

## Expectations for Promotion and Tenure College of Science

As specified in the Faculty Handbook, each case for tenure and for promotion in rank is reviewed at the department, the College, and the University level. This document broadly outlines College of Science expectations for its tenure track faculty seeking promotion and/or tenure.

The following italicized passages from the Faculty Handbook summarize University expectations for tenure and/or promotion:

*Each candidate for tenure and/or promotion to associate professor is evaluated in the light of the triple mission of the university: learning (also known as teaching), discovery (also known as research), and engagement (also known as service). Although not all candidates are expected to have equal levels of commitment or equal responsibilities in each of these missions, a high level of general competence is expected.... Beyond that basic foundation of competence, decisions related to tenure or promotion to associate professor require evidence of excellence in at least one area.*

*Each candidate for the rank of professor must demonstrate a high level of competence in an appropriate combination of instruction, outreach, and professional activities relevant to his or her assignment. Because of the university's mission and commitment as a major research institution, successful candidates for the rank of professor must demonstrate excellence in research, scholarship, or creative achievement, as appropriate for the candidate's discipline and assignment. Promotion to the rank of professor is contingent upon national or international recognition as an outstanding scholar and educator.*

*Besides consideration of specific professional criteria, evaluation for promotion or tenure should consider the candidate's integrity, professional conduct, and ethics.*

The following pages will flesh out the above passages as implemented in the College of Science, with special attention to research, teaching, and service. As an aid to clarity, activities falling within these three areas are described next.

**Research** encompasses those activities leading to the production of new scientific knowledge, to development of new methods for knowledge generation, and to novel synthesis of existing scientific knowledge. Research results most often appear as articles in peer-reviewed research journals and/or as patentable discoveries or deliverables in funded research projects. Research results may also appear as book chapters, as books, as software, and occasionally as translational scholarship in practice-oriented journals. Research activity is typically accompanied by presentations at academic meetings and other suitable venues, and/or by contributions to research seminars and workshops.

**Teaching** activities are those directly involved in the education of Virginia Tech students, and the application of knowledge to practical problems in that educational context. This includes the development of instructional materials or methodologies, advising of students for their academic and professional careers, and participating on thesis and dissertation committees. Common teaching activities are classroom instruction, new course development, one-on-one teaching such as leading independent studies and directing graduate student research, authoring textbooks, developing instructional software and videos, publishing articles on instructional practice, and contributions to teaching workshops.

**Service** activities are those other than research or teaching that help maintain or improve the operations of a department, a program, the College as a whole, the University, or the faculty member's profession. Service also includes outreach, in which professional expertise is brought to bear in meaningful ways with partners outside the academic community. Examples of service include advising student organizations; refereeing manuscripts submitted to journals and serving on journal editorial boards; refereeing grant proposals; serving as a member of committees at the departmental, college, or university level; serving on community and government committees requiring the faculty member's professional expertise; and serving as an officer of academic or other professional organizations.

### **Promotion to Associate Professor with Tenure**

The award of tenure represents a substantial and long-term commitment by the Department, College and University. A faculty member's professional accomplishments and contributions to her or his department's academic mission are expected to grow while an associate professor, and to remain at a high level for the duration of their time at the university. Accordingly, a prime consideration is judgement of the probability that a faculty member will continue to develop after the award of tenure.

As quoted above, the Faculty Handbook requires general competence in teaching, research, and service, with excellence in at least one. For promotion to associate professor with tenure, the College of Science requires there be strong evidence of excellence in research. The College further expects a high level of general competence in teaching, along with a reasonable level of service. These requirements are described in more detail below.

- **RESEARCH:** For promotion to associate professor with tenure, a faculty member is expected to have established a publication record in top-tier, peer-reviewed venues that materially and substantially contributes to disciplinary and/or relevant interdisciplinary knowledge. This body of work should show evidence of influence on the work of others, with growing national recognition within the field. Such a body of work cannot be defined by quantity alone, and no specific number of publications (or

pages thereof) is necessary, or sufficient, to demonstrate the required excellence. Indeed, the question of quantity is inseparable from that of quality, and neither admits a simple, formulaic approach.

Quality is reflected by the influence the research has on other research and researchers in their field; by ranking and impact of publication outlets; by judgements of importance, of novelty and usefulness of methods, and of conceptual/theoretical sophistication; and by the research's capacity to attract external funding. Quality is demonstrated by a growing scholarly reputation in the faculty member's field of scholarship. Examples of evidence for quality include evaluations of external reviewers, invitations to present at prestigious forums, invitations to referee research papers and grant proposals, and a positive citation analysis.

Research funding, at a level appropriate to the field, is a necessary component of a promotion-worthy research record. This can be from federal or other governmental sources, from industry, or from foundations, so long as it has supported consequential scientific research. Grants, contracts, and other research funding are viewed by the College of Science as an important and necessary enabler of scientific advance. However even an exceptional funding record does not supplant the requirements for an excellent publication record and accompanying indicators of research leadership.

The candidate's research portfolio is evaluated not just on accomplishments to date, but on the likelihood of ongoing success and continued development. Accordingly, each individual (department head and dean) and committee (department and college) that evaluates the portfolio as part of the promotion process is charged with forecasting future development of the candidate. Such forecast should take into account publication and funding arcs, including evolution of intellectual development, with special attention paid to work conducted while a Virginia Tech faculty member. An individual's or committee's recommendation should specifically address how the body of research supports the forecast.

The College of Science recognizes that there are disciplinary differences to be taken into account when evaluating a candidate for tenure and promotion. As one example, in some disciplines it is common to enter the tenure-track directly from completion of the PhD, while in others, two or more years of postdoctoral work is a minimum requirement. Again, in some disciplines all doctoral students are expected to be supported on research grants, while in others this is not the case. The College of Science expects that the research portfolio of a successful candidate would be competitive for tenure at peer departments from across the country, and from around the world, in the same discipline.

The expectations outlined here avow that a candidate must be making significant scholarly contributions. They further specify that the types of evidence employed in support of these expectations may vary by discipline. Pre-tenure reviews at the 2<sup>nd</sup>

and 4<sup>th</sup> (or 3<sup>rd</sup> and 5<sup>th</sup>) years of the probationary period should provide explicit guidance and feedback on the faculty member's progress toward meeting these expectations. While a candidate's publications may be outgrowths of work initiated with the Ph.D. supervisor or post-doctoral mentor, they should include work that demonstrates independent intellectual growth and research leadership. If the preponderance of a candidate's research is published jointly with more senior scholars, there must be clear evidence of the candidate's important original contributions.

- **TEACHING:** For promotion to associate professor with tenure, a faculty member is expected to have established, by the end of the probationary period, a record of consistently good classroom teaching, as evidenced by SPOT evaluations appraised relative to an appropriate comparison set, and by peer evaluations. They must contribute to department/college teaching programs as appropriate including, as needed, advising and mentoring of students and serving on thesis and dissertation committees.

Peer teaching evaluations should reflect the candidate's success in presenting course content at a suitable level; effectiveness of pedagogical skills such as organization, presentation, and evaluative techniques; and timeliness of feedback to students. The degree to which the candidate treats students with respect and courtesy should be addressed. Teaching accomplishment can also be evidenced by effective use of various instructional modes and classroom technology; course revision and/or new course development, as well as new program development; successful guidance of graduate students; recognition via teaching awards; and other pertinent teaching-related activities.

- **SERVICE:** For promotion to associate professor with tenure, the service record should exhibit both internal and external components. Internal service efforts should focus on activities such as constructive participation in faculty meetings, and membership on a modest number of departmental and/or college committees. External service efforts should be concentrated in areas that facilitate scholarly work, such as serving as a referee for journal manuscripts and organizing conference sessions. While it is important that both service components be meaningfully present, service involvement cannot be so extensive as to negatively impact a candidate's ability to excel in research and teaching.

### **Promotion to Full Professor**

As quoted above, the Faculty Handbook states that "Promotion to the rank of professor is contingent upon national or international recognition as an outstanding scholar and educator." Promotion to professor in the College of Science thus requires a candidate to be established as a research leader in their field, and that they be an accomplished and

innovative teacher recognized for effective instruction and guidance of students. There is also a stronger service expectation than that for promotion to associate professor. These requirements are described in more detail below.

- **RESEARCH:** For promotion to professor, a candidate must demonstrate maturation of research excellence while an associate professor, to the level of becoming an acknowledged research leader. They must have established a national and international scholarly reputation in their area of research, have shown and continue to show substantial influence on scholarship in that area, and have sustained research achievement as indicated by continued publication in top-tier journals, by an appropriately notable funding record, and by professional contributions to their field of scholarship.

The College of Science specifically looks for significant and sustained impact on a research field. This typically cannot be demonstrated by the publication record alone. Only if these contributions have a significant influence on scholarship in a field has the standard of excellence been met. Indicators of significant impact in research include publication of work that is known and respected by leading scholars in a field; that has influenced the direction of research in a field, including successfully addressing fundamental questions, and/or identifying important new questions; that has significantly altered thinking and practice in a field.

Publication excellence is one key component of demonstrating research leadership. Leadership must also be demonstrated in activities other than publication. Examples of such activities include guiding research of graduate and undergraduate students, mentoring of junior faculty and post-docs, serving on editorial boards with high-quality professional journals, and significant involvement in collaborative research projects that reach beyond the candidate's department.

Strong research funding, at a level appropriate to the field, is a necessary component of a promotion-worthy research record. This can be from federal or other governmental sources, from industry, or from foundations, so long as it has supported consequential scientific research. Grants, contracts, and other research funding are viewed by the College of Science as an important and necessary enabler of scientific advance. However even an exceptional funding record does not supplant the requirements for an excellent publication record and accompanying indicators of research leadership.

- **TEACHING:** For promotion to professor, a faculty member is expected to have maintained a record of consistently good classroom teaching, and to have substantially contributed to the teaching missions of the department, the college, and the university. Teaching activities should include substantive engagement in curriculum development, advising students, serving on masters and doctoral committees, participation on program advisory and ad hoc program committees,

involvement in student recruitment, and/or other activities that advance the teaching mission.

Baseline evidence of sustained achievement in teaching must show good student evaluations relative to the appropriate comparison set, and strong peer teaching evaluations; see the expectations for tenure candidates above for further details. The requirements for promotion to professor are distinguished by the expected level of additional teaching accomplishments in areas such as outlined in the preceding paragraph. Evidence can include innovation in the use of instructional technology with demonstrated impact beyond the candidate's classes; development of new courses; development of new, or revision of existing, academic programs; successful guidance and placement of graduate students at a department-appropriate level; and recognition of teaching excellence through departmental, college, or university awards.

- **SERVICE:** For promotion to professor, a candidate must demonstrate substantial engagement in a full range of internal and external service activities. For service to the Virginia Tech community, this can include activities such as actively serving on and chairing departmental, college, and university committees; serving as advisor to student organizations; organizing campus activities that promote teaching effectiveness or enhance the research environment; and participation in university governance. Service to the profession, which in some instances will also demonstrate research leadership, can include activities such as organizing conferences; taking leadership roles in professional organizations; serving on professional or governmental panels or in other advisory capacities to constituencies outside the university; and taking on senior editorial posts with professional journals.

In addition to the above, all faculty members are expected to demonstrate professional collegiality, and to conduct themselves with utmost integrity, behaviors which are prerequisites for promotion to any rank. Collegiality includes but is not limited to participating in meaningful and positive ways in the activities of the Department, College and University; interacting with others (students, staff, and faculty) in respectful ways in all communications, whether spoken or written; acting with integrity in all interactions with members of the university community, and in any capacity in which a faculty member may be viewed as representing their department and/or Virginia Tech; and supporting the intellectual and professional development of colleagues at Virginia Tech and elsewhere.