

Lessons from the CUR Institutes on Institutionalizing Undergraduate Research

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Beginning in 1996, the Council on Undergraduate Research (CUR) began offering weekend-long workshops called CUR Institutes that bring together faculty and administrators interesting in probing issues related to undergraduate research. The longest running version of these Institutes is one entitled *Institutionalizing Undergraduate Research*; thirteen Institutes had been offered by the end of 2007. As coordinators or facilitators at all but one of these Institutes, we have interacted with over 150 colleges and universities that have attended, and we believe that we can reasonably describe many of the lessons that institutions have derived from the workshops. We also should point out that we have engaged in follow-up visits to many of these attending institutions, so our relationships have extended over longer periods of time, and these visits allowed us to reflect further on the outcomes of the Institutes.

In this piece we will describe the Institutes along with the benefits and challenges that institutions in attendance have discussed. We realize that all institutions are idiosyncratic and not all of the issues described here will be applicable to local institutional conditions; however, we will try to encapsulate enough issues to include those that are important to many different kinds of colleges and universities.

Background on the Institutes

Each institute is structured as an intensive two and one-half day workshop that begins on a Friday night and extends through mid-day on Sunday. Two general activities are interwoven throughout the weekend: plenary sessions where the facilitators, coordinators and invited speakers give presentations, and break-out sessions where the teams work with their facilitators drafting goals and plans for their individual campuses. In designing the programs for each session, the coordinators attempt to accomplish two objectives. First, during the plenary talks, background information on topics relevant to undergraduate research assists

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participants in identifying the issues they may want to consider during the weekend. Topics for these talks vary and have included: models of undergraduate research programs, the impact of undergraduate research on student learning, examples of successful undergraduate research programs, assessment of research activities, inclusion of underrepresented groups, the role of grants and contracts offices, collaborative and community-based research, research in the humanities and social sciences and funding opportunities for research.

The second, and perhaps the most important weekend activity, involves campus teams developing mission statements and establishing a series of goals for undergraduate research on their individual campuses. The culmination of each Institute is a summary presentation of team goals and plans that is delivered as a final project to all the attendees. This public presentation gives teams an opportunity to test out their ideas, to prioritize their goals, and to extract ideas from other teams that might be beneficial to their own campus.

Each Institute has involved between 11 and 16 teams, with each team typically consisting of three to five members. Using an application process, the coordinators solicit background information about the composition of each team and their reasons for attending. The most common motivations for attendance revolve around an interest in broadening campus research activities from isolated pockets currently present to an integrated campus-wide effort. Other institutions lack even pockets of faculty research and are interested in starting a research effort from ground zero. As part of the Institute structure, coordinators match schools with similar interests and backgrounds to a common facilitator so that teams will have the opportunity to learn from other participants, as well as from the facilitators and speakers.

We believe the composition of campus teams, especially the individual disciplines of the members, is critical to the success of the developed campus initiative. As such, the most successful teams are

those with broad campus representation from many different departments. In addition, we strongly encourage each team to include department chairs and an administrator, preferably one with oversight responsibilities in some aspect of undergraduate research. This person most commonly has been a Dean, Provost/VPAA or grants officer. Because the composition of the team is absolutely critical to the success of the campus initiative, institutions should exercise considerable care in selecting team members for the Institutes. Team members must have credibility with their campus colleagues, and at some level, they must have the ability to help foster campus change. We also expect that each team member contribute to answering a set of self-study questions. In this manner, the goals generated at the Institute have a realistic chance of being received positively by the campus community after the teams return to their home institutions.

Preparation for the Institutes

We have found that for teams to be successful, members must come to the Institute having completed their surveys and groundwork. The Institute should not be the starting point of the process, but rather should serve as a catalyst to help move issues forward on campus. One of the most useful pre-Institute activities is the construction of an inventory relating to existing campus activities associated with undergraduate research. This inventory may be performed by the Institute team, which is a typical situation, or by others on campus, such as a research committee. In either case, this activity is a very useful campus mechanism to draw attention to the topic. The most common outcome of the survey is the realization that numerous pockets of undergraduate research exist at many localities on campus, and that in some cases the activity is substantial. However, the total campus community is generally unaware of this broad participation.

Prior to attending the Institute, we ask teams to generate a list of attainable goals for the weekend and to enumerate the positive features of their campuses related to research, along with the challenges or impediments to their possible research goals. No doubt, much of the support needed to enhance undergraduate research across institutions involves time and resources. For example, all faculty members agree that the reduction of teaching loads/assignments would allow for additional time to engage in research activities. However, we have found that regardless of the teaching load, a reasonable match between an institution's tenure and promotion expectations and the teaching

load/opportunities is most important. A significant campus problem arises when a mismatch occurs between research output requirements (for retention, tenure or promotion) and the time available to do the work. As an example, for some schools a nine unit per semester teaching load might be quite reasonable while for other institutions with higher research expectations, this may be an unrealistic teaching load. As a word of caution however, faculty should be careful what they request--a reduction of teaching loads almost always occurs with additional administrative expectations for output and productivity. This results in a higher level of pressure on the faculty.

One of the common reasons campus teams attend the Institutes, as relayed by the attendees, is that an administrator, commonly the VPAA or Provost, wants to broaden campus participation beyond isolated pockets of research. Frequently the administrator wants to institutionalize the research activities and points to the science areas of the campus for a how to example. However, one must be careful about trying to import a science model of research into the humanities and other disciplines. We encourage institutions to judge the merits of research based on their own disciplinary models.

Fundamental to the work at the Institute are the choices that teams need to make regarding the structure of their individual campus activities. As an example, teams need to contemplate the merits of a departmental-based model whereby individual departments serve as the focus of the program versus a campus-wide program whereby an office of undergraduate research oversees the activities. We have seen successful examples of both models, but prefer the campus-wide model since the centralization of activities allows the faculty members additional time to focus on their major duties, teaching and research, rather than on administration.

Outcomes from the Institutes

So what are the characteristics of a campus team with successful post-Institute outcomes? First, the campus must have the capacity and desire for change rather than the inclination to remain comfortable with its current state of affairs. Campus change can proceed in many ways, however, specific choices are very individualized and beyond the scope of this paper. What we do know is that a campus ripe for transformation has strong campus leaders who believe in these efforts and who have the power and sustainability to bring about the intended transformation. These leaders may be

administrators, but in the initial phases of campus efforts we have more commonly found a faculty champion most effective in keeping the fire burning brightly. This grassroots approach seems to garner more support from the faculty, although at some point in time those leaders with the ability to move and/or reallocate resources must join the project.

Naturally, having strong campus leadership goes hand-in-hand with a thoughtful and viable plan that can move forward in a reasonable time frame. At the heart of the Institute is the construction of individualized short-term and long-term goals that will help institutionalize the campus undergraduate research program. These campus plans must include a list of goals, time lines for implementing the goals, a list of individuals responsible for each goal, and the assessment plan (with time lines) for each goal. We have found that responsible individuals or offices must be identified and associated with each goal. As an example, stating that the "institution will sponsor workshops focusing on undergraduate research" is insufficient. Rather, teams must specify the necessary timelines, and individuals responsible for establishing contacts and presenting the workshops. Without this level of planning and specificity, the plan is little more than a notion and most likely will never be implemented.

From our perspective, the most successful institutional teams are those that methodically complete the campus plan follow-up once they return to their home institutions. We speculate that many strategic plans are gathering the dust of non-use on virtually all faculty bookshelves. Although most teams find the weekend Institutes to be psychologically invigorating, returning to their home institutions and initiating substantial campus change is a great challenge. If follow-up is an essential key for success, it becomes clear that campus advocates must be committed for the long term. There will be many peaks and valleys in the implementation of campus plans, but it is clear from the literature, and from our experiences, that the quality of the campus leadership is the single most important factor in generating substantial institutional change.

All institutions experience common obstacles to creating a robust campus research ethos. Typical issues include faculty resistance to undertaking more scholarship, lack of resources and compensation, rank and tenure issues, differing cultures between departments, teaching loads and motivational issues for faculty, students and administrators.

Attendees frequently ask us to speculate on standard campus norms for the allocation of scarce resources – what must an institution allocate to

sustain a successful campus-wide undergraduate research program? Our typical answer is that many individual campus factors enter into the equation, and therefore a single solution is not applicable to all institutions. This answer does not please most attendees, for they want a specific dollar amount to use as ammunition upon returning home; however, the individual teams must realize that institutions vary significantly. We certainly can list characteristics of institutions with successful, established programs. While not all these attributes are found at all institutions, the list does give a good sense of what institutions may want to consider if interested in a comparison with successful undergraduate research programs:

- Programs mesh with institutional/departmental goals.
- Programs are started by interested faculty who also sustain them (at least initially).
- The administration supports programs physically, psychologically and monetarily.
- Undergraduate research is included in strategic planning documents—at all levels.
- Travel funds are available for faculty and students.
- Teaching credit is provided for research with undergraduates.
- A student research symposium and/or a campus publication of research results exists.
- A program of early research sabbaticals is in place.
- Institutional monies are available for summer stipends for faculty and students.
- The Undergraduate Research Program is campus-wide.
- There is a research-rich and flexible curriculum.
- Faculty and administrators support teaching and scholarship.
- Support is available for writing grants and contracts.
- Student-faculty research is recognized in rank and tenure decisions.
- Faculty who are research active are publicly recognized.
- Matching funds for external grants are provided.
- Adequate space and equipment is available.
- Students are recognized for their research accomplishments.
- The campus support staff, for example the Business Office, is supportive.

On an individual faculty level, new faculty in the sciences often receive start-up packages totaling from \$20,000 to \$200,000, with approximately

\$75,000 considered to be reasonably competitive with the highly research-active undergraduate institutions. New faculty members frequently receive an initial reduced teaching load, extra travel funds and summer stipends for themselves and for their research students.

Conclusions

Ample evidence shows that CUR Institutes have been successful, and institutions have derived considerable benefits from attending. Less clear are the long-term overall benefits for research in US colleges and universities. Although each Institute strives to assist individual institutions to work towards their goals and aspirations, the overarching goal of the Institutes is to help change the landscape of higher education so that faculty research with undergraduates becomes the norm rather than the exception. We cannot yet tell if we have made substantial progress towards this goal, but we are optimistic that movement has occurred. For example, although undergraduate research has a relatively long history in the natural and physical sciences where it is quite natural for collaborative work to occur, in other disciplines collaboration is not the norm. However, we have seen the disciplinary backgrounds of the attendees at the Institute change quite dramatically over the years so that faculty members from the social sciences, humanities, business and education now comprise a majority of the attendees. This shift has led CUR to offer Institutes specific to those in the social sciences/humanities as one way to reach out to this large cadre of faculty who tend to have less experience with undergraduate research as a means of enhancing student learning.

CUR recently received a \$500,000 multi-year grant from the National Science Foundation to offer new Institutes with a regional focus as a mechanism to build research communities in various regions of the country. Central to these efforts are enhanced follow-up activities with longer-term relationships developed between CUR and the institutions in attendance, and amongst participating institutions. We will offer these NSF-sponsored Institutes for the first time in the fall of 2007.

We have found that successful teams typically leave the Institutes with at least two major accomplishments. First, they go home with a well thought out plan and one that has gone through a reality check by other participants at the Institute. The teams should be confident they are on the right track for success and are part of a national effort that has validity, and an exciting future, and is one in which they would like to participate. Second, the successful teams go home energized by the discussions and engagement with the other participants and their facilitator. Good teams must have considered how this energy will be sustained once they return to campus; institutionalizing these efforts and substantially changing the campus culture is a great challenge.

Many institutions have reported positive outcomes from attendance at these Institutes. However, we should not minimize the challenges of changing the culture of any institution, especially around an issue as inflammatory as the level and type of research expected from the faculty. As we have described, the challenges are many; however, the benefits are substantial if an institution takes on undergraduate research as a method of enhancing faculty lives and student learning. We remain confident that a fundamental paradigm shift is occurring at institutions across the nation.