White Paper on Strengthening the APT Process for Interdisciplinary Scholars

ADVANCE Policy Review Committee
University of Maryland at College Park
July 2013
Revised August 21, 2013
Revised Sept 11, 2013
Revised Sept 15, 2013

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“Interdisciplinary research (IDR) can be one of the most productive and inspiring of human pursuits – one that provides a format for conversations and connections that lead to new knowledge. As a mode of discovery and education it has delivered much already and promises more – a sustainable environment, healthier and more prosperous lives, new discoveries and technologies to inspire young minds, and a deeper understanding of our place in space and time. Despite the apparent benefits of IDR, researchers interested in pursuing it often face daunting obstacles and disincentives.”


I. Overview

A. Motivation

In January 2013, the UMD ADVANCE Policy Review Committee was charged by the Office of the Provost to examine the issues surrounding the promotion and tenure of faculty whose research and/or scholarly interests are set at the boundaries between disciplines, or “interdisciplinary faculty.” Our Committee rapidly reached consensus on the importance of this topic at this point in the development of interdisciplinary research (IDR) at the University of Maryland, when 1) the University has enacted at least one round of formal cluster hires, an event that encouraged faculty and administrators to think more directly about this mechanism as a lever for strengthening existing IDR; and 2) large multi-disciplinary research centers and programs are proliferating at the University (e.g., Center for Health Equity, Center for Integrative Environmental Research (CIER), Joint Quantum Institute, National Consortium for the Study of Terrorism and Responses to Terrorism (START), Joint Program in Survey Methodology, Neuroscience and Cognitive Sciences Program (NACS), and many others). These centers and programs are attracting the attention and interest of increasing numbers of faculty and students and by virtue of their missions place faculty at the intersection of disciplinary studies.

As the lead quotation indicates, IDR has already delivered return in the areas of discovery and education, and holds promise for the creation of a sustainable environment. Yet like other campuses, existing policies and practices at UMD make it difficult for IDR to survive, much less thrive, and penalizes those scholars who embrace it.

Without appropriate intervention, we fear that the University may find that its stated desire to enhance IDR becomes little more than a rhetorical desire, lacking the import it might otherwise have if campus administrators, faculty, and staff were willing to revise incongruent policies and practices, and provide rewards, rather than penalties for those scholars who embrace IDR. For example, comments from UMD ADVANCE Professors and other faculty affiliated with the ADVANCE Program identify significant difficulties in participating in IDR, whether through centers or in their own units, despite a strong interest in doing so. Further, we note the absence of a common protocol linking Centers to the academic units from which faculty affiliates are
In this paper, we seek to clarify what is meant by “interdisciplinary research,” to provide national and local data regarding the way the recruitment and APT processes deal with IDR faculty, and to identify specific areas that we believe are ripe for review and reform. We make several recommendations for changes to the policies and practices associated with the APT process. To begin this discussion, we propose a definition of IDR.

B. Defining Interdisciplinary Research

Definitions of IDR are large in number and widely varying in terms of breadth and depth. Further, to define interdisciplinary work is by nature difficult to impossible. Yet, as Newell and Rhoten (2007) suggest, it is quite important for enabling organizations and individuals to agree upon the definition of the term interdisciplinary, thereby lessening institutional conflict, increasing learning outcomes for university members, enhancing morale, aiding the academic community, increasing the depth and sophistication of programs on campus, and facilitating faculty in educating themselves in new fields. Toward that end, we identify three exemplar definitions of IDR and explain our preference for one:

1) In “Radical Innovation: Crossing Knowledge Boundaries with Interdisciplinary Teams,” Blackwell and colleagues (2009), of the University of Cambridge Computer Laboratory, describe interdisciplinary research in these terms: “…the explicit intention of interdisciplinary is the use of different skills or analytic perspectives – to frame the problem or opportunity, to bring to bear different repositories of knowledge and to use the insights so gained to achieve a richer solution.”

2) The University of Maryland’s Appendix on Promoting Interdisciplinary Program and Research Activities for the 1995 Middle States Assessment Self-Study offers a broad definition adapted from the Organization for Economic Cooperation and Development report on Interdisciplinary: Problems of Teaching and Research in Universities: “productive and synergistic interactions among recognized disciplines which entail a mutual integration of organizing concepts, methodology, procedures, epistemology, terminology, knowledge, data, and organization of research, education and approaches to compelling or enduring problems facing society.” (p. 6)

3) The National Academy of Sciences (NAS) publication on IDR, Facilitating Interdisciplinary Research, defines IDR as: “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” (p.1).

While there is certainly much similarity across the definitions, we have a slight preference for the NAS statement because of its: 1) broad acceptance of the types of problems that may fall in the IDR domain; and 2) inclusion of advancing fundamental understanding as well problem solving
as a desired outcome. Nevertheless, we suggest the addition of a single closing sentence to the existing NAS statement: “Consistent with the standards established for virtually all scholarly research, the processes and outcomes of IDR must be subject to rigorous review by peer experts in disciplines relative to the discovery and well-experienced in the IDR process.” We turn now to the contexts of IDR.

II. National Context

“We are not students of some subject matter, but students of problems. And problems may cut right across the borders of any subject matter or discipline.”

- Karl Popper

Our Committee’s review of the IDR literature has identified many arguments supporting the relevance of IDR, and we include Karl Popper’s observation above as a seemingly obvious insight that is nevertheless oft overlooked. Otherwise, we note growing national arguments for the importance of IDR. For example, NAS, in its 2004 publication on *Facilitating Interdisciplinary Research*, identified four major, highly potent “drivers of IDR as: 1) the inherent complexity of nature and society; 2) the desire to explore problems and questions that are not confined to a single discipline; 3) the need to solve society problems; and 4) the power of new [cross-cutting] technologies” that can presumably assist us in addressing societal as well as other problems.

Further, we cite the Cambridge University argument, mentioned in the definition section, that radical innovations occur by bringing together people and skills in unexpected ways that are very different from the foci of current, professional training. Thus, we badly need interdisciplinarity in order to enhance the probability of producing radical solutions to problems or to commercialize critical opportunities. In addition, we cannot help but note current changes in the funding structures of both the National Science Foundation (NSF) and the National Institutes of Health (NIH) in order to give higher priority to interdisciplinary work (Nelson, 2011; Pfirman et al., 2011; Bennett, et al., 2013). Finally, data supporting the importance of IDR is increasingly accessible and growing. At the national level for example, a recent NSF report on interdisciplinary dissertation research, indicates that 28.4% of graduate students report being engaged in two or more fields when working on their dissertations (Millar & Dillman, 2012). Nor is growing interdisciplinary interest limited to graduate students: findings by Knight, Lattuca, Kimball, and Reason (2012) show that the number of interdisciplinary undergraduate majors grew by 250% between 1975 and 2000.

III. UMD Context

At the level of our own University, our Committee suggests that the primary task is to look into systemic impedances to the evolution of disciplines on our campus (and perhaps beyond) so that we can encourage, rather than impede, progress, and to treat, in a fair and just manner, those people who are actively engaged in the effort trying to push the evolution along. Not surprisingly, interdisciplinary faculty want this research to be recognized for its intrinsic value,
to be evaluated more fairly, and to garner the same kinds and levels of academic rewards accessible to other faculty on campus.

Fortunately, the collection of data revealing faculty reactions to IDR at UMD is growing. The UMD ADVANCE Program for Inclusive Excellence, the Office of Faculty Affairs, and the Office of Diversity and Inclusion, are all engaged in efforts to improve the work environment for faculty. A critical part of those efforts is research that establishes benchmarks of the current status of faculty work environments, and assesses whether there are important differences in work environments by gender, race and ethnicity, career stage, and college. Below we present findings on IDR excerpted from the UMD Work Environment Survey, performed in spring 2013, to be repeated in spring 2015.

A. The 2013 UMD Faculty Work Environment Survey

The survey asked participants about the types of work that were rewarded and supported in their unit:

- Less than half agreed that their unit supports engaged scholarship, i.e., collaboration between academics and individuals outside the academy that benefits the public good (46.8%), or cutting edge research (43.2%).
- Associate Professors generally reported significantly less favorable views of the existing assessments of interdisciplinary scholarship, engaged scholarship, collaborative research, and cutting edge research.
- Overall, the majority of participants did not perceive their unit to be supportive of particular aspects of their scholarship and research. For example, only 54.4% agreed that their unit supports interdisciplinary scholarship, 46.8% feel that their unit supports engaged scholarship, and 43.2% feel their unit supports cutting edge research (see Table A). Further, differentiation can be found in Table B, which shows responses to the same question at the college level.

Table A. Evaluation of Research and Creative Work at UMD

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<tr>
<th>Survey Item</th>
<th>% Agree/ Strongly Agree</th>
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<tr>
<td>Interdisciplinary scholarship is rewarded in my unit.</td>
<td>54.4</td>
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<tr>
<td>Engaged scholarship is rewarded in my unit.</td>
<td>46.8</td>
</tr>
<tr>
<td>Collaborative research and grant work is encouraged in our unit's reward system.</td>
<td>53.6</td>
</tr>
<tr>
<td>In our unit faculty are rewarded for taking risks and trying to be cutting edge in their research.</td>
<td>43.2</td>
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In addition to the data cited in Tables A and B, there were several differences by faculty rank, with Associate Professors feeling the least supported for interdisciplinary research. Associate Professors were less likely to perceive that collaborative research or cutting edge research is rewarded. No significant differences by gender, race, and ethnicity emerged from respondents’ views on the evaluation of and support for various forms of scholarship. 

B. Evaluation of Interdisciplinary Research

Faculty members reported that working in disciplines outside of those present in their departments made evaluation of their scholarship difficult for department colleagues. This is most applicable in terms of APT, in which the quantity and specific discipline placement of publications are scrutinized as part of the process. We include the comments of eight faculty members who had received ADVANCE Interdisciplinary and Engaged Research seed grants and participated in a focus group as a part of the seed grant evaluation process (refer to the grey boxes that follow). Clearly, these participants are not representative of all female faculty researchers on the UMD campus. Nevertheless, we believe our colleagues of the APT Task Force and Interdisciplinary Sub-committee will find them valuable and insightful as we did and include them only on that basis. Participants’ comments clearly indicated that when interdisciplinary faculty publish in disciplinary journals outside of their tenure home, there is likely to be disagreement in the two parties’ evaluation of the scholarship.

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1 These data are being gathered by the research and evaluation arm of the UMD NSF ADVANCE Grant under the direction of co-PI KerryAnn O’Meara. Guided by a framework of faculty professional growth (O’Meara, Terosky & Newman, 2008), the survey was intended to gather information about the work environment at UMD and conditions that lead to faculty retention, satisfaction, productivity, and professional growth. The survey was created through a rigorous process of content, construct, and response process validation. After data were cleaned, the response rate was 46.9% (784 respondents). Descriptive statistics (e.g., frequencies and means) were first run on each survey item for all respondents, then statistical testing (Chi-squared analyses, t-tests, and ANOVA) were performed for differences by race, gender, and rank. As prior studies have shown women faculty and faculty of color self-report time spent on teaching or on engaged scholarship and interdisciplinary research (Rhoten & Pfirman, 2007), the ADVANCE team wanted to ascertain faculty perceptions of evaluation and rewards for interdisciplinary and engaged research in their unit.
Interdisciplinary work is frequently collaborative. One faculty member received advice from her mentor to avoid collaborating altogether in order to show independence as a scholar. This sort of discouragement appears to be especially prevalent in particular units, according to at least one faculty member, while another indicated she encountered no overt discouragement of interdisciplinarity in hers.

C. Excessive Expectations

Several focus group members discussed excessive and inequitable expectations placed on faculty as a result of limited resources in some units. Participants noted that these actions are more likely to place a greater burden on interdisciplinary faculty since they are already juggling two or more fields of study along with their associated demands, expectations and rewards. Several focus group members agreed that many academic unit marketing and recruitment campaigns employ the word “interdisciplinary” in communications intended to attract new faculty hires, without fully understanding what it means and the kind of support needed to make interdisciplinary hires successful. In other words, the term itself is often misunderstood and/or misrepresented. This kind of “uninformed” recruitment is likely to mean that, once accepting a position, new faculty may find only more traditional scholarship opportunities. Further, focus group members indicated that one particular college using the “uninformed” recruitment approach unfortunately did not demonstrate consistent recognition of the faculty’s interdisciplinarity of scholarship over time.

These kinds of situations seem likely to leave new faculty and the academic administrators responsible for recruiting them with the perception that they were hired under false pretense. As a result, over time it seems likely to create disagreement in the evaluation of their scholarship and may even harm the reputations and productivity of each party. In Section V, we offer recommendations about how to address these and other challenges of interdisciplinarity for IDR faculty at UMD.
On a more positive note, other focus group comments indicate that interdisciplinarity can produce very valuable scholarly connections that subsequently accrue meaningful benefits for both parties. Some of these benefits are discussed below.

D. Building Connections

Several focus group members discussed the benefits of being an interdisciplinary researcher, the foremost being the connections made as an inter-departmental collaborator. Interdisciplinary faculty members agreed that these connections are “emotionally and psychologically healthy.” As one faculty member pointed out, belonging to two different disciplines is akin to immersing oneself in two different cultures. Further, these connections enrich dialogues on topics concerning faculty from all disciplines, such as APT review and work-life balance. In terms of one’s career trajectory, interdisciplinary research through fruitful collaborations can provide the impetus for professional longevity and scholarly diversity.

“We focus on (area) for ten years. I joined the [discipline name] seminar and interdisciplinary work [steered] my second book and the [discipline program name] work served as almost a second PhD to allow my own interest to surface. I also teach in a 3rd area and attend conferences and am able to cross the campus to build connections.”

We turn now to a discussion of the challenges faced by junior faculty pursuing an interdisciplinary research agenda.

IV. Specific IDR Challenges

The scholarly literature examining the challenges accompanying interdisciplinarity is in line with comments from UMD and is rich with examples of the obstacles, stresses, and strains that accompany this process. Chapter 4, “The Academic Researcher and Interdisciplinary Research” of the NAS publication, Facilitating Interdisciplinary Research (2004, pp. 68-102) identifies a number of challenges facing junior faculty, including:

1) Metrics for evaluating scholar’s IDR research are missing and need to be developed, acceptance of the fact that this work is likely to be collaborative in nature rather than independent, and the high need for policies that attribute authorship credit appropriately.

2) Locating departments that believe an interdisciplinary junior faculty “belongs” with them.

3) Obtaining joint appointments that require IDR junior faculty to serve two masters but constrain them from satisfying either, due to competition struggles over the junior faculty’s time and expertise resources.
4) Finding oneself being expected by the department and/or university to do “double duty,” i.e., to satisfy the usual obligations of disciplinary and departmental activity—including publications, teaching, and service—and also to invest time and effort to IDR.

5) Experiencing pressure to engage in activities outside one’s department that are not recognized or rewarded by the home department(s) including:
- service and committee work,
- teaching courses in other departments,
- teaching courses to attract and train doctoral students in one’s own field of research, and
- co-advising graduate students in other departments because this is the best method of training interdisciplinary students, yet finding this is discouraged by one’s own department.

6) Finding that one’s IDR is not sufficiently understood and valued and then learning that one’s research contribution is being questioned by a department in which collaborative work is not the norm and/or that other cultural differences are in play, e.g., where one’s best work is typically published.

7) Receiving lower levels of funding for IDR programs and activities as compared to junior faculty within established, single disciplines.

8) Experiencing difficulty in locating tenure letter writers who understand the overall quality of the work, usually outside the expertise of members of the department who typically comprise the tenure evaluation committee (perhaps reflecting the absence of outside, prestigious senior mentors in a cutting edge or interdisciplinary field); and finding that the acceptance of such outside letters may require a departmental change in policies that currently limit external letters to those written by members of equivalent departments.

Fortunately, strong remedies for overcoming the above and other similar challenges are increasingly available. Our Committee drew from a number of sources in order to first, identify valuable recommendations intended to facilitate the success of junior faculty pursuing IDR, and second, to hone in more specifically on those for the APT process. In an expanded version of a 2005 Higher Chronicle of Education article, Pfirman, Collins, Lowes and Michaels (2005, p. 1) rely on their own experience, a literature review, and web based documents as well as survey responses sent to all members of the Council of Environmental Deans and Directors (CEDD) to develop recommendations for hiring, supporting, and tenuring interdisciplinary faculty members. We combine their suggestions with those of several other scholars to provide what we believe to be important additional contributions. Summaries of our Committee’s recommendations are provided in Tables C and D, which divide them into policy versus procedural and cultural recommendations.
V. Recommendations

Table C. Policy Recommendations for Interdisciplinary Junior Scholars – Hiring and APT

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<thead>
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<th>Hiring</th>
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<tr>
<td>1. A binding letter of appointment (MOU) should be drawn up for each new IDR hire, which specifically outlines the nature of the faculty member’s duties and obligations to the department/unit(s) such as:</td>
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<tr>
<td>• The teaching, scholarship and service obligations for which the faculty member is responsible.</td>
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<tr>
<td>• The general composition of the pre-tenure and tenure review committees.</td>
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<td>• The procedures for faculty evaluation, including letter writers.</td>
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<td>• The agreements regarding the allocation of resources.</td>
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<tr>
<td>• Define when the MOU may be renegotiated.</td>
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<th>APT</th>
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<tr>
<td>2. The university wide committee should ensure that all APT practices were consistent with the terms defined by the MOU.</td>
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<tr>
<td>3. In the case where IDR is occurring, we recommend that APT committees include a professor, from on or off campus, knowledgeable in similar IDR.</td>
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<td>4. The chair of the P&amp;T committee for IDR candidates should ensure that reference letters are sought from scholars that conduct IDR.</td>
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<td>5. In the case of dual appointments, we recommend the university reexamine the process through which the two departments vote on dual appointment cases, e.g., timing and primary/secondary status.</td>
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Table D. Procedural and Cultural Recommendations for Interdisciplinary Junior Scholars

| 1. Departments/units should exercise caution in the hire of IDR faculty into dual appointments, especially in regard to defining governance expectations for pre-tenure faculty. |
| 2. Departments/Units should have rigorous and ongoing discussions regarding |
|   • the kind of scholarship that is expected from IDR appointments |
|   • what mentors and mentoring will be the most effective for these faculty |
|   • what it means to be interdisciplinary in the departmental fields of study |
| 3. Departments/units should provide appropriate guidance on the structure and timeline of research. |
| 4. Departments should develop new models for evaluation of junior faculty contributions to interdisciplinary work. |
| 5. The University should provide professional development for chairs/heads on the topic of how to effectively support and evaluate IDR faculty. |
| 6. Departments/units should obtain targeted guidance from the Division of Research on identifying appropriate funding agencies and vehicles. |
| 7. Guidelines documenting frequently asked questions about the information determining the awarding or denial of tenure should be added to the tenure dossier of interdisciplinary cases, so that the tenure review committee does not see the IDR candidate as weak just because systemic issues are raised. |
A. Notes on Policy Recommendations for Interdisciplinary Junior Scholars – Hiring and APT

1) Developing a binding letter of appointment (MOU) that specifically outlines the nature of the faculty member’s duties and obligations. Interdisciplinary scholars are often hired through the joint efforts of two or more departments. As a result, the letter of appointment spells out the research, teaching, service, and mentoring obligations for all departments involved. Sometimes this results in a formal “contract” that defines these roles and relationships at the beginning, and then binds the departments and deans to those expectations through the tenure process (e.g., University of Southern California). Other times the letter is more informal while serving as a timely reminder of the initial agreement when memories pale. We recommend a written memorandum of understanding such as that used by the College of William and Mary: “For each continuing and fixed-term joint appointment, a memorandum of understanding shall stipulate expectations for the faculty member in the areas of teaching, scholarship and service; procedures for faculty evaluation; and agreements regarding the allocation of resources. This memorandum of understanding shall be signed by the faculty member and relevant department chair(s), program director(s), and dean(s), and shall not be impacted by the movement of key signees, other than the faculty member, to new positions, or universities. The memorandum of understanding should specify when renegotiation is or is not appropriate. If any of the conditions of appointment are renegotiated, a revised memorandum of understanding shall record the changes and signatures of the individual and appropriate administrators of the home and host units.”

2) The university wide committee should ensure that all APT practices were consistent with the terms defined by the MOU. Pre-tenure reviews should replicate the committee structure and procedures that will be used for the recommendation for tenure. Survey results indicate that a joint committee from more than one department typically is established to conduct these reviews, although certainly not always. At a minimum, pre-tenure reviews should include an assessment by the Chair or Director of other units in which a faculty member is appointed. Normally, this assessment will be provided after the assessment of the junior faculty’s primary department.

3) An expert (internal or external) knowledgeable about the IDR junior faculty’s interdisciplinary research should be invited to join the tenure review committee in order to assure that the junior faculty member’s case will be assessed within the context of IDR.

4) P&T committee members should discuss strategies for the candidate’s reference letters, early in the candidate’s tenure. Letters should be sought from scholars that conduct IDR. They should invite potential referees to visit and present papers in order to facilitate interactions and contact.

5) The university should reexamine the process through which two departments vote on dual appointments. Of particular concern is the designation of primary and secondary status, the timing of votes, and the weight of the subsequent votes.
B. Notes on Procedural and Cultural Recommendations for Interdisciplinary Junior Scholars

1) Departments should be cautious in the hiring of IDR faculty into dual appointments. IDR junior faculty typically have homes in several departments. Frequently, this means that they have limited “face time” and are not at home anywhere, or are at home everywhere, and have to perform additional duties – attend multiple sets of departmental meetings, etc. Therefore, consistent with the policy of the College of William and Mary, we recommend that: “Chairs, program directors, and deans shall be especially cautious when defining governance expectations for pre-tenured faculty holding continuing joint appointments. However there is value in building integration across the two participating departments. Thus, we recommend that unless otherwise agreed, junior faculty holding fixed-term joint appointments shall attend faculty meetings in each unit but have committee assignments equivalent to those of a single discipline junior faculty member (“have governance responsibilities only in their home units,” amended text from the College of William and Mary’s website).

2) Both departments and the IDR junior faculty member should engage in discussions of what constitutes research excellence. Deans should meet with the relevant department chairs to discuss issues such as “H Factors,” the meaning of interdisciplinary, and the role of research collaboration in conducting IDR. Flexibility should be the guiding word in determining the nature of these joint appointments with a general acknowledgement that “one size does not fit all” with respect to interdisciplinary research and that at some point in their early careers, candidates may sometimes prefer to affiliate with only one of their two joint departments. We stress the importance of flexibility on the part of the two departments as they discuss their response to such a “switching” request.

3) Authorship expectations should be reviewed and new models for evaluation of junior faculty contributions to interdisciplinary work should be developed. Questions are often raised about the intellectual contribution of interdisciplinary scholars when their names appear as one of many on a publication. Junior faculty conducting IDR should be advised to discuss the issue of authorship with tenure committees so that expectations are clear and compromises can be worked out. Moreover they may wish to annotate their C.V.’s to clarify their role in multi-author publications (NSF 09-33, Impact of Transformative Interdisciplinary Research and Graduate Education on Institutions, May, 2008).

4) Explicit mentorship by senior faculty members knowledgeable about the challenges of tenuring interdisciplinary faculty should be expected, recognized and rewarded.

5) Junior faculty conducting IDR should receive appropriate guidance on the structure and timeline of research activities. Interdisciplinary research often has long start up times while programs are defined, implemented, and then completed (Caruso and Rhoten, 2001). Junior faculty should be encouraged to structure their research so that the publications make it into the tenure dossier. Another useful strategy may be the junior faculty member’s inclusion of a mix of multi-author and first or single author contributions.

6) New models for evaluation of junior faculty contributions to interdisciplinary work should be developed. Questions are often raised about the intellectual contribution of
interdisciplinary scholars when their names appear as one of many on a publication. Junior faculty conducting IDR should be advised to discuss the issue of authorship with tenure committees so that expectations are clear and compromises can be worked out. Moreover they may wish to annotate their C.V.’s to clarify their role in multi-author publications (NSF 09-33, *Impact of Transformative Interdisciplinary Research and Graduate Education on Institutions*, May, 2008).

As the interdisciplinary interests of faculty complicate the work of both Chairs and Directors, we believe it would be helpful for the University to provide training in University-wide practices on how to support and evaluate IDR faculty and how to work more effectively with the other units with which these individuals are affiliated. At a minimum we recommend that unit heads get together once a year to touch base on the candidates and share information as well as any concerns.

7) Guidelines **documenting frequently asked questions about the information determining the awarding or denial of tenure should be added to the tenure dossier of interdisciplinary cases**, so that the tenure review committee does not see IDR candidates as weak, just because these systemic issues are raised.

**C. Other, related considerations**

*Altering campus APT policies to allow junior faculty members to receive tenure at the University, rather than the college level* should be carefully reviewed by the APT Task Force, in order to decrease the complexity of the APT process as currently applied to IDR junior research faculty members, for both departments and candidates.

*The University should clarify to departments the inherent value and assessment of team-teaching*. While this would be helpful for all faculty, it is particularly important for IDR faculty, who often form collaborations that extend into course development and teaching. The hiring and APT recommendations are adapted from Pfirman et al. (2008) unless otherwise noted.

**VI Summary**

Interdisciplinary research is inherently complex but critical in solving large scale societal problems. The UMD ADVANCE Policy Review Committee examined policy and procedural issues that impact interdisciplinary faculty. The recommendations summarized in this white paper stem from a comprehensive literature review combined with insights gained from our own faculty at the University of Maryland. While not easy, implementing the recommendations described in this paper will facilitate faculty engaging in interdisciplinary research. Perhaps the most important contribution will be to create transparency in the tenure process for IDR faculty.
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