

The University of Michigan

Senate Assembly

Minutes of Regular Meeting of 18 November 1985

ATTENDANCE

Present: Bailey, Bassett, Beutler, Bissell, Brewer, Briggs, Boyd, Checkoway, Chudacoff, Comninou, Cornell, Thomson, Durrance, Eaton, Glover, Green, Vinh, Han, Hanks, Kalisch, Kusnerz, Larson, Lavoie, Lehmann, Lewis, Lougee, Loup, Ard, Manus, McCarus, McClamroch, Meyer, Miller, Moerman, Moran, Mosher, Nadelman, Payne, Pierce, Radine, Reed, Rizki, Marc Ross, Muriel Ross, Rutledge, Sanders, Olson, Schteingart, Sears, Stapp, Stebbins, Taylor, Warschausky, Wiseman, Yocum

Absent: Ascione, Burdi, Carnahan, Easley, English, Eschman, Farley, Herbert, Howe, Hudson, Jacobs, Kahn, Lorey, Lusk, Malvin, Margolis, Mermier, Oleinick, Olsen, Schauer, Snyder, Arnett, Todor, White, Zelenock, Zweifler

Professor Robert Green convened the meeting at 3:25 p.m.

MINUTES

The minutes of 28 October 1985 were approved as written.

MATTERS ARISING

Vice President Frye has announced increases in allocations to units for the present and next FY's to offset increased costs of the new telephone service. The Financial Affairs Committee will discuss the new system at its December meeting.

ANNOUNCEMENTS

Professor Green encouraged members to return the CESF survey as soon as possible. The SACUA Office has replacement copies for lost or misplaced forms.

REPORTS FROM THE SCHOOLS AND COLLEGES

Professor Green stated that reports will be a regular agenda item at each Assembly meeting. Reports are designed as information items but questions may also arise.

1. Report from LSA.

Professor Nadelman reported on two items of broad interest in the college. The first of these was consideration of an Executive Committee proposal whereby lecturers would be organized into a non-tenure track group distinct from the faculty. At its monthly meeting the faculty voted to continue discussing the proposal. The second matter concerned the Curriculum Committee's change in posture from reactive to proactive. The Committee now hopes to initiate action and to provide evaluation. It is currently considering academic credit for ROTC courses, advance placement credit, computer aided instruction, interdisciplinary studies, foreign language requirements and distribution requirements.

Professor Han inquired about sentiment about University courses and noted that he does not want to be evaluated by a curriculum committee. Professor Nadelman noted that the LSA Committee most likely pertains exclusively to LSA courses and that a letter to the committee would be helpful to it. Professor Olson questioned limitations LSA places on courses taken in other units. Professor Bailey noted that, in part, academic credit was withdrawn for ROTC courses because of the lack of evaluation of such courses by the Curriculum Committee. Professor Nadelman stated that these issues along with who teaches ROTC courses, what the course content is and who has final authority are the main issues being discussed.

Professor Chudacoff wondered about ramifications the career lecturer proposal might have for the rest of the University. Professor Green replied that its adoption by LSA would have an impact on other schools and colleges who are interested in similar programs. He also noted the kinship between this and the recent proposal for a tenure track for clinical faculty. Some parts of the LSA proposal can be adopted by LSA without reference to other bodies while some aspects could be adopted only as a result of Regental action. Professor Comninou reported that the Tenure Committee is considering the matter and hopes to forward a statement to SACUA shortly.

2. Report from the School of Education.

Professor Miller reported active faculty involvement in Education School meetings. The major review of the School has been completed and implementation of a 40% budget cut is well under way. Curricular re-design has resulted in 13 programs being reduced to 4 and 485 courses offered reduced

to 170 courses offered. The number of faculty members has decreased from 75 to 55 with the goal set at 45 members on staff. As a result of these changes the curriculum is smaller and tighter. Dean Berger recently gave a progress report to the Regents and some students also addressed the impact changes have had on their education. Since those statements were made the School has moved to open up some new sections of basic courses.

Professor Marc Ross inquired about a profile of faculty who had left the school. Professor Miller stated that the picture was mixed. Professor Comninou asked about the legality of special departure arrangements especially when these are made for individuals and are not available to everyone in a group. She wondered if this had resulted in extra benefits for some people or had been discriminatory. Professor Miller agreed that there were issues of legality and equity but since the negotiations were carried on privately with individuals it is difficult to judge their results.

Professor McCarus referred to the personal hardship accompanying such change and asked how many faculty members have not yet been placed. Professor Miller said he was not aware of any such cases although they may exist. Currently, much positive energy is being invested into the school and there is awareness of the personal hardship such changes have brought to faculty members, some of whom are departing while others are staying. Professor Green drew attention to the Faculty Advisory Panel appointed by SACUA to offer counsel and advice to faculty on such matters. Professor Beutler noted efforts in other schools and colleges encouraging some faculty members to retire early. This raises the question of possible coercion. It is important to know if, in downsizing Education, pressures were exerted on individuals. Professor Miller replied that when people are identified as candidates for departure, it introduces pressures which need to be monitored, and SACUA involvement is very important in this. Some cases continue in negotiation and presumably include some faculty members who are not inclined to leave early. Professor Lehmann noted that Professor Beutler's question is a hard one to answer. Because negotiations are conducted privately between dean and faculty member, details are not known. He suggested, however, that the pressure is real whether the faculty member remains or departs. Professor Green concluded discussion by noting that when complete, the process may reveal answers to some of these questions.

3. Report from the School of Social Work.

Professor Beth Reed conveyed sentiments from the Social Work faculty meeting critical of SACUA's acceptance of the role of an executive search firm in the search for a new Vice President for Academic Affairs. Also, the faculty urged all four ad hoc theme committees (Opportunities and Obligations) to consider how to strengthen faculty governance the impact of which they believe has eroded. Green replied to the former by noting that the use of a

search firm was one of several possibilities President Shapiro discussed with SACUA; and although SACUA did not quite agree with the route taken, it recognized that the decision was the President's to make.

REMARKS BY LINDA S. WILSON, VICE PRESIDENT FOR RESEARCH

Vice President Wilson said she appreciated the opportunity to discuss issues which emerge out of federal science policy because of the impact that policy has now and can have in the future. In particular today she chose to focus on federal science policy and graduate education.

The critical questions to be considered are the assurance of the human capital required for science and technology leadership, the nature of advanced education, the quantity and quality of students, institutional capacity and balance, access and financing. Several issues illustrate four types of concerns in the graduate education/research enterprise. These concerns relate to resources, structure, governance and leadership.

First is the issue of the nature and extent of financial support for graduate students and the federal role in support of graduate education. In her view the present array of mechanisms to support graduate students is unstable. The recent period of uncertainty regarding eligibility for support and the nature and amount of support probably has had an adverse effect on recruitment especially of the most talented and the most economically disadvantaged students. She noted the need to resolve the public policy questions which surround graduate education support and so send out an unambiguous signal.

She commented that the emphasis on research assistantships for externally sponsored projects, instead of fellowships, as a major vehicle for support has shifted the burden of investment from the government or institution to the individual principal investigator. She questioned the reasonableness of this shift especially for young faculty members for whom the appeal of the academic environment may diminish if the burden is carried without relief. The added pressure may also encourage choices for economic reasons and reduce opportunities for graduate students.

The second issue is the continuing dilemma of deteriorating and obsolete equipment and facilities in universities. These inadequacies affect not only the quality and productivity of research in graduate education, but also the choice and design of research problems undertaken, the nature and extent of collaboration and interaction, the responsiveness of universities to regional and national interests in the transfer of technology to industry, and environmental and personal safety. Failure in this regard diminishes the nation's capacity for discovery and weakens the scientific and technological leadership upon which its security and welfare depend.

The responsibility for addressing this problem is shared. The absence of federal participation in the support of facilities conflicts with national objectives for a strong science and technology base. Resources for the conduct of research and funds for facilities renewal are needed for a responsibly managed research enterprise. There are some hopeful signs but the facilities problem is now so large that its redress without additional support may be impossible.

The third issue is scientific communication. The freedom of scientific inquiry and communication of its results have together been a core principle for U.S. universities. The continuing struggles at the national level over this complex issue are straining the government-university relationship. In part the issue has reemerged recently because of the changing nature of scientific progress. Previously, fundamental research was more easily separable from applied research/development activities. Now, in some fields the distinction has blurred and frequent interaction across those imaginary boundaries is necessary for successful development. The increasing dependence of the nation's defense efforts on scientific and technological innovations rather than on numerical human resources also changes the picture. It makes many more areas of science potentially relevant to national security. Coupled with the more general international technology race for economic competitiveness these changes raise the stakes in the balance of the conflicting principles of freedom of scientific communication and preservation of national interests.

Although the stakes may be higher, the flow of information is almost impossible to stem and at the same time preserve both the fundamental values of this country and its scientific and technological leadership. It is risky to preserve the free exchange, but even riskier to limit the freedom of exchange of fundamental knowledge.

Universities need to recognize that some research is not fundamental and may require handling in different terms or not at all. The development of special arrangements for the acceptance of some limits on exchange may be necessary and prudent. What is then required is the clear distinction and separation of that research from graduate education, and the limitation of the extent to which such research is done in the campus environment.

The fourth issue is the change in patterns of support for science, both the mechanisms of support and the identity and objectives of the sponsors. The individual project grant has long been the dominant form of support and well-suited for much basic research. It fit well within the University environment since it gave freedom to the individual researcher and flexibility to the sponsor. As science has progressed, however, some fields have come to require larger team efforts, and with these come complex organization and management issues, which, in the individual investigator grant, are muted.

Some of this reflects a shift of objectives towards more focused/targeted research with immediate relevance and with potential economic impact in industry. Some is a reflection of the nature of Big Science which requires large, expensive facilities, and a collection of technicians and machine builders to mount the experiments designed by scientists.

The change in character of the work is reflected in the mechanisms of support and has implications for University research and graduate education. The research training experience of graduate students involved in large team projects can be substantially different from the traditional investigator-apprentice model which was designed to instruct, test and emphasize individual initiative and creativity. Thus, we need to reexamine the way that research fits in the design of graduate programs, rethink the objectives of the curriculum and make adjustments to assure that these can be met. New initiatives such as engineering research centers should stimulate this reflection.

Perhaps more important is that the sponsors of research are also shifting, resulting in increased amounts of Department of Defense-supported research and Industrially-supported research. Industrially-supported research represents only about 8% of the total research effort of universities. But it was only half of that just a few years ago, and since it is concentrated in just a few University departments, the potential for significant influence on the focus of research efforts is real.

The potential for distortion of a given department's research and research training direction by the increased flow of DoD investment is also noteworthy, especially in view of the anticipated expansion of research under the Strategic Defense Initiative. Some of the work to be supported will differ not at all from research supported by the National Science Foundation in its effect locally. The terms and conditions will be all but indistinguishable. Other work sponsored by DoD may not have these easily accepted characteristics.

The challenge to the University is to be both selective and responsive, attending to the objectives of university research for the development of students and the development of knowledge as well as for the needs of the sponsors. It is especially important that respective grants and contracts represent genuine agreement of the parties (both institutionally and individually) about scope and terms.

The fifth issue concerns institutional balance. In earlier years, the need for institutional balance was explicitly recognized and provided for through a modest federal support program. The problem of balance is particularly acute today because of three factors:

- a) escalation of research costs,

- b) severe constraints on the non-defense research budget while the defense research budget expands,
- c) sponsors' demands for increasing amounts of cost-sharing by the universities.

Because universities are responsible for addressing the long-term, they must maintain their capacity for research and graduate education across all fields of science and engineering while sustaining humanities and arts as well. The waxing and waning of research emphases of external sponsors are an overlay on that basic function. The flow of resources for research needs to take this into account. Furthermore, universities have been the primary source of on-going support for scholarship in the arts and humanities and for small-scale social science research. That responsibility has not and probably will not be assumed by others. Universities must not abandon their role here. The increased claims for substantial cost-sharing, however, represent a challenge to institutional balance.

This issue is perhaps the most difficult of all because it complicates federal or university responses to constraints on resources. To preserve the science and engineering base on which all initiatives now and in the future may draw is of paramount importance. Austere budgets mean that we must assure that the work done across the spectrum is of the highest quality. But there must be sufficient resources to sustain the entire spectrum. It is not at all clear that we are clever enough to make the choices involved. The difficulty of this task suggests that we (as a nation) are trying to operate much too close to the margin.

Thus, business as usual may not be possible in the future. One solution is a greater Federal (or Federal, State, industry and private) investment in university-based research and graduate education. An international comparison with Japan and West Germany would indicate that the U.S. lags in investment in R&D as a function of the GNP and lags seriously in the investment in civilian R&D.

If resources remain so constrained, and especially if they are focused on only a few areas, there will probably have to be major structural responses, not incremental adjustments. Such changes may include specialization among universities, stratification of universities, and assigning areas of responsibilities among those who undertake research.

At least initially the resource constraints may make certain kinds of human and physical resource sharing necessary. The potential need for major redesign of graduate education will surely follow and the consequences would be a mixture of good and bad. One disadvantage might be the substantial reduction of what has been a significant asset in this country, namely, the

diversity of higher education institutions. The sharing activities will almost inevitably lead to some homogenization. Other forms of rationing may also be necessary and must consider carefully the extent to which creative endeavors inherently must provide wide room for exploration. To demand a process which maximizes efficiency may very well maximize mediocrity as well.

Numerous signs indicate that graduate education and research in the U.S. are changing. New technological developments are giving new tools and windows for the scientific frontier. Universities are exploring new alliances and partnerships with industry and state governments, and their understanding of their mission is evolving to incorporate an even more complex portfolio. Scientific advances at the interfaces of the traditional disciplines are stimulating new fields.

For those responsible for graduate education and research policy in universities in this period of ferment, it first means that the issues surrounding graduate education and research must be faced jointly within the University and as a high priority. Whether the mechanism for doing so involves a coalescing of responsibilities into a single organizational unit or the development of mechanisms for close and frequent interaction is not the issue. Either approach can and does work, given a commitment for collaboration.

Secondly, we need to remember the basic principles to be served and preserved. These could include:

- * Continuity of excellence in research and scholarship in all fields of knowledge,
- * Assurance of opportunity regardless of race, sex, or economic circumstances,
- * Commitment to peer review (i.e., technical merit reviewed by the technically competent),
- * Freedom of inquiry, scientific communication and individual choice of field of study.

Given such basic principles, we can reexamine the structural features of our systems of science support and graduate education. The pluralistic system has served well but the question now is whether the degree of pluralism is more or less appropriate for a period of tighter margins. Any future system will probably have a robust design which will give latitude for various changes without starting over from scratch. We can probably also count on much of the change being introduced incrementally, barring some major catastrophe or outside stimulus (such as Sputnik).

We need to think carefully about the closer interdependence of the government-university-industry sectors. The benefits of these tighter connections are quite real. But there is a loss as well because their previous relative independence served as part of our overall system of checks and balances.

Thirdly, we need to recognize the role Vice Presidents for Research and Graduate Deans play within their universities, especially the shared responsibility for leadership, and cannot underestimate the shared role to be played by faculty and deans in shaping the future direction. An essential function of the central leadership (graduate deans and vice presidents for research) is the monitoring and analysis of the changes in the overall context. This can be buttressed with other activities such as stimulating discussion and planning developments on intersecting frontiers, focusing attention on cross-cutting issues such as ethics and responsibility in research and graduate education, and the development of supportive policies. These campus officials can "see to the interfaces", removing artificial barriers, stimulating interconnections, and assuring that the University remains a vital and fertile place.

Finally we may need to reconsider our basic social contract for science which is 40 years old. We may need to make it more widely understood so that the basic assumptions and expectations are more widely recognized and shared. We might also begin a serious consideration of the University's role in seeking alternatives to a science and technological race. The pace of science and technology in pursuit of international competition may itself be a part of the problem. For too long we have perhaps neglected efforts to establish better bases for international cooperation and collaboration, bases other than competition. Universities have the capacity to explore other strategies and to develop and use other skills for international understanding and interaction, and must not neglect this area. Indeed, perhaps this is the new frontier.

Responding to questions, Vice President Wilson stated that Congressional involvement in awarding grants is a very serious problem. High costs, especially due to the deficit in facilities, put great pressures on institutions to ignore the established funding routes in order to meet their own needs. To date the U of M has avoided such "end runs" and continues to work with influential groups to stem this trend.

Corporations currently invest \$40 billion in educating their employees. To some extent their effort fills a gap between what universities do in preparing graduates and what corporations need. Rather than view this involvement as a threat, universities should see it as an opportunity to stimulate review of their own efforts. It is helpful for universities to examine what they do better than any other organization, where they want

emphases to be and how they can achieve their objectives while not compromising their values.

With respect to the openness and value of information she stated that universities have already had to compromise. Several issues are involved and all are ripe for discussion.

NEW BUSINESS

There was none.

OLD BUSINESS

There was none.

ADJOURNMENT

The meeting adjourned at 5:04 p.m.

Respectfully submitted,



Patricia B. Yocum
Senate Secretary