MAKING RESEARCH PART OF THE PUBLIC AGENDA:

AN ENGAGED UNIVERSITY

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Building a public agenda for the university must begin with undergraduate students. This is true for research as well as teaching and outreach. To invigorate the general education of undergraduates, the University of Missouri has pioneered the integration of teaching and research. The Hesburg Award received by the University in 1997 called particular attention to this strength.

A great deal of the literature regarding student affairs and undergraduate education continues to express concern about the quality of undergraduate education offered at the major research universities. For example, a 1993 report of the Wingspread Group sponsored by the Johnson Foundation focused on the quality of undergraduate education, but its general warning is also applicable to the research role of public universities. The following warnings emanated from the conference:

- A disturbing and dangerous mismatch exists between what American society needs of higher education and what it is receiving.

- The American imperative for the 21st century is that society must hold higher education to much higher expectations or risk national decline.

In most of our states, our higher education coordinating bodies are promoting the concept of a “seamless web of public education." In doing so, the research role of our major public research universities becomes a singular responsibility of the institutions represented at this conference. In order to be successful, research must be made part of the public agenda. This can be achieved most effectively when we:

1. See research as part of an integrated educational whole. It begins with undergraduate students and, indeed, must incorporate K-12

linkages between the university and primary and secondary education.

2. Develop a culture of openness, sharing, listening, and willingness to be convinced by legislators, public agencies, and interest groups. That culture of openness must be maintained between and among campus administrators and research scientists, among scientists themselves, and with the public. The importance of sharing data on the university with key stakeholders, particularly legislators, cannot be over emphasized.

3. Create a sense of importance and urgency in individual researchers and research teams. It is more fun to be on the cutting edge, to share problems with sympathetic colleagues, and to produce quality results. We must celebrate the successes on our campuses and with each other. Scientists must be encouraged to search for the competitive edge, for that frontier of knowledge that is ultimately the greatest reward for researchers. This can be illustrated in so many ways. For example, our Dean of Arts and Sciences, at the major awards banquet for that college on our campus, cited the scientific accomplishments of Dr. Jerry Atwood, the Chair of our Chemistry Department, who has recently created the smallest molecule yet known. This organic molecule has an empty space within it with potential applications for medicine, organic wiring for information technology, and unlimited implications in a vivid imagination. Dean Schwartz called attention to this significant accomplishment, which had already been featured on the cover of *Science Magazine;* and pointed out its implications for targeted medical treatments, biological information systems, etc. He then unveiled a rendition of this molecule painted by a local artist. This was displayed before a crowd of over 500 people and illustrated a true celebration of knowledge.

As we seek to make research part of the public agenda, it may be useful to recognize that we are now into a third generation approach for building research systems on most of our campuses. Within this context, the first generation consisted of hiring good scientists, the best scholars, and providing them with the best support and facilities possible, including a “creative” work setting, leaving them alone, and watching them prosper. We found that, indeed, this formula led to the prospering of many scientists, but with less benefit to society than expected.

A second generation approach incorporated a more systematic quantification of the relative costs of individual projects, monitoring progress against specified objectives, particularly in the private sector. We found that each project may have great merit under this scenario but

the collective effort wasn't always that attractive. Perhaps the most important shortcoming of this kind of research was in the field of agriculture and natural resources wherein production-oriented research failed to capture the social and environmental externalities associated with agricultural practices. This has become particularly important today with our national and global concern about water quality and other environmental challenges.

A third generation approach characterizes much of what we are doing, or seeking to promote, at the University of Missouri and, I suspect, in many other universities. A major goal is to design a purposeful and strategic web of interlocking research activities, focusing on interdisciplinary and multidisciplinary approaches to key scientific issues. Our challenge is to design a process, which itself is exciting, and leads to innovative and invigorating research findings.

This third generation research model challenges traditional approaches and requires constant monitoring and adjustments to achieve scientific breakthroughs. The ancient Greek philosopher, Heraclitus, said, "You cannot step twice into the same river; for fresh waters are ever flowing in upon you." Higher education and research incorporates processes of continual change. Our processes for faculty development must keep up with these changes and promote intellectual growth and creativity as well as instill new technical skills in our researchers.

Burton Clark identified five critical characteristics of an innovative university poised to address the challenges of the 21st century. These characteristics include the following:

- An institutional sense of direction
- Entrepreneurship
- Reconciliation of administrative and professional values
- The integration of research, teaching, and extension/outreach
- Diversified institutional funding

As universities become more innovative, a number of assumptions and "sacred precepts" of the academy will be called into question. Among these are the following:

1. A changing concept of tenure and increasing diversity of types of appointments. Only 45% of faculty at the Harvard Business School are in tenure or tenure-track positions. A full 30% of the faculty on the University of Missouri campus are in non-regular (i.e. non-tenure track) positions. Public accountability and public perceptions continue to challenge the basic structure of higher education and require reassessment of faculty responsibilities. The question

arises as to whether this will impede the quality of our faculty and the role of doctoral faculty on our campuses.

Management processes in higher education become more complex as the rights and responsibilities among regular and non-regular faculty are not shared evenly. Jealousies arise about preferential access to resources, and the overhead burden of committees and governance tend to be more concentrated on regular tenure-track faculty.

2. The use of internal versus external resources becomes more complex. Internal seed capital is often used to leverage outside funding. We are now initiating a comprehensive campaign to generate additional private funds to supplement public funds, grants and contracts, and other sources of funding. We are undertaking a strategic planning process to ensure that we develop an optimal mix of resources to achieve our mission.

3. We must be able to encourage appropriate partnerships and linkages with the private sector. Industry links must be consistent with university values and mission

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4. Intellectual property rights are being addressed once again, and conflicts will continue to emerge under the complex relationships currently being developed in most research universities.

5. Continuing challenges arise over the control of indirect cost returns. Major public research universities have the responsibility to be accountable to the public to show that we care about the public trust and that we are responsive to the needs of the state and federal supporters of our research role.

As research becomes increasingly important on the public agenda, the University's responsibilities will grow to ensure that the needs of the public are met. University administrators and researchers will also face public scrutiny to ensure that our responsibilities to society are effectively carried out. We all should welcome that challenge, and grow stronger as we respond.

References

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