



DEPARTMENT OF MATHEMATICS AND STATISTICS

Criteria for the Reappointment and Promotion of Tenure Line Faculty

The American University *Faculty Manual* calls for all departments or schools (a.k.a. “teaching units” and “academic units” respectively) to develop guidelines establishing the overall contributions expected of all faculty candidates for reappointment and promotion, in accordance with the “General Criteria for Evaluation of Faculty” outlined in section 10 of the *Manual*.

The purpose of this document is to establish guidelines for reappointment and promotion of tenure line faculty in the Department of Mathematics and Statistics. It is intended as a reference for tenure line faculty members in the Department of Mathematics and Statistics seeking reappointment or promotion, as well as for the department's Rank and Tenure Committee and the department chair fulfilling their roles in the review of such faculty.

Notes

1. The Department of Mathematics and Statistics' procedures on **voting** for tenure line faculty reappointment and promotion can be found in the department's by-laws.
2. Although often conflated with questions of reappointment and promotion, the **merit review process is fundamentally distinct**. Further information on this process can be found in departmental by-laws, as well as in the College's “Faculty Merit System Guidelines.”

Tenure Line Faculty Reappointment/Promotion Criteria

According to Faculty Manual, all faculty members are expected to

...demonstrate teaching excellence in fulfilling primary responsibilities, significant scholarship, and evidence of a willingness to provide appropriate levels of service to the university and professional community. There must also be evidence of the ability and commitment to continued advancement in all areas. As members of the learned profession responsible for educating the community, the university expects faculty

members to exhibit civility, collegiality, and respect for different points of view in the academic community. (section 10)

Below we detail the specific criteria established by the department of Mathematics and Statistics for evaluating the performance of tenure line faculty members who are applying for reappointment and/or promotion.

Teaching

For the purpose of all tenure line faculty actions at American University, “teaching excellence” is defined by the *Faculty Manual* as enabling students

to acquire knowledge, develop critical thinking skills, and become active participants in the learning process. Faculty are expected to provide timely, fair, and objective evaluations of student performance. . . . Faculty may demonstrate teaching excellence through a variety of ways, including course design, development of new curricular initiatives, up-to-date course content, advising of students, student engagement and achievement outside the classroom, and adherence to evaluation procedures that accurately reflect student accomplishments. Teaching units or academic units may also view publication and presentation of teaching materials and methodologies as a contribution to teaching. (section 10.a)

The department judges teaching broadly. To the *Manual’s* list of ways to demonstrate a commitment to teaching excellence, the department would add a combination of some of the following: the overall quality of syllabi and course materials; clear articulation of course goals; evidence of rigor in courses taught; the innovative use of classroom formats or technologies; the inclusion in the syllabi and the coverage of required topics in each course; the timely return and with sufficient and useful feedback of all graded assignments; development of new courses and curricula; development of online and hybrid courses; effective use of regularly scheduled office hours; supervision of student research projects, independent study, internships, theses and dissertations (whether or not as the dissertation’s chair of record); initiatives to encourage student research and community service work; mentorship of students for prestigious awards; other forms of engagement with students outside the classroom; the ability to achieve teaching excellence across a wide range of courses; or the ability to teach courses in both mathematics and statistics.

Regarding student evaluations of teaching (SETs), we accept that they can be suggestive of the level of teaching performance, but find that their meaningful interpretation requires consideration of all the questionnaire items, as opposed to focusing narrowly on one or two summary items. Similarly, our analysis of SET results takes into account the response rate and the pattern of responses for each questionnaire item, rather than a simple average. Mean item response statistics and comparisons between such statistics for a particular course and an aggregate for the department or college are statistically invalid. The median is the statistically valid summary statistic. Overall, we expect successful teachers to elicit positive responses from the preponderance of their students in the great majority of their courses. There are many aspects of teaching that students are either unable to observe or unqualified to evaluate, including the selection of course materials, decisions about what topics to cover and how to present them, and

defining a given course's instructional goals. Effective teaching is such a multi-faceted effort that single numbers, from just a few questions, cannot accurately measure, much less evaluate, an effective teacher. Widespread dissatisfaction in the teaching evaluations with a course and with the professor should be seriously addressed by the faculty member and the applicable Rank & Promotion Committee. On the other hand, no professor is likely to be able to satisfy all students, and the professor with the highest teaching evaluations may not be the best teacher. The department values intellectually rigorous courses even if they do not achieve popularity as measured by student evaluations of teaching effectiveness. We also recognize that common variations in student population can lead to occasional aberrant results, and that student attitudes may be less positive, on the average, for courses taken to fulfill a requirement outside their major field. Moreover, extensive studies of teaching evaluations have highlighted sources of bias such as gender, race, age, appearance, time of the class, teaching facilities and other factors beyond the instructor's control.

As a method of evaluating classroom teaching, peer review by faculty colleagues is as valuable to the Rank and Tenure Committee as the SET. In order to formalize this process of peer review, the Department of Mathematics and Statistics has established a mentoring policy. Under this policy, a mentor from the Rank and Tenure Committee is assigned to each pre-tenured faculty. In addition to regularly consulting on various matters related to teaching, the mentor is tasked with conducting classroom visits on a timetable jointly developed with the mentee. Together they discuss the content of these classroom observations. The observations of the mentor, viewed alongside the record of the faculty, are very important to the Rank and Tenure Committee and the department chair in the three-year pre-tenure reappointment review.

Because faculty are better equipped to help students “acquire knowledge, develop critical thinking skills, and become active participants in the learning process” to the extent that they themselves “remain current in their field,” the *Faculty Manual* strongly encourages “scholarly or professional engagement that enhances teaching” (section 15.a). Currency in the field may be demonstrated by one or more of the following: up-to-date syllabi and course readings; professional development in teaching and instruction as demonstrated by participation in conferences or training; efforts in internal/external acquisition of teaching methods and practices; new instructional modalities pertinent to the candidate's discipline or field; scholarly research; high-level creative and professional work; grant development; and/or patent development.

Scholarship

According to *the Faculty Manual* (section 10.a)

Faculty members' thorough understanding of and significant contribution to their field are essential to the mission of the university and to the advancement of knowledge.... The university shall base its assessment of a faculty member's achievements on the aggregate productivity and impact of the work since degree completion, including evidence that the faculty member is productive at AU.

To be recommended for reappointment, tenure and/or promotion, a candidate must be actively engaged in a continuing research program. The Department regards evidence of creative scholarship normally to consist of refereed articles, published books, reviews, and papers and

presentations for scholarly organizations. The product of one's creative scholarly activity must be accessible to, and evaluated by, the faculty member's peers in the discipline.

Candidates for tenure and/or promotion are expected to have a rate of scholarly contribution that reflects an active, continuing, and productive engagement with their field, as evidenced by a steady output of scholarly publications, together with evidence that intellectual productivity will continue. Candidates for promotion to the rank of Associate Professor are expected to demonstrate a record of independent research regardless of whether the publications are single- or multiple-authored. Faculty seeking promotion to the rank of Professor should have completed major scholarly work, the quality and stature of which should be substantiated by external evaluations or major awards. (Example of external evaluations include recommendation letters, published reviews, or referee reports.) They are expected to have achieved broad recognition for their contributions and to have made significant contributions to mentoring junior faculty research efforts, as needed.

The most common form of positive peer review is acceptance of an article for publication in a refereed academic journal. Publication rates vary widely between different areas of the mathematical sciences and are expected to be compatible with peer departments or nonacademic institutions in the corresponding subfield. Quality is always the primary consideration in judging research.

In evaluating the strength of a faculty member's publication record, we rely most heavily on the assessments of internationally recognized reviewers, who comment on the significance and originality of individual articles as well as the overall level of productivity. Scholarship in the mathematical sciences can also take the form of published books, but this is less common than articles and is not expected. Though less important than articles, presentations at conferences, publications in conference proceedings, or publications with broader outreach, when refereed, are also forms of peer reviewed scholarship, and contribute to an overall level of scholarly activity.

For the purposes of judging the quality of academic journals, our primary source of information is the assessment of department faculty members and outside reviewers. Whether a journal exists in print form or electronically is not relevant. In the mathematical sciences, citation rates, acceptance rates, and impact factors do not provide evidence of journal quality, much less of article qualityⁱ. Our interpretation of such factors is that they may augment indications of quality of published work, but high factors are not a prerequisite for a positive evaluation of the publication record. (Nonetheless, impact factors and citation rates are reported and considered as part of a holistic review.) Authors who submit articles to top journals tend to be self-selecting, rendering the acceptance rates of such journals irrelevant.ⁱⁱ

Citations of an individual article can be (but aren't necessarily) an indicator of positive significance. However, for a highly-cited article, many of the citations will appear several years after the article itself, and thus we cannot expect the articles of an early-career academic to be highly cited.

Not all published work is refereed and not all refereed work is published. All publications will be considered for their scholarly content and potential influence on the academic community. This

includes academic books, textbooks, and book chapters, and software development. Appropriate peer review of such works can take various forms, such as published critical reviews or unpublished reviews by editorial boards, for example. Grant proposals are an example of refereed work not intended for publication. Receiving grant awards and/or reviewer comments on proposals are considered forms of peer review of scholarship. In the mathematical sciences, external funding is very scarce and difficult to obtain. Nonetheless, it is the candidate's responsibility either to seek external funding or to make the case that such funding is inappropriate. Whether or not it is funded, a grant proposal whose reviewers deem it worthy of funding shall be considered as positive evidence of the quality of a research program.

Peer review can also take the form of recognition for noteworthy scholarly accomplishments in the discipline. Examples include awards, invited publications and presentations, appointment to editorial boards or as a referee for academic journals, appointments to national and/or international research institutes, patents, software used by others, etc.

Once a file for action has been submitted, candidates may add information at any stage during the internal review process.

In reviewing a file for action, we will consider a candidate's full career, emphasizing work completed while at American University. For candidates bringing substantial credit towards tenure, the balance can be adjusted accordingly.

Service

According to the faculty manual (section 10a)

Engagement at American University is an essential component of faculty responsibility. Faculty members must demonstrate engagement in the university community, including a meaningful level of teaching unit, academic unit, or university service, including advising of students, as well as participation in major campus-wide events, such as commencement. ... Faculty often provide service to local, national, and/or international communities and governments as well as hold leadership positions in scholarly associations. Such activities demonstrate an individual's acceptance of the responsibilities that come with being a member of the faculty in a university deeply committed to service to a wider community. Such service must be clearly related to the teaching and scholarly interests of the faculty member and/or advances the academic reputation of the academic unit or university.

Any academic institution flourishes by blending a variety of abilities, interests, and commitments. Faculty involvement in Department and/or University activities is essential, and service to the broader professional community is also desirable and valued. Ideally, a faculty member's record will reflect a balanced range of contributions in teaching, scholarship, and service, and we generally place a higher value on teaching and scholarship than on service. In particular, the service activities of pre-tenure faculty should be subordinated to the demands for excellence in teaching and scholarship. An outstanding service record will not outweigh deficiencies in the other two areas.

To assure strong and effective faculty governance, tenured members of the faculty have a special responsibility to contribute to the health of their department, school, and university. We expect from Professors not only individual excellence in scholarship and teaching, but leadership in service that builds the collective excellence of the department, school, and university. A candidate for the rank of Professor should have a record of proven performance that demonstrates a continuing willingness and ability to provide that leadership.

Service can take a variety of forms. The general rule is that any contribution that advances the goals of the institution or the profession can be a valid service activity. In evaluating a candidate's service record, the Rank and Tenure Committee and Chair are concerned to see a level of involvement that is consistent with good citizenship in the campus and professional communities, and evidence of effectiveness. Therefore, where possible, documentation should be provided of leadership roles, active responsibility, and tangible results produced by service activities.

Examples of different kinds of service activities are provided below. This is not intended as an exhaustive enumeration of legitimate forms of service, but rather to illustrate a few general categories.

Within the institution, service on committees is one common example. The quality of such service or the level of effort can be documented by detailing leadership roles, special responsibilities, and results produced by a committee.

There are also many other forms of service that we value, especially within the department. Some examples are contributing to the scheduling of courses or teaching assignments, involvement with student organizations and activities, organizing departmental events, and representing the department in university recruiting and showcase activities.

Departmental service in direct support of the academic program, including supervising theses and independent studies, academic advising, and applying for and/or securing funding for graduate students or undergraduate research, is also highly valued.

We recognize and value service to the broader academic community, for example editorial service, organizing conferences or sessions at conferences, service on committees and commissions, or in elected or appointed leadership roles in professional organizations. Outreach activities that promote public awareness and appreciation of the disciplines of mathematics and statistics or provide professional educational or research expertise are also valued. We also value contributions to University commitment for promoting diversity, equity, or inclusion within the University and in the academic community.

Notable external service activities in support of the discipline and of the university are expected of candidates for promotion to Professor.

“As members of the learned profession responsible for educating the community,” all faculty members at American University are expected “to exhibit civility, collegiality, and respect for different points of view in the academic community” (*Faculty Manual*, section 10).

ⁱ Journal quality measures in the mathematical sciences, such as impact factors and citation indices, have been studied extensively. The definitive article on the subject, “Citation Statistics: A Report from the International Mathematical Union (IMU) in Cooperation with the International Council of Industrial and Applied Mathematics (ICIAM) and the Institute of Mathematical Statistics (IMS),” by Robert Adler, John Ewing and Peter Taylor, *Statistical Science*, Vol. 24 (1), 1-14 (2009) details some of the issues for journals in our field. There are many technical issues that can affect an impact or citation index, including number of articles published, type of articles (surveys vs. tightly focused), actions by journal editors (requiring authors to add references to this journal), number of years in the window (math papers take longer to get referenced), what journals are covered by the rating agency (the most common rating company uses only 1/2 of the math journals published), etc. Whatever the merits of citation indexes for rating a journal, they say little about the quality of an individual article that appears in that journal, and even less about an individual author in a range of publications. The citation index of a journal depends heavily on the field. National studies have shown that the mathematical sciences have a citation rate less than 1/6 of the life sciences. The highly technical and specialized nature of most mathematics papers and journals puts our fields at a disadvantage on this score.

ⁱⁱ Acceptance rates of journals are unreliable metrics of journal quality, due to differences in the populations of contributing authors. A journal with the highest editorial standards would likely attract submissions of a much higher quality than a journal with indifferent standards. Even if the acceptance rates for two such journals were comparable, the average quality of the papers they published would not be.

This does not constitute an employment contract.