Creating a Culture for Interdisciplinary Research at MSU

Background

We offer a set of recommendations for enhancing interdisciplinary research - some that can be directly implemented in the short-term, and some that will require a bit longer to work out details. Even these, however, could likely be accomplished within a year. They fall in two general categories, which are identified in the list that follows. These items are not listed in order of importance or priority. The members of this team are happy to continue to consult, together or individually, if that would be helpful. In all cases, the ideas were carefully considered, based on our collective (and diverse) experiences and expertise. The recommendations are based on the following premises.

Definition

From Facilitating Interdisciplinary Research, National Academy of Sciences, Committee on Science, Engineering and Public Policy (2004):

Interdisciplinary research is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice.

Cultural Issues

We need to encourage departments and colleges to develop diversified portfolios – reduce the pressure to conform only to traditional measures of productivity. This should be done while acknowledging the tensions that can exist within and between units over the need to balance disciplinary accreditation requirements and teaching and research in core areas with the goal of promoting interdisciplinary scholarship. Interdisciplinary work should be seen as a complement to core disciplinary scholarship, not as competition. We believe that successful interdisciplinary scholarship builds from disciplinary strength and credibility, and recognize the legitimate concerns for the career development of junior faculty. However, faculty and administrators must be flexible and consider that disciplines and opportunities for scholarly contributions evolve. As in the past, today's interdisciplinary research may give rise to new disciplines, which is one more reason to encourage it.

The upper administration should provide a clear message about the importance of interdisciplinary scholarship; deans and chairs need to promote its value. Support mechanisms for interdisciplinary projects from central administration need to be formalized and transparent. It needs to be broadly understood that the university will step up for interdisciplinary projects to provide financial and other types of incentives and infrastructure. It is also important to take some risks, realizing that some interdisciplinary initiatives will not pan out.

General Strategies

Bottom-up approaches work best. A small, core team is required to play an initiating and then connecting role; networks should build from there. Research should be problem-driven, and networking around key topics takes time and coordination. Identifying faculty leaders or drivers of these initiatives is a critical part of this process.

Relationships should be nurtured; strong interdisciplinary scholarship requires the right personalities and the development of trust and collegiality. Chemistry among participants matters – a lot.

Cluster hires across departments and colleges can be effective, but should be coordinated and we must follow up on strategic goals so there is accountability. Similarly, individuals hired across departments with the purpose of bridging across disciplines should be evaluated in this context.

All stages of development of interdisciplinary scholarship need to be inclusive and build on mutual respect; this comes from early involvement of all parties.
Action Items

Increase Communication about Opportunities, Expectations, and Successes

Short-term
- The OVPRGS and some colleges already provide logistical support for major interdisciplinary grant proposals – broadly share information about these opportunities with MSU faculty, perhaps via email and advertisements on relevant websites. Clearly indicate to whom requests should be directed and the process for doing so.
- The university should publicize interdisciplinary work and tell unique stories via the MSU website and press releases, including videos, photos, and interviews as appropriate. We need to better communicate our interdisciplinary successes internally and externally using the Internet and other media.
- Make it clear via the RPT process that interdisciplinary scholarship is valued. An objective assessment of an individual’s contribution to a multi-investigator project should be part of the RPT process. We recognize that this idea presents many challenges, but examples of how to start might include:
  o For new faculty who are hired across departments with the goal of interdisciplinary research, write specific MOUs about interdisciplinary expectations. Add a statement that department-level reviews should include at least one scholar who can specifically evaluate the interdisciplinary nature of the work. This type of language would be in addition to the standard MOUs now required across units for joint appointments. Include the MOU in the candidate’s RPT packet and in instructions for external evaluators.
  o For all RPT cases, modify the policy for external evaluators, so that instructions to them include a message about MSU valuing interdisciplinary scholarship – perhaps that strong positive reputations within a discipline are a valued for tenure and promotion, but contributions to multidisciplinary efforts are also highly respected.
  o Encourage RPT committees to consider the value of publishing in diverse journals. Top-tier journals within disciplines can be desired outlets, but for interdisciplinary work a broader array of venues should be considered to be sure the right audience is targeted.

Longer-term
- Charge an administrator to serve as a ‘network facilitator’, perhaps in the VPRGS office. It may also be useful to hire an external expert to consult with this administrator on the multiple dimensions of interdisciplinary work. One option is Julie Thompson Klein (Wayne State; http://csid.unt.edu/about/people/klein/). She has published extensively in this area, most recently: Creating Interdisciplinary Campus Cultures: A Model for Strength and Sustainability (2010). The administrator should have interdisciplinary research experience. Duties might include:
  o Developing mechanisms and forums to bring scholars together around topical areas. The recent College of Social Science Synergy Summit, Workshop on Intellectual Disabilities across CHM, CSS and CED, and the University Engagement Flint Summit were nice examples of initial steps. These types of events can continue to be organized now, but following up on specific themes and with potential leaders is critical.
  o Searching for and communicating interdisciplinary grant opportunities that align with MSU strengths. These interactions should be targeted to individuals who are potential leaders for the research.

Provide Carrots For Bottom-Up Development of Interdisciplinary Scholarship

Short-term
- Reward all contributing units. Develop standard policies to return IDC for highly interdisciplinary work. Currently, this is done on an ad hoc basis when many investigators are involved, so that some participating units may not receive benefits from their faculty contributions. This change in the reward structure will provide transparent, tangible value to deans, chairs and faculty for interdisciplinary work. To further
encourage interdisciplinary projects, the IDC split formula could be adjusted so that units, and even individual faculty participants, receive an increased share of IDC relative to standard grants.

- To enhance interdisciplinary leadership, fund a small number of interdisciplinary sabbaticals for senior faculty, selected via competition. These individuals would remain on campus with the specific focus of cross-training and building research collaborations across disciplines. Once developed (see below), participating faculty should be members of the Academy of Advanced Interdisciplinary Study. Two models seem useful:
  - Add a semester paid by the university to a regular one-semester sabbatical, providing a full year.
  - A single semester at a time other than the usual 7-year interval.

- Provide a procedure for units to propose interdisciplinary hires when special opportunities arise that parallels the process for other target-of-opportunity hires. Consider that interdisciplinary scholarship is a great way to enhance diversity. Examples might include:
  - Leaders in interdisciplinary scholarship
  - Individuals who fill key gaps in a plan for a growing interdisciplinary field
  - Individuals with unique characteristics for creating synergy between/among particular units

**Longer-term**

- Create a new Academy of Advanced Interdisciplinary Study, a think tank with the focus of promoting cross-disciplinary endeavors and being proactive in identifying new areas with potential for future funding. Some dedicated space and staff time would be needed. Recurring funds would be available to support visiting scholars (short visits, up to a few weeks) and to host events associated with a particular interdisciplinary research theme that rotates each year. This center would coordinate closely with the administrator serving as the network facilitator (see above). Membership would be competitive, perhaps temporary, seen as an honor and offer some compensation. It could involve the following:
  - Interdisciplinary Fellows – late assistant and/or early associate professors with novel ideas for stimulating interdisciplinary programs in research, teaching or graduate training.
  - Senior faculty with substantial interdisciplinary experience – these might come from the pool of University Distinguished Professors, University Faculty Award winners, or key grant-getters within colleges.

- The VPRGS and MSU Foundation should consider the following models for resource allocation:
  - Transform the Strategic Partnership Grants program so that proposals are explicitly interdisciplinary. Require pursuit of external funding after the initial period. Criteria should foster collaboration and perhaps mentoring (e.g., include faculty across career stages and across departments and/or colleges). Grants might be for 2-3 years at $100K per year and include funds for course release(s) to create time for faculty and seed money for collection of preliminary data.
  - Create opportunities for smaller grants ($50K) for network building and organizing interdisciplinary teams over one year. Examples might include requests to support workshops, or a new brown-bag/colloquium series.

- Create a competition for development of interdisciplinary graduate education programs. Require pursuit of external funding after the initial period. This would be a program like the NSF-IGERT (http://www.nsf.gov/crssprgm/igert/intro.jsp), but initially funded by MSU with the goal of becoming self-sustaining. Virginia Tech has one example: https://interdisciplinary.graduateschool.vt.edu/?q=node/16

Respectfully Submitted (in alphabetical order),

Greg Fink  Rob Pennock
Doug Gage  Juli Wade
Kay Holekamp  Jin-Hua Zhao
Ken Keegstra
Ed McGarrell
Michael O'Rourke