percentage of students should have some kind of entry experience? Should institutions direct their efforts at all students or specific populations?

Carolyn Merkel of Cal Tech gave a brief overview of a report she prepared under the auspices of the AAU on the undergraduate research enterprise at six research universities. A key factor driving all their undergraduate research activities is their institutional culture. Every institution has its own unique culture, based on shared norms, beliefs and traditions. The extent to which an institution values undergraduate research can be gleaned from the institution’s strategic plan and administrative vision and the level of faculty participation. Research universities need to engage in an institutional conversation that includes discussion of undergraduate education. Students should know from the beginning that they are part of a community of scholars and should be educated to understand what that means. Interestingly, at several institutions, transfer students, more than “native” students who started out at the institution, know why they are there and they tend to be more involved in research than their native counterparts.

To demonstrate the importance of institutional culture, Carolyn offered a comparison between Rutgers and the University of Illinois, both large public research universities. Rutgers has strong and visionary leaders who in the past ten years have promoted their vision, brought scattered undergraduate initiatives together under one umbrella to give them visibility, and supported the introduction of other innovations as well. In contrast, the University of Illinois has not had an institutional discussion and, though significant numbers of high-achieving students are involved in research/scholarship, their activity is isolated and not apparent to the University community.

How does a university start the conversations, particularly in ways that relate to faculty and department interests and priorities? There is a lot of good will among faculty that universities can build on. We need to examine the faculty reward system and develop models to ease the load and reward faculty. One strategy that has worked well at several campuses is to fund faculty-generated projects that involve undergraduates. Another approach is through a central office that awards undergraduate fellowships for research/scholarship and/or grants to faculty to support undergraduates. Many campuses have seen a “trickling up” process taking place as increasing numbers of faculty from diverse departments/units/schools are participating in student supervision.

Similarly, departments/disciplines need to determine where and how undergraduate research fits into their culture and assess the contribution individual student research/scholarship can make. A major challenge is how to encourage departments to think of themselves as learning communities and to undertake a meaningful consideration of these issues and to persuade them that mentoring undergraduate research is in their interest.

One way to “justify” faculty and departmental attention to undergraduate research is to emphasize its potential to enlarge the pool of undergraduates interested and prepared for graduate school. We, as research universities, need to make graduate studies more attractive to our undergraduates.

Contrary to the prevailing mythology, which often views them as opposing activities, research and teaching cannot be separated. Good classroom teaching and learning means bringing research into the classroom. Undergraduate research bridges the continuum between research and classroom instruction.

Tentative Conference Agenda. Several suggestions were made.

- The session on the value added of an undergraduate education at a research university--currently set to conclude the conference – should be moved up in the program and used to outline the unique attributes of a research university (i.e. diversity of students, array of resources and opportunities, and presence of graduate students and postdocs) and to frame discussions at breakout sessions and the roundtables.
- We need to talk more about basic institutional challenges. Again, this discussion should take place on the first day. The breakout sessions could be the appropriate vehicle if the leaders and the audience are all primed to focus on 2-3 specific issues. Such a focus is necessary to prevent the discussion from wandering or being too general. The breakout sessions should also include some discussion of best practices and helpful strategies.
- The conference should bring together members of all the groups who influence what research universities do—professional societies, government agencies, funding agencies, accrediting agencies-- to discuss their essential role in helping to create a culture that values an undergraduate education infused with research. Many professional societies such as, for example, the Society for Molecular Biology and the Society of Cell Biology, have sub-divisions or task forces or committees on undergraduate education. Some have forums at national meetings for undergraduate presentations. Others publish student papers or articles in pedagogy in the discipline. It would be useful to have a session in which representatives from different professional societies brainstorm about the role they could play and how they could help in engaging undergraduates in research. Similarly, there might be a panel made up of representatives from funding agencies to consider ways they can promote, support and validate an undergraduate education that has research at its foundation. The NSF, for example, changed its funding criteria to include a mandatory assessment. It also increased support for initiatives directed at undergraduates. NIH, NEH do not have similar programs. Private foundations should also participate. One subject that should be raised is funding at the local level.
- The discussion of assessment should be broader than the Delaware model and include a variety of approaches and tools that take into account such factors as the diversity of the undergraduate populations at research universities and individual institutional contexts and goals.

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 of 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 sessions.

#### 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 25<sup>th</sup> ([reinvention@notes.cc.sunysb.edu](mailto: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.