

Department of Mathematics and Statistics Tenure-track and Tenured Faculty Expectations

This document presents a set of guidelines to department-specific expectations for tenure-track and tenured faculty, particularly with regard to promotions to the ranks of Associate Professor and Professor. It is a supplement to the guidelines of the College of Arts and Sciences (CAS), which are available at <http://www.bu.edu/cas/faculty-staff/faculty-staff-handbook/faculty-personnel-matters/tenure-track-and-tenured-faculty-expectations/>.

Both research and teaching are critical missions of the University, College, and Department, and are the main components in all recommendations for tenure and/or promotion. Together, demonstrated research excellence and the demonstrated ability to make excellent contributions to the Department's teaching mission are required of all faculty members, and form the central pillars of evaluations for tenure and/or promotion.

We recognize that faculty members may emphasize research, teaching, and service to different degrees. Therefore, these guidelines are not a rigid set of factors for evaluation and advancement, but rather an overview of expectations. The focus is on candidates for tenure and/or promotion, but the guidelines also apply to merit evaluations of all faculty.

Research. All tenure-track and tenured faculty members are expected to contribute significant new knowledge, research, and expertise to their disciplines and to play leading intellectual roles in the professional life of their disciplines.

The most important indicator of the quality and significance of research in mathematics and statistics is the record of the faculty member's publications in peer-reviewed, archival research journals. The quantity of publications differs among the fields of mathematics, applied mathematics, statistics, and applied statistics. In place of strict numerical guidelines, the expectation is that faculty members have a sustained research program with a record of high-quality and substantial original research publications.

The impact of a faculty member's research and scholarly productivity is also assessed based on a series of other important indicators, including invitations to speak at other institutions; speaking at national or international conferences and symposia; external funding for research; invitations to visit and carry out research at premier national and international research centers and institutes; research honors and awards; citations of published research; professional recognition through editorial, advisory, and leadership positions; and, development and dissemination of research software packages. We recognize that the level of assessed impact may vary across some indicators; however, the expectation is that a faculty member's overall research program and scholarly productivity are both assessed as being excellent.

For merit review, the record of research will be assessed by the faculty on the Department-selected merit review committee and the Department Chair. For tenure and/or promotion, the research record and scholarly productivity will be assessed both by the letters obtained from external evaluators who are leading experts in the discipline and by the faculty in the Department, through a rigorous review conducted by a departmental tenure and promotion committee followed by a thorough assessment and vote of the departmental faculty. Letters attesting to the candidate's national recognition in their academic discipline are expected for promotion to Associate Professor, while letters attesting to international recognition are expected for promotion to Professor.

As to external funding for research, support is available from government agencies, private foundations, and other grant-awarding institutions for research, education, outreach, and training in mathematics, applied mathematics, statistics, and applied statistics. The levels of funding vary widely over the different topic areas and the grant-awarding entities. The evaluation of applications for -and success in obtaining- external support takes these different levels into account and can also be based on the applicant's grant referee reports.

Collaborative research within mathematics and statistics is a common aspect and fruitful endeavor in some, but not all, areas of mathematics and statistics. Overall, it is expected that the research of tenure candidates has moved substantially beyond reliance on dissertation and postdoctoral advisors with the tenure-track faculty member having developed a strong, independent research program, and that candidates for promotion to Professor have a broad and robust research program. External experts of exceptional caliber in their respective research fields, whose evaluations are sought as part of the assessment of tenure and promotion cases, will also be asked to evaluate the extent of the candidate's contributions to collaborative research within mathematics and statistics.

Interdisciplinary research with scientists, medical doctors, and faculty from a broad array of other intellectual disciplines, including at other universities and institutions, is also a common aspect and fruitful endeavor in some areas of mathematics and statistics. Moreover, we recognize that there is a spectrum of interdisciplinary research, with some faculty engaging in it as a supplement to their core areas of research in mathematics and statistics, and some faculty engaging in it as a central component of their research programs. Assessment will take these different levels of engagement into account.

The practices regarding order of authorship on research articles and scholarly publications vary considerably within mathematics and statistics, as well as in the areas of interdisciplinary research. Assessment of a faculty member's contributions to collaborative and interdisciplinary research will take these different practices into account.

Teaching. All faculty members are expected to be thoughtful and accomplished teachers, at both the undergraduate and graduate levels. Faculty members are expected to make an overall contribution to the teaching and mentoring missions of the Department, ranging from teaching large undergraduate classes, core undergraduate courses in

mathematics and statistics, and advanced courses useful for students across many disciplines on campus, up through teaching core graduate courses, advising Ph.D. students, and mentoring postdoctoral fellows. Contributions to the development of new courses and the updating of existing courses are also important and highly valuable teaching activities, critical for maintaining a vigorous and relevant curriculum. Teaching courses in other departments, the Kilachand Honors College, and the Core Curriculum is also valuable to the University. It is recognized that not all faculty will teach the same number of students or contribute to all portions of the teaching mission in equal amounts; however, excellence in the contribution to the overall mission is expected.

The assessment of a faculty member's contributions to the teaching mission will include information obtained from teaching evaluations and in-class visits by faculty.

Having Ph.D. dissertation students is a beneficial activity for many aspects of the Department's mission. It is common practice and expected of tenure-track faculty members in some, but far from all, areas of mathematics and statistics to have dissertation students. We recognize that there are areas of mathematics and statistics in which the common practice and departmental expectations are that faculty members begin to advise Ph.D. students after receiving tenure. Therefore, tenure-track faculty members are not required to have dissertation students. We also recognize that in some areas of mathematics and statistics, it is common practice for Ph.D. students to publish their thesis research under their own name, with only an acknowledgment to the advisor in the thesis article(s) about the extent of the advisor's role.

There is no set percentage for weighing research and teaching in tenure and promotion cases. Instead, the expectation is that candidates be excellent in both categories. Deficiencies in teaching cannot be overcome by research excellence, and *vice versa*.

Service. All faculty members are expected to contribute to the functioning of the University through various activities that are broadly construed as service activities. These include, but are not limited to, the following activities: advising undergraduate and graduate students; organizing the seminars and colloquia that are vital to the intellectual life of the Department; supervising the research of undergraduate students through the U.R.O.P., R.E.U., or other undergraduate research opportunities; sharing in the faculty administrative duties for the operation of the Department; running or providing faculty leadership for undergraduate and graduate student clubs and groups in mathematics and statistics; sharing in faculty leadership duties associated to the long-range planning for the Department; committee work at the Department, College, and/or University level; developing and successfully running new Degree Programs or Centers for research; and, serving as liaisons to the myriad of Centers, Colleges, Departments, Institutes, Programs, and Schools on campus that have intellectual ties to mathematics and statistics.

Expectations for on-campus service by Assistant Professors are largely limited to service at the departmental level, and are at a somewhat lower level than the expectations for Associate Professors and Professors.

Service to a faculty member's research community outside the University is also recognized as highly valuable, since it raises our Department's and University's profiles while performing useful functions. Such service includes, but is not limited to the following: work as an associate editor or editor of research journals and other professional journals in mathematics and statistics; refereeing or reviewing manuscripts for such journals; reviewing research and/or training grant proposals for government agencies, private foundations, and other grant-awarding institutions; service as an officer of or a committee member for professional societies, such as the American Mathematical Society, the American Statistical Association, the Society for Industrial and Applied Mathematics, the Mathematics Association of America, the Institute for Mathematical Statistics, the Institute for Operations Research and Management Science, the Bernoulli Society for Mathematical Statistics and Probability, the Society for Neuroscience, the Institute of Electrical and Electronics Engineers, the American Physical Society, and others; service on external review committees at other institutions; supervising the research of undergraduate at REU's held at other institutions; and, service on advisory boards of other institutions, government agencies, and private corporations and foundations.

Outreach work by our faculty, which elevates the level of mathematics and statistics awareness at the University and in general society, is also valued highly. This includes, but is not limited to, the following activities: providing statistical consulting and acting as a resource in the areas of mathematics and statistics to the BU research community; presenting lectures for general audiences; organizing events that raise public awareness of mathematics and statistics; as well as formal and informal work in mathematics and statistics education, such as participating in funded research in education, serving on education committees, working in school districts, and speaking at education-related conferences.

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