

Promotion, Tenure, and Information Technology
Recommendations for final review and career development

A report by The Academic Computing Advisory Council

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Overview

Our initial charge concerned promotion and tenure review for faculty whose teaching and research strongly involves information technology. The charge was motivated by the observation that recent growth in information technology has introduced new elements which the traditional review process may not fully recognize. Our early discussions quickly settled on a key point of consensus:

Tenure and promotion review should be considered part of an ongoing process of career development, beginning at the initial hire and continuing through the final review of a candidate's dossier.

Fair and accurate final review is essential, but its value is limited if the process of development and feedback leading to it is not equally fair and accurate. With that guiding principle, we have organized the report in the following sections:

- **Final Review for Promotion and Tenure**, page 2. This section focuses on language and process for promotion and tenure review. The end of the section includes a list of recommendations.
- **Career Development**, page 4. This section concerns issues and obstacles facing faculty involved with information technology as they work toward promotion and tenure, including resource allocation, annual review, and connecting with knowledgeable colleagues. The end of the section includes a list of recommendations.
- **Action List**, page 7. This is a comprehensive list of recommended actions for academic units and the Provost's office.
- **Closing**, page 8.

Final Review for Promotion and Tenure

Academic Impact

Although specific criteria for promotion and tenure (P&T) vary widely across academic units, there are fundamental common concepts. One of the most basic concepts can be characterized as “academic impact,” which concerns the degree a person’s work is recognized as an important and influential contribution to a field of knowledge. Academic impact has been so broadly applied for so long that it can be considered a timeless concept.

In contrast to the timeless principle of academic impact is the accelerating rate of change in ways faculty can make that impact. The rapidly evolving environment of information technology introduces not only new materials and methods of faculty work, but also new ways that scholars from different fields interact in creating, conveying, and using knowledge. With the increasing rate of change, it is common in many disciplines that faculty are producing work which departs radically from traditional work in the discipline; the methods, products, and multi-disciplinary connections may be unfamiliar to other faculty in the academic unit. The academic impact of such non-traditional work may not be fully appreciated by colleagues and administrators accustomed to traditional yardsticks.

In this discussion of information technology and academic impact, the focus is on forms and methods which are not traditional to the discipline in question, recognizing that forms and methods routine in one discipline (such as computer science) may be novel in another (such as religious studies). The specific nature of such work will naturally change with time as techniques innovative for their day become commonplace. Examples of such work from the past five years would include the following: a candidate in drama whose tenure case included a compact disk with an electronic archive of images and text documenting a collection of costumes she designed, noting that the form of documentation she had created was a contribution of knowledge to her field; a candidate from architecture who documented his national reputation through analysis of web logs, revealing that his teaching materials were widely viewed at other universities around the world; and a candidate from English who made the case that part of his creative work involved innovative application of technology to extend the work of other scholars.

Accurately assessing academic impact of non-traditional work requires reconsidering two other fundamental components of tenure review: first, the role of the external referee; and second, the concept of reputation

External Referees

The practice of engaging referees to assess the content of a candidate’s work is well established. In cases that include work in non-traditional form, the role of external referees should be extended to include referees who are experts in that form. For example, if a candidate’s creative work involves an electronic archive related to the civil war, external referees should include not only civil war experts, but also experts in similar electronic archives who can speak to the impact of that aspect of the work.

In addition to reconsidering the role of referees, it is also necessary to consider the number. Most P&T policies specify the number of referees who can be identified by the candidate and/or by the department chair or someone else in the academic unit, although the numbers vary from unit to unit. Policies should recognize that candidates whose work is non-traditional may need more reviewers than normal.

Reputation

Reputation is one of the key aspects of academic impact, and P&T procedures commonly identify it as a factor in assessing research and creative work. Reputation is much less frequently identified as a consideration in assessing the teaching and service components of a case. Procedures should recognize that it is possible and valuable for a candidate to achieve a national reputation in teaching and service as well. For example in teaching, web-based teaching materials make it possible for a candidate's teaching work to be widely recognized and adopted nationally and internationally. In service, a faculty member's participation in administration of a multi-disciplinary, multi-university research project can lead to significant national recognition.

Recommendations for Promotion and Tenure Review

We recommend that academic units review their P&T procedures and modify those procedures as necessary to do the following:

- **Engage referees who are expert in the candidate's form of work.** When a candidate's work is in non-traditional form, the review process should engage reviewers who are expert in that form. The experts may be inside or outside the University, and may visit in person or provide an assessment in writing. Referees may be asked to comment not only on the work itself, but also for advice on how best to review and assess it.
- **Allow the number of referees to be increased when warranted.** In addition to specifying numbers of reviewers, policies should include language which allows the candidate to request additional reviewers; the candidate should document why the additional reviewers are justified. The department chair and others involved in seeking letters should have discretion to seek additional reviewers as warranted.
- **Recognize the potential value of national reputation in teaching and service.** P&T procedures should identify national reputation in teaching and service as valuable components of a candidate's case. External referees should be asked to comment on the candidate's reputation in teaching and service in addition to research.

Career Development

Needless to say, career development is a central concern for all faculty, surrounded by many difficult issues. Our discussions identified three issues which are particular concerns for faculty using information technology to pursue work not traditional in their discipline. These issues are resource allocation, annual review, and connecting with knowledgeable colleagues; each is discussed in detail below.

Resource Allocation

Academic disciplines can be characterized in terms of resource intensity. In disciplines such as biology, chemistry, and other sciences it is common for faculty to need expensive equipment, physical space, and technical support personnel to perform their research. In contrast to these high-resource disciplines are those with much lower resource demand, where faculty have traditionally needed little more than travel money to support research in disciplines such as history, literature, foreign language, philosophy, or English.

One of the most significant effects of the rise of information technology over the past decade is that all disciplines are becoming more resource intensive. In terms of resource needs, information technology is making the arts and humanities more like the sciences. Another effect of information technology has been the emergence new modes of resource-intensive teaching, particularly where resources, such as software, service a relatively small number of courses. The current budget model is strongly oriented toward general purpose resources such as rooms and computer labs, lacking clear mechanisms for allocating topic-specific resources.

We have the following observations concerning these trends:

- While traditionally high-resource disciplines such as the sciences have long experience and well established methods in allocating resources for research, there is little experience in allocating resources for teaching. Methods for allocating teaching resources are commonly ad hoc.
- In traditionally low-resource disciplines there is little experience in dealing with questions of significant resource allocation for either research or teaching. These disciplines commonly struggle with issues of resources allocation.
- Although deans and chairs should be responsible for questions concerning allocation of resources to faculty, deans and chairs are often unprepared or reluctant to deal with technology-related questions, with the result that significant academic decisions often fall by default to the hands of technical administrators.

The result is an administrative environment which is often unclear and unsupportive of faculty engaged with non-traditional applications of information technology. This issue is significant not only for tenure and promotion review, but also for faculty recruitment and retention. The University has made clear in documents such as the 2020 report that leadership in innovative applications of information technology is a prime goal. Achieving that goal requires an administrative environment where methods of resource allocation are clear and supportive for

faculty doing excellent and innovative work. If the administrative environment is ambiguous and ad hoc, then those faculty are likely to go to institutions where the environment better supports innovative work with information technology.

Annual Review

The best way to avoid a situation where the impact of a candidate's case is unclear to his or her own unit is to have a substantive annual review which assesses the candidate's status with respect to goals set at the time of initial hire, as well as more recently established goals. In addition to providing the candidate with tangible feedback, the process also allows the candidate to educate the unit head about the candidate's work and the nature of its impact. The reappointment review for junior faculty is a similar opportunity for feedback to the candidate, as well as education of the candidate's senior colleagues. Without this process of regular communication along the tenure track, a candidate presenting a non-traditional case is less likely to receive a fair and accurate tenure review.

The annual review should also be an integral part of the resource allocation process discussed earlier. It is an opportunity for the faculty member to communicate and explain resource needs in teaching and research, and for the unit head to assess the needs of all faculty systematically.

Connecting with knowledgeable colleagues

In addition to the formal mechanism of annual review, informal advising from experienced colleagues is an important component of career development. For faculty using information technology, such informal advising may be difficult to find because colleagues in their academic unit may have little relevant experience. As information technology spreads across disciplines, it becomes more likely that helpful advisors are in other disciplines. For example, someone in architecture whose tenure case included a thorough analysis of web logs to document the national and international influence of his web sites, could give valuable advice to someone in economics who also had widely adopted web materials. The difficulty lies in mechanisms that enable such people to connect.

Within an academic unit, career and tenure advising are commonly part of "hallway knowledge": the collective wisdom and memory of the organization conveyed through informal conversation. While hallway knowledge is often ample at the department level, it is thin at the University level. Organizations such as the Teaching Resource Center, the Institute for Advanced Technology in the Humanities, and the Teaching and Technology Initiative help build such knowledge at the University level because they bring together people from different parts of the University in conversation.

We have discussed ideas for additional University-level resources to build this kind of knowledge, but have not reached conclusive answers. One promising idea is to maintain a searchable collection of "tenure abstracts": brief descriptions of successful tenure cases, including the form of the work and how its impact was documented. On receiving tenure, faculty would be asked whether they would offer such an abstract and be willing to talk to junior faculty who wanted to discuss building a case with similar features. Other ideas include a web-based forum for faculty to exchange ideas concerning the tenure and promotion process, and a series of talks where faculty engaged in non-traditional work would discuss their approach and how they

achieved academic recognition. We believe these ideas and others are worth developing further, not only to help in career development but also to build intellectual community at the University.

Recommendations for Career Development

We make the following recommendations concerning career development for faculty engaged in non-traditional work with information technology:

- **All academic units should have a process of substantive written annual review.** Clear, regular communication between the faculty member and the academic unit head is essential both in terms of feedback to the faculty member and education of the unit head concerning the impact of the non-traditional work. In some academic units at the University, it is clear that the process of annual review is inadequate.
- **The Provost's office and academic units should develop a budget model which recognizes the need for the regular support and maintenance of topic-specific teaching resources.** The current budget model is strongly oriented toward general purpose resources such as rooms and computer labs, lacking clear mechanisms for allocating topic-specific resources. Such topic-specific resources are often essential for faculty using information technology their teaching.
- **The Provost's office and academic units should develop a budget model suitable for allocation of research resources in traditionally low-resource disciplines.** The rising use of information technology for research in traditionally low-resource disciplines has raised resource allocation questions in these disciplines concerning physical space, disk space, and support personnel. Faculty pursuing innovative work in these disciplines often face difficulties because resource allocation mechanisms are ad hoc.
- **The annual review should be integrated with the process of resource allocation.** The substantive annual review should be an opportunity for the faculty member to communicate and explain resource needs in teaching and research, and for the academic unit to assess the needs of all faculty systematically.
- **The Provost's office should promote the process of junior faculty finding knowledgeable colleagues outside their academic unit.** Faculty engaged in information technology may have valuable potential advisors in other academic units, but there are weak mechanisms for these faculty to connect.

Action List

We recommend that academic units and the Provost's office take the following actions during the academic year 2004-2005, sharing results with UCIT and ACAC at the end of that year.

Each academic unit should:

- Assemble the relevant administrative group to consider the following modifications to promotion and tenure procedures:
 - Include language which ensures that the external reviewers include experts in the form of work and documentation presented by the candidate, in addition to experts in the content.
 - Include language which allows the number of external referees to be increased with a request and supporting justification. The request may come from the candidate or from administrators in the review process.
 - Include language which recognizes that national recognition may be achieved and enhanced through teaching and service as well as research.

The Provost's office should:

- Design and implement a consistent procedure for periodic performance review of faculty which can be adopted by all academic units. The review should allow the faculty member to communicate and explain resource needs in teaching and research, and for the academic unit to assess the needs of all faculty systematically. The procedure should include a written review given to the faculty member. The review should be annual for tenure-track faculty, and could use a longer interval for tenured faculty.
- Work with academic units to develop a budget model which recognizes the need for the regular support and maintenance of topic-specific teaching resources that support relatively small numbers of classes.
- Work with academic units to develop a budget model which includes clear mechanisms for allocation of research resources in traditionally low-resource disciplines.
- Work with interested faculty to design and implement resources which will promote the process of junior faculty connecting with knowledgeable colleagues outside their academic unit. Such resources could include:
 - A web-based database of "tenure case abstracts", brief descriptions of tenure cases written by the authors.
 - A web-based forum for university-level "hallway knowledge" among faculty to exchange ideas and experience concerning tenure, promotion, and making progress at the university.
 - A series of talks where faculty who pursue notable non-traditional work could discuss their approach to advancing the work and achieving academic recognition.

Closing

Rapid change is one of the distinguishing characteristics of information technology, in sharp contrast to the world of academia, where change comes much more slowly. In the area of final promotion and tenure review, information technology can be accommodated by reconsidering and extending timeless concepts such as academic impact and external referees. In the area of career development, the required changes primarily involve issues of communication and administrative clarity, issues which are generally more difficult to address, but no less important.

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