



College	College of Health Solutions	
Unit	Department of Biomedical Informatics	
Document	Promotion, Tenure and Retention Criteria	
Approved by the faculty		Date:
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Vice Provost for Academic Personnel	Date

Office of the University Provost

300 East University Drive
 P.O. Box 877805 Tempe, AZ 85287-7805
 (480) 965-4995 Fax: (480) 965-0785
<https://provost.asu.edu/>

Promotion, Tenure and Retention Criteria

Department of Biomedical Informatics, College of Health Solutions

Arizona State University

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1. Statement of Philosophy

The major aspiration of the Department of Biomedical Informatics (BMI) at Arizona State University is improve the health of our population through informatics. This is to be achieved through leading programs of research, education, service, and community engagement. The research and education thus not only must emphasize quality and innovation but also have a very applied focus that has a beneficial impact on our community and our region, and ultimately on society more broadly. ASU BMI seeks to be one of the leading academic programs in BMI in the United States, through the breadth and depth of its pursuit of these goals. Its research subdomains are broad, including bioinformatics, imaging informatics, clinical informatics, and population/public health informatics, as well as methodologies that are crosscutting and important to more than one of these subdomains. At ASU, BMI has also embarked on an unusually broad range of educational goals, with curricula at the graduate level and also aimed at, medical students.

Service is a large component of the expectation for BMI faculty activities, somewhat intermediate between the service roles of clinical faculty in an academic medical center and those of traditional faculty in a non-medical academic department. Some faculty will have responsibility for development and provision of core resources, infrastructure capabilities, and expertise for the benefit of the biomedical and health care community, or oversight of such services. Another kind of service to the community derives from the leadership role BMI seeks to play through community engagement in the needs of the community and region, helping to develop measures for assessment of requirements, formulation of policy, conducting evaluations, fostering dissemination and adoption of validated approaches, organizing and integrating disparate biomedical and health-related capabilities, promoting adoption of standards to foster interoperability, and similar activities. Some BMI faculty will have clinical responsibilities at affiliated medical centers. Such clinical activities can be considered to be part of the service role of BMI if the clinical work ties directly to the research or teaching role of the faculty member or if the relationship of BMI with the affiliated medical center benefits in some other way from these clinical activities.

The evaluation process requires the identification of appropriate measures for each of these activities. Thus, an important part of the criteria is the accompanying set of *measures of performance*, each of which requires the professional judgments of peer groups. However, it must be noted that no finite list can identify all possible meritorious activities. Individuals and committees who are participants in the evaluation process should seek out additional examples of academic excellence and should not hesitate to argue in favor of their reward and recognition. The examples set by those top-rank institutions that are our aspirational peers should play a meaningful role in the deliberations. Ultimately it is the responsibility of each participant in the process to

consider the documented contributions of their colleagues from the viewpoint of the real benefit to the Department of BMI, the University, and the profession. In doing this, they are the arbiters of the meaning of *excellence*, a word that is difficult to define in an academic context, but which must be the benchmark for faculty performance and productivity.

Some remarks on research, teaching, and service are provided next in order to help motivate and clarify the listings of the corresponding measures of performance, which are essentially listed in priority order. General remarks on implementation are followed by the specific criteria for promotion, tenure, and retention.

2. Research

Research activity can be refined into two broad categories:

- Applied research - the application, interpretation, and transfer of new knowledge to solve problems;
- Basic research - the discovery of new knowledge.

The view of research in BMI is that it couples an area of focus in the biomedical/health domain with specific informatics-related methodologies, or has a clinical translational focus, i.e., by moving basic discovery to application. However, for these criteria, legitimate targets for either basic or applied research include not only these areas, but also applied or basic research that is aimed at improved pedagogy, specifically by studying the actual teaching/learning process, related curricular developments, or the innovative use of technology. Quality judgments for research should be based on the usual standards for scholarly work: a) demonstrates knowledge of the field; b) has a well-defined objectives; c) uses appropriate tools and procedures; and d) communicates effectively.

Measures of Performance: Research

- 1 Peer-reviewed archival publications, including journal articles, book chapters, and monographs¹
- 2 Peer-reviewed conference presentations/publications¹
- 3 Successful proposals for external support of research activity
- 4 Development of special facilities to support research activity
- 5 National and international awards for research activity
- 6 Invitations to give talks at national or international meetings

¹ Candidates should provide supporting evidence (for example, referees' reports and acceptance rates) that will yield insight into the quality and significance of any work reported for Research Measures 1 and 2. Quality judgments are usually provided in critical reviews of a candidate's work by distinguished colleagues in their own field of specialization. This implies that the caliber of the reviewers as well as the insight of their critiques will be important.

3. Teaching

The evaluation of teaching effectiveness must consider the performance of the individual teacher in the classroom or laboratory as well as the content of specific courses, the standards imposed, and, where possible, the degree of actual student learning. The desirability and difficulty of introducing innovative material into academic programs should be explicitly considered. Since teaching is an aspect of scholarship, quality judgments should be based on the usual standards for scholarly work: a) demonstrates knowledge of the field; b) has a well-defined objective; c) uses appropriate tools and procedures; and d) communicates effectively.

An important contribution of faculty is in the design of learning objectives, curricula, and courses for these programs, innovative approaches to teaching and learning, as well as direct teaching activities.

Measures of Performance: Teaching

- 1 Peer assessment of teaching activities and their effectiveness²
- 2 Peer assessment of courses or laboratories developed for local use²
- 3 Development of new curricula, courses, and educational approaches
- 4 Successful mentoring of students, particularly graduate students pursuing the highest degree offered by the unit, whose work leads to contributions in Research Measures 1 or 2, or to other identifiable accomplishments
- 5 Student evaluations and portfolios
- 6 Published textbooks
- 7 Awards for teaching
- 8 Individual projects pursued with undergraduate students³

² The assessment will be based on a consideration of a Teaching Portfolio for each candidate by all participants in the evaluations process. The make-up of the Teaching Portfolio will be guided by a faculty-selected peer group that will also provide information relative to the evaluation of teaching.

³ The specific outcome of each project should be reviewed.

4. Service

By the very nature of their positions, a certain level of involvement by all faculty members in service activities is expected and required. These include, for example, committee memberships and special assignments necessary to support some aspect of teaching or research in BMI or the profession. Although service is always important in some sense, the concepts of academic excellence and professional expertise may not be readily apparent in every possible service activity. The evaluation of all faculty service activities should keep this potential limitation in mind.

Because of the emphasis on application in BMI, provision of services that benefit a user constituency or the community should be also assessed. BMI's reason for existence is to make a difference in biomedicine and health care, thus demonstration of such utility is an important metric. As noted in Section 1, some faculty in BMI are clinical practitioners (doctors or nurses), and clinical service at an affiliated medical center may be part of their responsibility. However, since BMI is not a clinical department, this clinical service should not be considered in the P&T process unless it is in the context of residency or fellowship training (education) or as volunteer work for a community organization or otherwise benefits the BMI department in some specific way.

Measures of Performance: Service

1. Establishment or oversight and management of a core resource, infrastructure or other service that can be documented as fulfilling a recognized need.
2. Leadership or key role in a community initiative, such as helping to define requirements, policy, or services, or forming or directing consortia or joint collaborative activities with the community.
3. Editor or associate editor of a scholarly archival journal
4. Chair of a University or Biomedicine@ASU Committee
5. Organization of a national or international professional meeting
6. Officer in a national or international professional organization⁴
7. Referee for archival journal, conference proceedings, or funding agency
8. Other important service activities for which substantial contributions can be demonstrated.
9. Performance of clinical service if it meets the criteria noted above.

⁴ Participation in professional societies must be substantive.

5. General Remarks on the Implementation of the Criteria

- The evaluation process should normally give equal weight to research and teaching activities, and should allow for professional and institutional service/community engagement. However, some latitude in relative weights is acceptable since individual goals and interests can be reasonably expected to vary over time. Differential workload agreements with the chair/director are acceptable and are expected to have been designed in advance in consultation with the chair/director. Subject to the foregoing, individuals who may make exceptional contributions in the service/community engagement should be recognized for those achievements.
- Research and teaching are natural partners under the evaluation philosophy outlined here. The most desirable faculty members are those who continually demonstrate a synergistic relation between their teaching and research activities at both the undergraduate, graduate levels, and professional levels.
- Collaborative activities are encouraged, and examples of collaborative accomplishments should be specifically noted in the evaluation process. The difficulties associated with collaboration should also be recognized. Candidates should indicate their level of contribution to joint activities.
- In evaluating the various activities of particular candidates, *quantity* alone cannot be the deciding factor. The *quality* of each contribution must be explicitly considered, ideally within the framework of appropriate national expectations. Evaluators must be confident and conscientious enough so that routine activity is not mistaken for serious accomplishment.
- Since academic appointments often imply long-term commitments by the Department and University, evaluators must be satisfied that sufficient evidence of a continuing and maturing satisfaction of the various criteria is present in all cases.
- It is expected that these criteria will also guide the determination of the appropriate academic status for individuals joining the Fulton School's faculty above the rank of assistant professor.

6. Promotion and Tenure Criteria

P/T 1. Assistant Professor/Associate Professor without Tenure to Associate Professor with Tenure

The successful candidate will:

- have demonstrated an ongoing record of original research accomplishments, particularly in archival publications; especially those that demonstrates:
 - the establishment of an independent research agenda
 - continuity and cumulative impacts
 - recognition nationally as a significant contributor to the scholarship in the area and as a scholar or intellectual leader.
- have demonstrated an ongoing record of success in mentoring (undergraduate, graduate, medical students, and fellows)
- have demonstrated a record of success in attracting external support for scholarly purposes in research or teaching;
- have demonstrated a continuing record of success in teaching;
- have demonstrated a suitable level of service activity and community engagement, and

Success should be based on the sum of all these activities. The candidate is expected to have create da strong and integrated portfolio of academic research and scholarship, and there should be signs that the candidate will continue to be a productive scholar.

P/T 2. Associate Professor With or Without Tenure to Professor with Tenure

The successful candidate will:

- have demonstrated a substantial ongoing record of original research accomplishments, particularly in archival publications;

- have demonstrated a substantial ongoing record of success in mentoring graduate students;
- have demonstrated success in mentoring junior faculty
- have demonstrated a substantial record of success in attracting external support for scholarly purposes in research or teaching;
- have demonstrated a substantial and continuing record of success in teaching;
- have demonstrated a substantial record of institutional and professional service and community engagement;
- have demonstrated substantial academic leadership at the Department level; and
- be recognized internationally, as a leading scholar within this broad definition of scholarship

7. Retention Criteria

Third Year Review of Probationary Faculty

- The chief consideration is progress toward fulfilling the appropriate criteria for promotion and tenure are listed above. For junior faculty members, progress toward a focused original research and teaching program is the major issue, with service secondary.