Likely Impact of the Reorganization Proposal on Research at UMass/Amherst Now and in the Future.

A Preliminary Report of the Research Council
To
The Faculty Senate

Submitted on Behalf of the Research Council by
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On February 6th, several hours after its February meeting, the Research Council received a request from the Rules Committee that the Research Council, in addition to making whatever comments it deems appropriate, provide a preliminary report by March 6, 2009 on the following question:

Does the Reorganization Proposal position the campus appropriately for success in research, now and as we emerge from the recession?

Since the Chancellor's reorganization plan was first published, the Reorganization Task Force has been considering a variety of alternative plans. Since responding to what has been and still is a moving target is difficult, the Research Council has taken a somewhat different approach to this task. Rather than reacting to specific proposals involving which departments are put in which unit and how units might be combined, the Research Council has focused on articulating the conditions that would minimize the negative impact of various configurations and maximize the potential for maintaining and enhancing the sponsored research activities on the Amherst campus.

Charge to Research Council Members

Research Council members were sent the following suggestions to help structure thinking about the ways in which various configurations would affect the research community.

The probability of a constructive outcome from reorganization will be determined by a number of factors, some of which are listed below as differences that need to be managed. In addition, there will be conditions of leadership, management, and resources necessary to produce positive outcomes. Any new Schools or Colleges formed from new configurations or combinations of departments will have to address differences among the constituent departments How well they do this will be a prime determinant of the impact on research capacity and potential of new configurations.

1. Differences in sponsored funding characteristics: - What are trends in funding priorities for a given area of research? Contrast typical awards for individuals or small groups of 2-3 faculty in HFA, for example, with areas where funding is for larger groups of faculty collaborating across disciplinary lines. In addition, what areas of research are growing, and what organizational structure will best position the campus to respond?

2. Differences in priority of teaching, service, and research: What do different emphases in these areas mean for decisions about personnel and resource allocation? If there are substantial differences within a newly configured School or College, what impacts will that have on new faculty lines, for example? What might be the impact of differences in profiles expected of junior and senior faculty members within a newly configured School or College?

3. Differences in valuation of kinds of research: What impact will result from differences about what constitutes scholarship? This includes judgments about quality, scholarliness, applied vs. pure research, service activities as research, etc.

4. Differences in high/low consensus nature of research endeavor in different departments: Disciplines and departments differ widely in the range of research questions and methods that are considered legitimate. Some fields have many approaches; others have fairly narrowly defined research methods. What impact will wide differences in research consensus have in a new School or College?

5. Differences resource dependence: Departments and existing Schools and Colleges differ widely in both current and potential amounts of sponsored research. How would reorganization affect them? Widely disparate levels of outside funding between sub-units create substantial challenges in managing the allocation of resources. Wealthier units fear dilution of resources to support others. Poorer units feel they are being discriminated against.

6. Differences in social capital: Within established units, individuals and programs have known levels of credibility, influence, and access to decision makers. In new units, there might be substantial inherited discrepancies in social capital that would undermine some and privilege others.
Each of these sets of differences can have positive or negative influence on the research endeavor. The key questions include: What conditions are necessary to have the positive outweigh the negative? How likely are those conditions to be present? Will long-term benefits be sufficient to outweigh the short-term costs? And, will the net effect be positive incentives at all levels to increase sponsored research efforts? Many RC members responded with ideas and comments and the RC received comments from other faculty members and administrators. The impact of the reorganization was discussed at the March 6th meeting of the Council where a preliminary draft of the RC report was circulated and reviewed. This report presents some of the major issues raised and summarizes the key points arising from these discussions.

Issues Raised by the Research Council

Creating Larger Units

Many comments focused on the bureaucratic complexities that could result from reorganization. Sponsored research involves a process of identifying funding opportunities, putting together staff and resources needed to address the criteria of the funders, writing proposals that include both carefully crafted technical responses and matching budgets, getting approvals needed for the Internal Processing Form and the Memorandum of Understanding, submitting the proposals to OGCA and responding to their concerns which often require some modification to the budget, and finally getting the proposals sent to the funding agency by a deadline which is precise and rigid. Late proposals are disqualified.

This process requires a series of approval signatures, beginning with the Principal Investigators (PIs), then Department Chairs, then Deans, and sometimes approvals from the Vice Chancellor for Research if the proposal requires cost sharing or negotiations about indirect costs. Larger units formed in any reorganization scheme have the potential to add layers to this approval and signature process, with each layer potentially involving explanations, negotiations, and resolution of conflicts. Experienced PIs know how difficult this process can be, particularly when there are significant differences of priorities. All of this has to take place under short time deadlines while the PI needs to be focusing on the technical and budget components of the proposal.

The potential for positive outcomes from combining units to create larger units has several aspects.

Social Science Faculty Member - *The costs, in terms of faculty and staff time needed to work across current boundaries, are significant expenses that are difficult to measure or to see in operating expenses. They include negotiations with administrators in different colleges who use slightly different rules and procedures. They include multiple signatures on far too many forms and documents to process paperwork. They include a byzantine system that is not clear to most faculty or administrators producing rework. They include lost time that could be used for other, more productive activities. And, for the future, they include many missed opportunities and projects that are never carried out because the coordination and transaction costs are simply too high.*

Social Science Faculty Member *- …[putting] many research departments under one administrative system which would facilitate and lower the coordination costs of working across what are now college-level boundaries for IPFs, other forms that require multiple signatures and negotiation with deans, cross-listed courses, deployment of faculty for courses and research projects, etc. These costs are currently hidden in the time and effort required to walk paper forms from one unit to another, to negotiate and explain boundary-spanning research and projects to multiple decision makers.*

Social Science Faculty Member *- … the positive would outweigh the negative if support for research increases in the new Colleges -- more people to help with proposal submissions, College-level seed money, College-level support for Centers that encourage research.* [However,] *This is unlikely due to the cuts Deans will be making.*

However, in the short-term there is the risk that these costs will increase.

Science Faculty Member *- The short-term costs are considerable. It will take quite a bit of faculty time to make the reorganizations work, and that is a cost that is not included in the calculation* [of savings.] *Eventually, the faculty will adapt (figure out what's important and generate work-arounds for the rest), but for a year or two, the cost to research will be the loss of grant proposals, publications etc. that did not get written while the faculty figure out the rules.*

Staffing to support research varies widely in amount and quality across departments. How can reorganization be structured so it doesn't weaken departments with strong capability, while working to increase the capability of departments with weaker support?

School of Nursing Faculty Member - *One potentially major consequence of reorganization on the research mission is the anticipated changes in staff to reduce redundancy. Not all research staff are created equal. Departments like Computer Science which has a very experienced and qualified staff to help faculty turn out proposals may end up with a staff less able to help in the process. Meanwhile other departments might benefit from changes in staff because their research endeavor is presently less developed.*

Thinking more systemically about the long-term viability of units and establishing new ways of working together will be important.

Kinesiology Faculty Member *- Any change in organizational structure should be able to* ***withstand changes in leadership.*** *Universities, including UMass-Amherst, experience*

frequent turnover of people in upper administration. A well-designed structure will be sufficiently solid AND flexible to provide continuity and research excellence in the face of administrative upheaval (change).
The capacity for electronic communication has removed many barriers to collaborations across academic units, particularly for research. This trend should be encouraged by the establishment of "research channels" between colleges and schools that go further in facilitating cross-unit work. By doing so, the placement of individual departments in one college or another will not dictate or limit the type or scope of research that is done.

What Factors Drive Collaboration across Departments and Schools?

Several members commented on what might be called the fallacy of the juxtapositional synergy argument, if interpreted to mean that, just because departments are housed together either physically or organizationally, they will work effectively. Especially in this age of instant, worldwide, electronic communications, the older technology of placing people in close physical proximity is no longer a pre-requisite and may have little impact on building new collaborative efforts across disciplines. Typical comments were:

> ***Science Faculty Member*** *- I think that the "collaborations will be facilitated" argument is overplayed. In my experience, successful collaborations happen because the individuals involved want them to.*

> ***Arts Faculty Member*** *- As for interdisciplinary collaboration, about which I know quite a bit, I'm not so sure that grouping people by college promotes it. I study medieval English literature, and my research has prompted me to consult with art historians, historians, classicists, foreign language scholars, and religious studies experts. I've even sought help from economists. But my research is the driving force behind these on- and off-campus connections; it doesn't come from which particular departments are in my college or in my building. Putting me in the same college as, say, the Journalism department will never prompt a collaboration*

However, organizational proximity influences power relationships, access to decision-makers, claims on shared resources, and access to approvals needed to support research. Changes in organizational structure will likely work to the short-term disadvantage of most units, but in the long-run, new hierarchies of power and access will emerge which privilege some units over others. The impact on research will depend on how the most productive units fare in the shuffling of the hierarchies which, in turn, will be influenced by the dominant values and priorities of the leadership of the new units.

Differences in Types of Research Appropriate to Sub-units

Many comments focused on the differences in the research cultures of departments embedded in larger disciplinary cultures. While one of the goals of larger units is to facilitate crossdisciplinary work, the challenge of combining disparate research philosophies and methods in a single unit will require exceptional quality leadership to avoid developing an ongoing, entrenched conflict within the new unit.

Dean of the Graduate School *– [paraphrased from comment in RC meeting]. What is the 21st century future for 20th century service departments? What is going to happen to the Land Grant mission of the university if departments that focus primarily on providing service are put in units that prioritize academic research? Specifically, how will the departments in NRE like forestry, etc. fare in a NSM/NRE merger? Will one model of research dominate to the detriment of another?*

NRE Faculty Member *- A primary concern for uniting NRE and NSM is that the unique applied research and outreach activities inherent to NRE will lose relevance in the new college structure, or perhaps be abandoned altogether. These differences between applied and basic research will be even further contrasted when considering the merger of NSM and NRE to include departments that are not traditionally viewed as Life Sciences. My fear is that departments such as Plant, Soil, and Insect Sciences which has a significant obligatory outreach mission might find itself in the same college as departments which do not recognize or appreciate this aspect of their mission. … Moreover, retaining the applied research and training identity that has been fundamental to this University since its inception is critically dependent on keeping Life Scientists together as a cohort with their own identity and leadership.*

Science Faculty Member - *I am in Chemistry, which is part of NSM and proposed to be included in the new CNS College. On the positive side, it is clear that the Chancellor has heeded the advice that physical and life sciences be kept together. In the same spirit, I can see benefit from having microbiology and veterinary and Animal Sciences join Biochemistry, Chemistry and Biology etc. in the new CNS. It is more difficult to see connections between these departments and the Stockbridge School of Agriculture and allied depts. (e.g., food science, Plant, soil and Insect Sciences, Natural resources conservation). This is not a value judgment. The SSA and allied departments have a huge service component that is completely foreign to NSM.*

NSM Faculty Member *- I feel that UMass has benefited greatly from its non-traditional organization into colleges that share a research culture and methodology. Computer Science has blossomed under the support it received with such an organization and fared much better than many computer science departments housed in Colleges of Arts and Sciences or Colleges of Engineering, since the former is too large to be supportive and the latter has a different emphasis and culture. … we are housed in a college that understands our research methodology and has, for the most part, been able to be flexible in responding to our needs.*

Graduate Student Representative – [The most desirable plan it seems to me is]… *to combine more synergistic units (NSM and NRE), and keep less synergistic units (SBS and HFA) separate and distinct. My sense is that unit identities could be kept more intact and competition between units of incompatible values and priorities could be minimized under the Chancellor's modified model.*

Impact on Centers and Institutes

The many Centers and Institutes on campus are important components of the research capability of the university. Many of them have strong track records of obtaining sponsored research and are highly visible externally. Reorganization will likely involve moving some of them to new organizational homes, with unknown consequences for their future capability. If their new home recognizes and values the kind of research they do, then the move will either help maintain or possibly even increase their potential. If the move results in a taxing of their resources to support other components of the unit, then it could reduce their effectiveness.

> ***Kinesiology Faculty Member -*** *Care must be taken to ensure that* ***current, highly-functioning*** *units in emerging research areas are not jeopardized by structural changes. For example, the Center for Research on Families has significantly enhanced the scope of the research mission of the campus. It is a multidisciplinary unit that includes researchers from nine departments on campus. The center is housed currently in SBS, and attracts funding from NIH, NSF and multiple foundations and private organizations. In considering reorganization of the current academic structure, thought must be given to questions such as: How would a new structure affect where a research center is housed, and the allocation of its resources? How will its "location" affect its mission, its potential to garner additional resources, and the overall research enterprise on campus? One solution would be to house these interdisciplinary centers "above" the level of a single college or school, and give them the direct support of the research administration on campus.*
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> ***Social Science Faculty Member*** *- If SBS is kept separate, as your plan A and plan B promise, then I am not so worried about a home for the Center for Research on the Family (CRF). I guess it still depends on what happens to Psychology. There may be other Centers that are supported by a current College that may be threatened by mergers. For example, the Institute for Global Health (IGH) may suffer or grow if Nursing is pooled with Public Health.*
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> ***Social Science Faculty Member*** *- Some arts and sciences colleges use a set of functional associate deans (budget, HR, undergrad education, etc) and then locate intellectual coherence in several centers, institutes, programs and cross-cutting faculty committees and groups. Others use a set of associate deans of divisions preserving a divisional structure within the college. But in these divisional structures as well, a strong set of cross-cutting, horizontal groups, offices, roles, etc are necessary to foster communication, shared purpose, etc.*

Strategies to Enhance the Research Mission of the University

Returning to the issues set out at the beginning of this report, the Research Council feels that, regardless of the details of the new configuration, in order to maintain or increase the capability for research, the new units need to establish mechanisms and procedures to realize the potential research benefits of the reorganization. What is striking at the moment is the relative scarcity of such mechanisms in many of the existing departments, schools and colleges.

In what follows a series of suggested actions are put forward.\

Scanning the Environment – Colleges, Schools and Departments would benefit from creating structures whose task is to scan the environment of sponsoring agencies and create a map of both current and emerging priorities in their field. Ideally, we would already have such information and would use it to inform the process of reorganization, but we have little systematic information beyond the perceptions of individuals who are active in various fields of research. One faculty member suggested that:

> ***School of Public Health and Health Science Faculty Member*** *- change in organizational structure should be taken with an eye toward* ***emerging opportunities.*** *Several of these opportunities have been identified by the current Obama administration, including but not limited to health, sustainable energy, and education. Without a doubt, these will be around for some time to come. A successful research one university will capitalize on its unique sets of expertise, and frame them in the context of these opportunities.*

Other RC Members suggested that such scanning should be part of a **strategic planning** exercise that units should undertake to identify future directions and then decide which directions the unit wants to invest in to be competitive for new research directions. This would be particularly appropriate for new configurations as part of the process of dealing with differences and coming to share some aspects of a common mission.

Research Development Leadership – At various levels of the university-Colleges, Schools, Departments, and Programs, research funding would be enhanced by the formation of an ongoing committee, perhaps with designated administrative leadership like an associate dean or deputy department chair, that was responsible for identifying funding opportunities, encouraging appropriate faculty to consider applying, coordinating efforts that might compete or overlap, and helping to get needed support for proposal writing and budgeting.

> ***School of Education Faculty Member –*** *In our Center, we have a Program Development Committee made up of faculty, staff and students. This committee looks for current and upcoming funding opportunities and facilitates a process of deciding which ones we should bid on. This committee also looks at emerging areas of interest in the sponsor community. Periodically, we review our areas of strength and ask what new areas we want to develop. A recent example of this was the decision to invest in developing our expertise and reputation in the field of education in fragile states. We have since undertaken a series of activities that make us more visible and capable in this field with the expectation that it will result in future research and implementation opportunities.*

> ***NSM Faculty Member*** *– [Paraphrased from comments in RC Meeting] In our department clusters of faculty members engaged in similar kinds of research have banded together to fund staff positions that help faculty with grant writing and budgets for proposals, and grant administration after awards. The indirect overhead returned to PIs is critical in making such strategies possible. Similar strategies can be employed at department or School levels with leadership that understands the kind of support that is essential for a growing research endeavor.*

Marketing – UMass should seek to create sub-units or groups with ***unique identifiers*** as titles that reflect areas of research strength that are responsive to opportunities identified in the scanning of the environment.

> ***Kinesiology Faculty Member*** *- These units would build on synergies that position the campus in a unique and highly-competitive way. For example, there currently exists on campus a wealth of research expertise and activity related to health and the environment, yet this expertise is diluted in various pockets, with no particular structure or identity for this emerging area of opportunity. The proposed restructuring will not improve this situation. Rather, a solution that modifies the current reorganizational proposal would be to establish a College of Health and the Environment that includes units for the health sciences, environmental sciences, nursing and public health. Each unit would have its own research culture and goals, but the overall identity of UMass-Amherst as a leader in research on health and the environment would be clear.*

> ***Memo from 14 Faculty Members*** *- There is a strong political, social, and economic justification for the formation of a* ***Life Sciences and the Environment*** *unit on this campus. Within Massachusetts, the Massachusetts Life Sciences Center (MLSC) was created by the Massachusetts legislature in 2006. … It is making financial investments in public and private institutions and is building collaborative ventures among sectors of the Massachusetts life sciences community. A new Massachusetts Life Sciences Initiative announced in 2008 includes a $1 billion investment package to enhance and strengthen the state's internationally recognized leadership in the life sciences. Indeed, funding for a new Life Science Building on the UMass-Amherst campus is dependent on continued investment in the Life Sciences by the Commonwealth. … Nationally, investments under the recent stimulus package in funding through NIH, NSF, USDA, and DOE make it very clear that we will see continued attention paid to life science and environmental issues. Research in life and environmental sciences is seeing expanded funding opportunities…*

Measures of Research Activity – UMass needs to present itself externally in ways which are recognized by research sponsors, including measures of research productivity. This is true at the university level as well as for Colleges, Schools, Departments, and Centers. Depending on their field, units of the University should create measures which are used externally as well as serving as internal yardsticks to monitor the progress of individual units in meeting their own research goals.

> ***Director, Office of Research Affairs*** *- the discussion of research must rest on some critical indicators of 'excellence'. John Lombardi made it really simple with his research expenditure and butts in the seat model. Perhaps the NRC evaluation of doctoral programs is a little broader but it still focuses on scholarly products and competitive grants and awards as key indicators. The Chemistry department's use of the SSRI is another hard figure. We must use definitions that make sense in the national competition that we are in for funding.*

Pre- and Post-Award Staffing – Many RC members commented on the lack of support for proposal writing and budgeting, while others pointed out problems with research

administration, especially in a time when regulations and enforcement of government rules is being applied more stringently. Successful units are much more likely to have made the investment in staff members who help PIs manage the whole sponsored research process. Modest investments in staff can pay off many times over by making increased research funding possible. There are many ways to finance such staff and the investment doesn't pay off immediately. Failing to invest, particularly in a new configuration may limit the growth of research funding.

Summary Comments on Reorganization from Research Council

There are two general conclusions from the Research Council review of the proposed reorganization.

Skillful and successful management of differences in newly merged units is essential to minimize potentially negative impacts on research in the new configuration.

Creating new mechanisms, procedures and ultimately a culture of support for research within new configurations is equally essential if the benefits from new configurations are to be fully realized.

Management of Differences between Components of New Configurations

The challenge will be to successfully manage the differences in the key dimensions discussed at the beginning. To the extent that each new configuration successfully manages the differences between its constituent departments the potential negative impact on research will be minimized. Failure to manage differences successfully has the potential to significantly undermine the research effort at least in the short-term and possibly beyond. Some of those most likely to be problematic for research are…..

Units with a strong record of success in generating sponsored research funds need to have their procedures and resources protected so as to maintain and grow that strength

The existing 70-10-10-10 formula for distribution of indirect costs can function as a reasonable and acceptable tax mechanism by which more successful units subsidize the development of the research potential in less successful units. The formula also provides a transparent, easily administered, and decentralized provision of development resources. By decentralizing to three lower levels, the formula allows each level to make the most effective use of resources in its context.

Merging units need to create a transitional personnel process that provides protection for current faculty members using criteria and priorities under which they were hired. Such a transitional structure can also serve as a mechanism for gradually developing a modified set of criteria in regard to research that recognizes and values the various kinds of research taking place in the new configuration.

Merging units with distinctly different research cultures will require exceptional leadership capabilities that are not as essential in more homogenous units. Leaders will have to create a

climate of respect and valuation of diverse approaches to research, particularly where pure research units are merged with units having a strong applied research and service mandate.

Creating Mechanisms and Procedures that Enhance the Research Capacity

In some ways much of the research effort on campus resembles the gentleman scientist model that characterized much research in the 19th Century. We have professional researchers who often operate individually and in units as amateur managers of the research enterprise. While this model has worked in the past, it is no longer adequate for the challenges faced by UMass now. If sponsored research is to become a sustainable and growing revenue stream for the university, then the management of the research enterprise needs to be professionalized.
Discussion in the Research Council produced a number of steps that would significantly strengthen the management of the research business on campus.

Creating staff positions and procedures at Department, School/College level that are charged with bringing a systematic and professional approach to the business of seeking sponsored research and managing resulting awards.

Creating accountable structures that are charged with scanning the external environment, marketing the capabilities of the university, and working with faculty members to help them match research proposals and sponsor priorities effectively.

Creating a pool of resources at various levels that can be strategically invested in promising new ventures. Recognizing that having the resources to support marketing, sales, and staffing are all essential parts of any business endeavor.

Training PIs and administrators to understand procedures for accounting and management of research awards, and thereby making it clear that marketing, sales, and management skills are a necessary part of the role of being a research faculty member or an administrator in this new environment.