
REINVENTING THE MID-LEVEL RESEARCH UNIVERSITY

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Many universities want to move into the category of “research university” or to raise their ranking among research universities. In 1999 Southern Illinois University Carbondale (SIUC) was barely clinging to research-university status after a decade of stagnant productivity and lack of administrative commitment to the research mission. Here we describe some of our strategies and initiatives over the past four years to “reinvent” SIUC’s research enterprise and improve resources and services available to faculty researchers and scholars.

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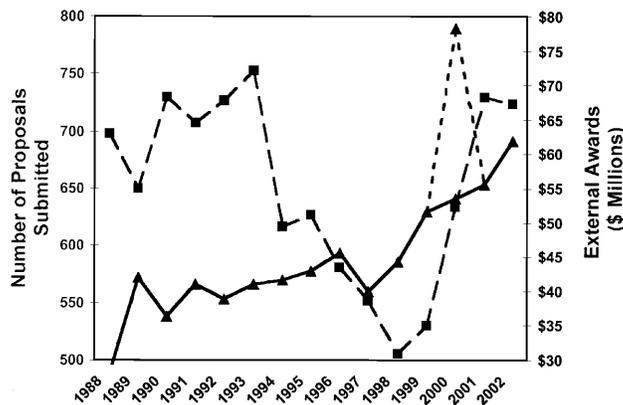
“**R**ESearch” universities are distinguished from other types of postsecondary institutions in that they confer doctoral degrees as well as require research achievement, undergraduate teaching, and campus service for faculty advancement and tenure (Graham and Diamond, 1997: 249; Cole, Barber, and Graubard, 1994; Graham and Diamond, 1997). Research, defined in the broadest sense to include scholarly and creative activity and research training, refers to those activities that create new knowledge, ranging from scientific experiments to scholarship in the humanities and the creation of works of art. Research is thus an important determinant of a major

university's reputation, which in turn affects virtually all aspects of the institution, including its ability to attract resources and recruit and retain high-quality students and faculty members. The stature and accomplishments of a research university are highly valued by the faculty, the students, and the institution itself; once this status is achieved, most institutions fervently strive to maintain or enhance it.

It is of interest, then, that Southern Illinois University Carbondale (SIUC) failed to respond to the burgeoning nationwide research initiatives that focused the agendas of most other research universities during the 1990s. For SIUC, that decade was one of decline in many research indicators.

Since mid-1999, however, when three of the four authors of this article came to their positions in administration of research and graduate programs at SIUC, these declines have been reversed, as exemplified by an increase in proposal submissions of roughly 50 percent, an increase of more than 40 percent in annual external grants and contract awards (Figure 1), and a 15 percent increase in graduate enrollment. Here we describe some of the strategies that we believe were most important to reenergize the research mission of SIUC.

FIGURE 1
EXTERNAL PROPOSALS AND AWARDS
FISCAL YEARS 1988–2002



BACKGROUND

Southern Illinois University Carbondale (SIUC), currently classified Doctoral Research-Extensive, is the only research university in the southern half of Illinois. As part of the Southern Illinois University system, SIUC is a non-land-grant, comprehensive institution with a medical school in Springfield. The system also includes a primarily undergraduate campus in Edwardsville. In the 1973 and 1976 Carnegie Foundation classifications of academic institutions by their mission, SIUC was ranked Doctoral I. By the 1986 ranking, SIUC had moved up to Research II. By the 1990s there was considerable interest on campus in trying to attain the more prestigious Research I category.

In fact, SIUC was barely clinging to its Research II classification. The 1990s witnessed a 30 percent decline in proposal submissions, a virtually constant level of \$40 million in external grant and contract awards, and reduced graduate enrollment. As measured in dollars—federal and non-federal awards and expenditures—research was essentially stagnant. In federal research dollars, SIUC was at the bottom of the list of Research II institutions. And in terms of “real dollars,” adjusted for inflation, research performance plummeted. SIUC’s status as a research university was maintained solely by the number of Ph.D. degrees it awarded each year.

What happened to SIUC between 1986 and 1999? For more than a decade, the administration had primarily addressed undergraduate programs and short-term crisis management (responding to statewide budget cuts) rather than the increasing availability of federal, state, and other research funds, which fueled other universities’ soaring research productivity. SIUC lacked a “culture of research,” an intangible but nonetheless readily apparent atmosphere prevalent at the nation’s highest-ranked research institutions.

Our most essential mission, then, was to create a “research culture” at SIUC—but how to bring about such massive cultural change?

CREATING CULTURE CHANGE

Our efforts to transform the prevailing atmosphere at SIUC and develop and nurture a new “culture of research” had multiple elements incorporated into a formal strategic plan, which established our basic agenda and also allowed us to take advantage of “targets of opportunity” as they arose. The following points summarize our major activities over the last three years.

1. STRATEGIC PLANNING

Our first and most essential effort was to develop a strategic plan (see Hensley, 1992) for the Graduate School that focused on three goals: (1) increase the amount, quality, and visibility of sponsored research at SIUC; (2) increase the resources available to attract, retain, and degree high-quality graduate students; and (3) build on existing faculty/staff strengths and research partnerships to benefit the citizens of Illinois and enhance the regional and state economies.

2. VICE CHANCELLOR FOR RESEARCH

Within that strategic plan, a critical goal was the creation of a high-level administrative position for research advocacy. In 1992, the old title “Vice Chancellor for Academic Affairs and Research” had been revised: “Provost” was added and research responsibility was reduced to a third-level administrative tier, “Associate Vice Chancellor for Academic Affairs (Research).” Creating a full Vice Chancellor for Research (VCR) position at SIUC was hardly a new idea, since external reviews of the Graduate School as early as the late 1980s had recommended such a position, but it was opposed by the administration and faculty alike.

Our strategy to create a new high-level administrative position for research was based on communication and transparency: We presented graphics that illustrated SIUC’s floundering research status and showed that major research universities had top-level administrators responsible for research. Faculty members and students debated the issue at length. Major issues included increases in the allegedly “bloated” administrative

costs and the perception that “research = science” was favored over creative activity. In the end, the Office of the VCR (OVCR) was created.

3. INSTITUTIONAL SUPPORT

An extremely important element for the success of any initiative within a complex organization is the backing of its administrative leadership. In 2000, the SIU Board of Trustees hired a new President of the university system, who in 2001 hired a new SIUC Chancellor from a top research university. Both leaders are frequent and strong advocates for SIUC’s research mission.

This new administrative support for research at SIUC resulted in creation of the OVCR. Despite internal and external recommendations of support, the concept had not been implemented by prior administrations for fear such a position would diminish the power of the Provost. The newly hired Chancellor recognized the importance of research advocacy and quickly secured approval from the President and Board of Trustees to create the position of the Vice Chancellor for Research and Graduate Dean (VCR/GD). It was filled on a permanent basis after a national search in summer 2002.

4. CONSTITUENCY GROUP SUPPORT

The Graduate Council, consisting of 21 elected graduate faculty members and five graduate and professional students elected by the Graduate and Professional Student Council (GPSC), also played important roles in supporting the VCR/GD position. The Graduate Council, for example, voted nearly unanimously in favor of the VCR position. Research and graduate program administration works closely with both groups because close collaboration is crucial to gain the broad support necessary to implement new initiatives.

5. COMMUNICATIONS AND PUBLICITY

The new strategic plan to recreate a “research culture” on campus includes improving campus-wide communication about

research in general from the OVCR and the Office of Research Development and Administration (ORDA). The importance of research to a research university had to be sold to both administrators and faculty members. Our message emphasized the following benefits of research:

- new knowledge, from scientific discoveries to works of literature or art;
- a unique strength that distinguishes the research university from regional institutions;
- enhancement of recruitment and retention of high-quality students and faculty members;
- enriched experiences that better prepare students for success;
- increased value of degrees awarded to students in the future, present, and past;
- enhanced preparation and quality of the work force;
- enhanced ability to attract additional resources to the University;
- an opportunity and area for budgetary growth;
- direct economic impact from new resources and personnel attracted to the region to conduct research;
- new jobs, spending, and taxes generated by new companies derived from university-developed intellectual property;
- investments in research are highly valued by citizens (*Survey of Illinois Residents, 1999*); and
- a major positive impact on the reputation of the University.

Other strategies focused on printed materials and a Web site. *Perspectives* (a bi-annual research magazine) was redesigned to incorporate full color, the newsletter was reformatted and retitled *Research Matters*, and Graduate School activities were

described in *Highlights*. We created a full-color annual *Research Profile* to present highlights of SIUC faculty and student research and scholarly and creative activities, data on sources and kinds of external research support, and similar information. The *Research Profile* is mailed to a broad audience of local businesses, state officials, and universities throughout the country, as well as all faculty members, and is an extremely useful handout at internal and external research-related meetings.

The ORDA Web site in 1999 was a hodgepodge, developed by accretion. The office operated as it had for the last fifteen to twenty years, with little accommodation to the different and rapidly changing research administration environment of the twenty-first century. We overhauled the ORDA Web site, not once but twice, to have “everything”—publications, forms, guidelines, research-related policies—readily available on the Web.

6. FACILITIES AND ADMINISTRATIVE (F&A) RATE

The University last negotiated an F&A rate in 1991, and the two subsequent requests for extensions led to a loss of one point as penalty. SIUC’s F&A rate was the lowest among then-Carnegie II institutions, resulting in a significant loss of indirect cost returns to fund internal projects. With the cooperation of units all around campus, many with new leadership and staff members that understood the research mission, plus outside consultants, we submitted a new proposal and increased our rate by two points, effective June 2002.

7. REDISTRIBUTION OF F&A COST RETURNS

To make the most effective use of the indirect cost returns in support of research activities, a more appropriate plan for distributing these monies around campus was devised. The existing formula had an 80:20 split, with 80 percent going to the administration (from which about 20 percent of the total was transferred to the Graduate School and ORDA) and 20 percent to the originating unit (mostly colleges, each with its own plans for internal distribution). The distribution changed to a 70:30

split, or more precisely a 30:40:20:10 distribution, with 30 percent to the administration, 40 percent to the OVCR, 20 percent to the originating unit/college, and 10 percent to the originating unit/department.

This new plan increased the VCR's ability to reinvest in research through matching funds, faculty research grants, faculty and graduate student travel, and other programs. Originating departments or centers enjoy at least 10 percent of the returns as an incentive to induce faculty members to submit proposals and to chairs to encourage their faculties to do so.

8. FACULTY START-UP FUNDS

Research at a university is driven by its faculty, and the number and quality of faculty members determines a university's capacity for research productivity. SIUC lost large numbers of productive faculty members in the last decade, partly to retirement but also because of the perceived lack of administrative support for researchers. To facilitate new faculty hires, the VCR and Provost proposed \$2 million in FY04 new tuition dollars as the first year of a multi-year strategic faculty hiring initiative to support new lines across the campus; this plan was approved by the Chancellor and is currently being implemented. However, hiring new faculty members presents enormous financial challenges in terms of providing them both competitive salaries and suitable facilities (so-called start-up costs) to establish their own research programs. Faculty members in the experimental sciences require access to a well-equipped research laboratory, the costs of which typically *average* between less than \$100,000 to more than \$300,000 for each hire, depending on the discipline (*New Hires Survey*, 1999–2000). Average start-up costs are substantial even for disciplines not traditionally considered to be technologically driven, e.g., \$20,000 for accounting, \$14,500 for educational studies, \$50,000 for health and sport sciences, \$10,750 for linguistics, \$40,500 for psychology, and \$8,000 for sociology.

Competitive recruitment of quality faculty members requires substantial start-up funds. We proposed and received a \$1.2 mil-

lion recurring budget line from the state of Illinois beginning in FY01 based on a proposal using this justification. These funds, supplemented by F&A cost returns, currently provide sufficient resources to make competitive offers to top faculty members and provide the facilities required by those faculty members to establish nationally competitive research programs.

9. MATCHING FUNDS

External agencies sometimes require that part of the cost of a research project be covered by the home institution in order to be eligible for consideration. For example, many National Science Foundation (NSF) equipment grant programs require that 30–50 percent of the cost be covered by the university. Even if not required, matching funds can enhance the likelihood of successful funding as this a) is evidence of institutional commitment and endorsement of the project and reflects institutional confidence in the researchers, and b) allows the resources of the agency to be spread over a greater number of projects. In recognition of the importance of this type of internal funding, the Chancellor agreed to provide \$300,000 to the OVCR for use as matching funds to SIUC researchers.

The internal matching program increased SIUC's success in a related state program. In 1999, the state of Illinois established a "State Matching Grants Program" for Illinois institutions of higher education, whereby a \$10 million pool of funds was distributed *back* to these institutions relative to their commitments of matching funds on successful federal grant proposals. This program was intended to stimulate increased federal research funds and to improve the research capabilities of universities, both public and private, within the state. In 1999, SIUC's share of this pool was \$40,000, or 0.4 percent. After the Chancellor's investment, however, SIUC's share of the state funds increased to \$280,000 (2.8 percent) in 2000, and later to more than \$320,000 per year.

In addition, SIUC experienced a 32 percent increase in federal R&D expenditures in FY00 as reported by NSF, the first

significant increase for the campus in nearly a decade. This resulted in an increase of fifteen places in our national ranking in this indicator. The impact of this program continues to be felt, as indicated by a 49 percent increase in federal funding in FY02.

10. INTERNAL GRANTS PROGRAMS

ORDA offers several internal competitions for awarding research funding to faculty members and students, but these were rather unfocused and viewed as virtual entitlements by many faculty members. Over the past three years, these programs have been revised to make their purpose more explicit and make the application and review processes more closely approximate those of federal agencies. The primary internal grants program is now entitled “Faculty Seed Grants,” with the purpose of providing “pilot” funds to new faculty members to initiate their research programs and lay the groundwork for securing external funding.

A popular new program is funds for travel. The Graduate School once had money to support faculty travel, but at some point it was distributed to the colleges and then was completely consumed after years of budgetary rescissions. Funds for the new travel program—starting with \$60,000 the first year and now up to \$100,000—are provided by the Chancellor, the Provost, the Vice Chancellor for Institutional Advancement, and the VCR, and enable faculty members and students to attend meetings at which they present research findings and to visit funding agencies.

11. COMMUNITY OF SCIENCE

An essential component of enhancing the research mission was to provide the faculty with ready access to information about funding opportunities. SIUC joined *Community of Science (COS)*, an Internet research funding database service, with ORDA personnel activity promoting its benefits in workshops at departments and colleges. In addition, *COS* profiling is now a condition for faculty members to obtain internal awards. Institutional usage statistics suggest the faculty is using this service more and more.

12. RESEARCH PRODUCTIVITY MEASURES

One indicator of the SIUC administration's low prioritization of research in the 1990s was that annual departmental and college reports no longer required data on research productivity. In late 1999 the OVCR initiated a procedure for reporting data on research productivity in order to calculate such measures for each college. Eight separate measures are evaluated in two general categories with different weightings. In the funded research category, external dollars generated are separated into federal research dollars (highest weight), nonfederal research dollars, and other dollars.

The other general category focuses on research products: number of master's and doctoral degrees awarded, proposals submitted, and books and peer-reviewed publications published. Conversion factors for the measures used in creative disciplines (e.g., art and theater) were developed by those disciplines.

Numerical data in each category are normalized to the number of full-time equivalent faculty members in each unit. The overall assessments provide measures for comparison of relative research productivity among units. These data, along with other productivity measures, can be used to assist in determination of budgetary allocations to units.

13. PARTNERSHIPS AND TECHNOLOGY TRANSFER

The various federal and state programs encouraging economic partnerships are important to all universities, but perhaps more so to institutions like SIUC: We are situated in a relatively impoverished rural region, and the natural partnerships with industry that can be developed in a large-city setting are difficult for us to achieve. Although creating such partnerships was not part of our original strategic plan, we soon realized they were an essential part of enhancing SIUC's research enterprise.

In 1999, SIUC and the city of Carbondale launched the Southern Illinois Research Park at the site of the University's existing business incubator, and in 2001 the OVCR and the Office of Economic and Regional Development (OERD) jointly

proposed to establish a technology commercialization facility at the research park. This proposal, funded by the Illinois Department of Commerce and Community Affairs, established SouthernTECH in 2002.

Another joint venture was a proposal to the National Science Foundation's "Partnerships for Innovation" program to develop fish feed high in omega-3 fatty acids that would not only help southern Illinois' growing aquaculture industry, but also create healthier fish for the consumer. The proposal, developed with SIUC's Fisheries and Aquaculture Center and partner Archer Daniels Midland Company's Animal Health and Nutrition Division, was funded in 2002. Other similar ventures include partnering with the University of Missouri to join a federally recognized Cooperative Ecosystems Studies Unit for the upper Mississippi River valley region and joining the St. Louis (our nearest large city) Regional Commerce and Growth Association, Technology Gateway Alliance, and BioBelt initiative.

SIUC has been characterized by state officials as "very entrepreneurial" and "the economic engine for southern Illinois." As evidence of the University's success in tech transfer activity, the *Chronicle of Higher Education* recently assessed figures collected by the Association of University Technology Managers (AUTM) on various tech transfer measures. According to the July 19, 2002, online issue of the *Chronicle*, SIUC (including the School of Medicine) ranked sixteen out of 117 research universities in the number of inventions disclosed per \$1 million spent on research from grants and contracts and in the top fifty in several other indicators.

14. GRADUATE STUDENTS AND PROGRAMS

Graduate students contribute significantly to research carried out at universities, and therefore the size and quality of the graduate student body strongly influences the level of research productivity generated by the campus. Outstanding faculty researchers strengthen the visibility and quality of graduate programs while at the same time attracting outstanding graduate students.

Graduate student enrollments are significantly influenced by the total number of graduate assistantships (GA) and fellowships available to support students. By 1999, the number of fellowships at SIUC had declined by two-thirds from levels available in 1980, and TA lines eroded by at least 10 percent over the last decade. (Both declines are further evidence of the general decline of research activity during that decade.) In 2000, the Graduate Council expressed concern that the level of GA stipends was a detriment to recruiting efforts. As a result, the Graduate School prepared another request to the state to increase stipend levels for graduate assistants by an average of 10 percent; this proposal is currently pending. It is notable that this proposal was not originally included by the then-Provost among the proposals to be forwarded to the state, but was subsequently included at high priority after intervention by the VCR.

Beginning in 1999, the Graduate School developed several initiatives to assist departments in their recruiting efforts and to increase funds for graduate assistantships and fellowships. These efforts include:

- increasing attendance at regional fairs and visits to individual four-year college campuses within the region;
- assisting departments in identifying and attracting high-quality international students;
- creating a competitive internal grant program in FY01 to assist departments with innovative recruiting initiatives;
- gaining commitments for significant increases in state funds devoted to fellowships;
- initiating fundraising efforts to further increase the pool of funds available here;
- developing plans to request a 10 percent increase in state funds for teaching assistantships to increase the *number* of these lines across campus.

These efforts have paid off since graduate enrollments have increased by roughly 15 percent since 1999. In addition, our increases in external awards have provided increases in research assistantship funds across the campus. These efforts also made it evident that a number of programs needed to take a close look at their recruitment policies. During 2002–03, the VCR and Chancellor funded an external consultant to help departments better focus their programmatic recruiting efforts and develop effective and efficient recruitment strategies.

15. UNDERGRADUATE STUDENTS AND RESEARCH

In 1999, the then-Chancellor of the University introduced a program called the “Chancellor’s Undergraduate Research Awards,” in which a student and faculty mentor developed a proposal for a research project, with a budget of up to \$1500. Twenty were awarded the first year. The next year ORDA took over administration of the program following the same review procedures as its faculty competitions and expanded it into REACH—Research-Enhanced Academic Challenge—featuring an annual poster competition with monetary prizes. In addition, we have applied for a grant from the Ronald E. McNair Postsecondary Achievement Program (U.S. Department of Education) to expand this program to include undergraduates from underrepresented backgrounds, which represent a high proportion of our student population.

In fall 2002, SIUC instituted a new program committing over \$800,000 per year to undergraduate *assistantships*. These assistantships, paying the relatively high rate of \$10/hour for up to 20 hours per week, provide discipline-related work experience to undergraduates. Nearly 200 students filled these positions in fall 2002, many in jobs involving research with faculty members. We believe this program to be unique and one that provides substantial research opportunity for undergraduates.

ASSESSING THE PAST AND PLANNING THE FUTURE

Over the past three years, the research mission of SIUC has been strengthened, in large part due to major changes in the upper-level administration, including creation of the position of Vice Chancellor for Research, but also as a result of strategic planning.

It might be asked, “How were these changes received by the faculty?” Reaction has been mixed, largely by seniority. Some long-time faculty members want to cling to the old image of SIUC as primarily a teaching institution without the demands of doing research. In addition, they voiced some resistance to the new emphasis on Web-based services, such as Community of Science. New junior faculty members and graduate students, however, view Internet and Web-based modes as standard operating procedure and welcome the ready access to information.

While the declines of the 1990s have been reversed, we feel there is still much to be done—much “culture change” yet to be effected—to achieve our objectives. What are our objectives? Under the leadership of the new Chancellor, SIUC has completed a comprehensive planning process culminating in a long-range vision for the campus targeting the year 2019, when the university celebrates its sesquicentennial. This vision, called *Southern at 150*, has established the challenging but exciting goal for SIUC to be among the top seventy-five public research universities in the nation. This vision provides an important basis for refinement of strategic planning in the OVCR and for establishing our own longer-range goals. Some of our major goals are identified below.

1. NEW REVENUE SOURCES

The last two years have seen difficult economic times for the nation and for all of the states. Strategic planning for public universities, whether short- or long-term, must take into consideration the consequences of state income shortfalls. For SIUC, state appropriations have dropped significantly, and it is clear that new revenue sources must be found to provide faculty members and graduate students with a nationally competitive

research work environment. The OVCR will work intensively with the SIU Foundation in order to develop endowments for graduate fellowships, professorships, and the undergraduate research program through the soon-to-be-launched SIUC capital campaign.

2. MAKING TOUGH CHOICES

While the University must energetically seek new sources of revenue, it is also clear that certain initiatives may require resources from internal reallocations. As part of these changes, we must continue to assist development of clear and quantifiable standards for allocation and reallocation of resources based on performance and expectation that are consistent with goals and national standards.

3. LOBBYING

While SIUC grew from a teachers' college to a comprehensive university in the 1970s largely as the result of effective lobbying, in more recent decades people in the state seemed to have little idea that any research was being done south of centrally located University of Illinois at Champaign–Urbana. Government-relations efforts to enhance external research funding were limited, and most successes were the result of initiatives organized at collegiate or center levels. Recently, federal relations have been enhanced by the retention of a leading lobbying firm in Washington. Increases in these activities, perhaps eventually including a direct presence in Washington, will be needed in order to keep pace with the *Southern at 150* strategic goals.

4. INCREASING EXTERNAL AWARDS

Although there are other important measures of university research, research expenditures are generally considered the most reliable single indicator of research competitiveness (Lombardi et al., 2001:22). SIUC is 107 in the latest NSF rankings among public institutions for total R&D expenditures, and even lower in the federal category. To be among the top

seventy-five public institutions, we project that we will need to continue to grow our external awards by double-digit amounts annually. Sustaining this level of growth will in part require additional personnel (faculty members and graduate and postdoctoral students).

We are contracting an external consultant to provide a comprehensive evaluation of the SIUC research enterprise. We hope this will help us to identify areas of weakness as well as to stimulate enhancement of areas of research strength, promote strategic development of new areas of research emphasis and centers, and facilitate interdisciplinary research initiatives and activities that are nationally competitive.

5. INCREASING THE NUMBER OF RESEARCH CENTERS

SIUC has a rich history of research centers and institutes—Wildlife Cooperative, Fisheries, Coal Research, Materials Technology, Archaeological Investigations, an NSF center for Advanced Friction Studies—that have grown to become leading external fund recipients. Much of the work of the centers has been carried out by faculty members who might not otherwise have access to funding connections or facilities. In this way the centers have played an important role in the research transformation of the University.

But during the 1980s and 1990s, a number of research centers disappeared, yet another indication of diminishing emphasis on research. One of our goals is to support and reenergize interdisciplinary and area-studies research through the establishment of new centers.

6. INCREASING GRADUATE ENROLLMENTS

One of the *Southern at 150* goals is to increase graduate enrollment by 50 percent to 6,000 students. To accomplish this we will need to increase teaching assistantship lines through new state appropriations and research assistantship lines via increased external funding. Graduate fellowships will be a priority for the SIUC capital campaign.

We have contracted with Peterson's for a comprehensive graduate student recruiting initiative that we believe will substantially enhance the marketing of our graduate programs. Although not discussed herein, these efforts will also build upon SIUC's traditional commitment to diversity in our graduate programs.

7. UNDERGRADUATE RESEARCH

We intend to increase the scope of our undergraduate research program and integrate it into other programs, such as Honors, Core Curriculum, and assistantships. Undergraduate research experience can be justified on its own merits. However, there continues to be widespread concern about the legitimacy of research as part of the mission of a public university; some even consider the research mission to be a detriment to the undergraduate teaching mission of an institution. How to respond to this criticism? As Rhodes (2001:81) has said, "Institutions have to create some balance in this, not by denying or reducing the value and significance of scholarship but by linking it to effective instruction." Universities must make the connection between research and undergraduate education nearly as seamless as it is for graduate education. Research provides new knowledge and intellectual stimulation that are vitally linked to the educational process. Faculty members who are engaged in cutting-edge research teach their students not only what is in today's textbooks, but what will be in the textbooks of the future.

At SIUC, having even one third of our undergraduates involved in research activities would be a tremendous advance, but this would average nearly ten students per faculty member university-wide; for effective mentoring, a lower ratio is essential. A well-designed and institutionalized program involving graduate students as surrogate mentors can address this issue as well as provide the graduate students with supervisory experience that will enhance their competitiveness and success in later careers. Such a plan is currently being considered by our newly established "Center for Graduate Teaching Excellence." Invol-

ing a significant percentage of our undergraduate students in research activities early in their careers provides them with problem-solving experience that is prized by employers and gains them access to mentoring that will enhance retention of those students. A public university that provides such experience will serve its students and citizenship well.

CONCLUSIONS

In the current economic climate, many mid-level research or aspiring doctoral-category universities may be facing similar situations in which they must make difficult decisions about future directions and where to put limited resources. Unlike top-level research universities, at these institutions a well-developed “culture of research” cannot be assumed and must be created and promoted. We offer the following as strategic elements in our efforts to reinvent SIUC’s research mission:

- **Leadership**

Regardless of what is stated about research in the institution’s mission statement, if it is not strongly, frequently, and publicly reinforced by word and action (i.e., resource allocation) by the highest-level administrators, progress will be limited. Administrators need to make substantial and repeated efforts to promote the benefits of research to Board members, other administrators, legislators, faculty members, and citizens in the community and region.

- **Teamwork**

Our efforts over the last three years would have been for naught if we had not been able to work together as a team, and also to count on individuals and constituencies throughout the campus who shared our goals: new, visionary, and genuinely supportive leadership at many levels of the administration, especially at the top, and

faculty and student groups that recognize the value of research and the benefits that accrue to a successful research community.

- **Communication and Transparency**

For any institutional culture change to occur, the rationale, goals, and methods must be clearly and repeatedly articulated to all constituencies and in various media. Trust can only be built through open communication.

- **It Costs Money!**

A successful research university brings in tens or hundreds of million dollars annually in research and related funding, but it also expends large amounts of money in supporting those endeavors. At SIUC, years of declining budgets and stagnant research funding had left precious little to invest in strengthening the research mission. Considerable energy and creative thinking was expended in creating new sources of revenue to “re-seed” the research mission: consultants for the F&A rate, state money for faculty start-up costs, consultants for graduate recruitment, redistribution of F&A returns, COS membership, and so on. Thus far, the investments are paying off.

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