

Expectations for Promotion and Tenure in Environmental Sciences and Engineering

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This document provides a discussion of general expectations for promotion and tenure in the Department of Environmental Sciences and Engineering (ESE). The discussion is based on historical decisions in ESE and is not meant to preclude hiring, promotion and tenure decisions based on forms of scholarship that would be new to ESE.

ESE is a multi-disciplinary department; our faculty have backgrounds in the life and health sciences, physical and natural sciences, engineering and, to a lesser extent, social sciences. Each of these major categories has its own professional culture, with different norms by which scholarship and professional development are judged. Within each category there are multiple sub-disciplines represented, so that our promotion and tenure decisions must be made with the individual's professional context in mind. Decisions regarding promotion and tenure in the Department are, therefore, considered on a case-by-case basis using a weight-of-evidence approach.

Although we consider each individual faculty member's background and professional context in our deliberations, we also consider departmental norms with respect to work load. For example, I make an effort to ensure that teaching loads are reasonably consistent, particularly among junior faculty. In some fields, our typical teaching load might seem light (because peers at other institutions are more engaged in undergraduate teaching), while in others our teaching load might seem heavy. Such differences between ESE and programs at other institutions are often revealed in evaluations from external reviewers.

Virtually all of our decisions regarding hiring, promotion and tenure are made on the basis of excellence in research. Teaching and mentoring students are, however, major elements in our evaluations. In general, the criteria for excellence in research that are outlined in the School's Appointments, Promotions and Tenure (APT) Manual apply to our decisions. The APT Manual section on teaching is also a valuable guide. For these reasons, I emphasize to all junior faculty members that they read the manual carefully.

Promotion from Assistant to Associate Professor with Tenure

In evaluating the case for promotion and tenure of an Assistant Professor, we seek evidence that the individual has emerged as an independent scholar, that the rate of scholarly productivity has reached a level consistent with tenured peers in ESE and at other institutions, and that consistent productivity is likely to continue.

Publishing. Scholarly publication is the primary means by which we judge excellence in research. Most publications by faculty members in ESE are in the form of peer-reviewed journal articles. If one or more full-length books were part of an individual's research portfolio, we would solicit comments from external reviewers on the quality and potential impact of the book(s). Some of our faculty engage in research that results in the publication of peer-reviewed reports, and these are considered to be analogous to peer-reviewed journal articles (length of the report is not typically considered). Reports and other publications that are not peer-reviewed are generally given little weight in evaluating research productivity, although such publications that have a documentable impact certainly would be considered favorably. Faculty are encouraged to use reports that are not peer-reviewed as the basis for developing peer-reviewed publications.

We do not have standards for a minimum number of publications to achieve tenure. We focus instead on the quality of the publications, their demonstrated or potential impact, and the trend in publishing productivity. One reason for us not to set a quantitative standard is that different Assistant Professors enter their faculty positions at different stages of professional development. Particularly among the life and health scientists, it is not unusual to have had one or two post-doctoral experiences. In some cases the individual might already have embarked on a research career outside of academics before starting the tenure-track appointment in ESE. At the other extreme, we have hired individuals who have just completed the PhD and have no post-doctoral experience. For individuals who have prior post-doctoral or professional experience, we look closely at the scholarly productivity that represents work initiated after starting the tenure-track appointment. We certainly consider the work published prior to the tenure-track appointment, particularly its impact on the field, but an abundance of such work cannot make up for low productivity afterwards. We recognize that for most Assistant Professors there can be a lag in publications derived from research conducted after the tenure-track appointment began, and that this lag might be longer for someone who had no prior post-doctoral experience.

Because it is easy to obtain information on citation of peer-reviewed literature, citation records and journal impact factors have become common means of quantifying scholarly impact at academic institutions around the world. These data must be interpreted carefully. At the Assistant Professor level in ESE, it is reasonable to state that a *goal* of publication is to publish in journals that are judged to be of high quality by one's peers and/or that reach an audience most likely to be influenced by the work. Because of the range of fields represented in ESE, the absolute value of a journal's impact factor is almost meaningless; in one field, an impact factor of 5.0 might be middle-of-the-road while in another field the best journal might have an impact factor barely above 2.0. In addition, peer-reviewed publications that are practice-oriented typically have low impact factors and are read by practitioners who rarely publish; the impact or value of such publications is, therefore, not quantifiable by conventional citation metrics alone. I would not discourage a faculty member from publishing in such a journal if the practice-oriented audience were the most appropriate audience to reach. In addition, for Assistant Professors who experience a significant lag in publishing after beginning the tenure-track appointment, the publication record might be too new for a citation record to be meaningful.

Faculty in ESE usually publish with co-authors. The candidate under consideration should be the senior author on a majority of publications derived from work that was initiated after the tenure-track appointment began. Because of the different fields represented in ESE, it is not always possible to judge whether an individual was senior author based on the order of author listing. In general, we assume that an author listed in the middle of a group of authors had a lesser role in the research. In contrast, being listed as first author is a sign of primary responsibility for the writing, planning and, sometimes, execution of the research. In other cases, a student or post-doc is first author on papers for research that the faculty member supervised; in some fields the senior author is then placed second and in others the senior author is listed last. The corresponding author is usually considered to be senior author, but some faculty members allow a student or post-doc to be corresponding author. We assume that for a small list of authors (two or three), if the first and/or corresponding author is a student or post-doc then the faculty advisor is the senior author. Judgments regarding authorship are easier to make within the Department than outside it. Although not required under the School's APT regulations, it would behoove the candidate to identify on his or her CV which author(s) on each publication are his or her student(s) and which is the corresponding author.

Quality and Impact of Scholarship. Publication in high-quality journals is one means of demonstrating the quality of one's research. High rates of citation are indicative of an impact on one's peers in research, but for the reasons noted above the citation record might be much less informative at the time an Assistant Professor is evaluated for promotion and tenure.

We place considerable weight on letters of evaluation from external reviewers. A candidate in ESE might not have colleagues who work in a similar area among our full professors, making judgments regarding the quality and impact of the candidate's research difficult in the absence of external benchmarks. External reviewers who are more familiar with the candidate's area of expertise can place the candidate's work in context relative to peers at other institutions, and can comment on the quality of the work, where it is published, and its potential impact. If some of the research of the candidate is practice-oriented, we would seek to identify at least one reviewer who is familiar enough with practice to comment on the work's impact on practice.

Although the University's APT guidelines currently suggest that we ask the question "Would this individual be awarded promotion and tenure at your institution?", we interpret the response with caution. Our Department is relatively unique, so that it can be difficult to compare expectations at one institution with expectations in ESE. For example, at an institution with a higher expected teaching load the expectations for research productivity might not be as rigorous as in ESE. In other institutions, promotion to Associate Professor might come without tenure or after different periods in rank than at UNC.

An Assistant Professor in ESE should have begun to establish national recognition by the time of the promotion and tenure evaluation. The external reviewers provide one opportunity to demonstrate (or not) such recognition. Other indicators are the number and range of invited lectures, selection to important national or international committees, awards for research or publication (including awards won by the candidate's students), invitations to serve on journal editorial boards, and consistent success in research funding from national or international organizations.

Grantsmanship. We expect that an Assistant Professor will have begun to establish an independent funding record and will have received at least one research grant as principal investigator from a national or international organization by the time of the promotion and tenure evaluation. Otherwise we have no expectations for the amount of funding or the nature of the grants. We recognize that in some institutions, and perhaps in some health-affairs departments at UNC, there is an expectation that an R01 award from NIH should be obtained as a condition of promotion and tenure. Many faculty in ESE do not work in areas supported by any of the National Institutes of Health, but even for those who do, we believe such an expectation is unreasonably inflexible. We weigh all factors, including funding history, in our deliberations. A weak funding record is not by itself grounds to deny promotion and tenure, but because the Department's survival depends on collective productivity among the faculty in raising external funds, we cannot ignore such a record. Conversely, a strong funding record will not overcome a weak publication record.

Teaching and Mentoring Students. We evaluate several indicators of a candidate's success in teaching and in mentoring students. All classroom and laboratory courses in ESE are subject to formal student evaluation, and all evaluations that have been completed by the beginning of the promotion and tenure process are considered. We recognize that some new faculty members have weaknesses in teaching classroom or laboratory courses during the first year or two. In such cases we look for improvement in the course evaluations over time. We would encourage a candidate who has received particularly poor student evaluations to seek assistance in teaching

methods and approaches (such as through programs available from the campus Center for Faculty Excellence), and we would look for evidence of obtaining such assistance by the time of the promotion and tenure evaluation. Consistently weak teaching without evidence of efforts to improve could lead to a decision to deny tenure.

Our success as a department depends in part on our ability to attract outstanding students, which requires a commitment to fostering the achievement of their educational and career goals. We expect each faculty member to help recruit student applicants to the Department. We also expect that an Assistant Professor will sustain a number of graduate student advisees near the Department average (currently 5–6 students) within a few years from the initial appointment. There is no expectation for how many of these should be at the doctoral level and how many at the master's level. In general, we expect that the candidate will have graduated at least one PhD student by the promotion and tenure evaluation, with evidence that there are others in the pipeline. The typical Assistant Professor graduates a few master's students by the time the evaluation occurs, although it would also be acceptable for an individual to conduct all or most of his or her research with PhD students.

We expect that a faculty member will always consider a student's best interests and will play a pro-active role in advancing a student's professional development. Evidence for such a role includes encouraging students to present at conferences, inviting PhD students to lecture in a course, introducing students to colleagues and prospective employers, and encouraging students to take leading roles in designing and executing research projects as well as in authoring research publications. We expect that many of the publications derived from work supervised by our faculty members will be co-authored by students.

We typically seek feedback on a candidate's mentorship from his or her former students when we undertake an evaluation for promotion with tenure. This feedback is solicited by an evaluation committee member and is presented anonymously to the remaining full professors. We recognize that students consider some faculty members to be very demanding, but former students have the benefit of time and further experience to reflect on whether demanding expectations were effective and constructive. We would judge negatively comments from multiple former students that suggest the faculty member promoted his or her personal advancement at the expense of the student, that demands and expectations were excessive, or that interpersonal relationships with students were divisive.

Service. We value and encourage service to one's profession, the State of North Carolina, and national and international organizations. However, an individual's professional service record is of secondary importance for promotion from Assistant to Associate Professor. No amount of service would outweigh a weak record of publication, scholarship, or teaching and mentoring students.

We expect an Assistant Professor to have begun performing professional service that is typical for any faculty member, particularly service that can enhance the individual's professional reputation, such as serving as a reviewer for journals and funding agencies as well as participation in professional organizations. Higher levels of service, such as serving on a journal editorial board or on a national committee, would be considered as indicators of the national recognition and quality of the individual's research.

A long-standing departmental policy is to minimize the amount of internal (Department, School and/or University) service by Assistant Professors. As our demographics shift to a higher fraction of junior faculty and lower fraction of Full Professors, however, we might need to engage our Assistant Professors in more internal service. Regardless, we expect our junior

faculty to participate in faculty meetings and other Department-wide activities, and to contribute ideas to improve the fulfillment of the Department's mission. Academic citizenship is highly valued in ESE.

Promotion from Associate Professor to Professor

Most of the criteria that apply to promotion from Assistant to Associate Professor apply as well to the promotion from Associate Professor to Professor. In the promotion to Associate Professor, we seek evidence of strong *potential* for continued success and evidence that the individual's career is heading in the right direction. For the promotion to Professor, we expect that the individual will have *achieved* a sustained level of scholarly productivity and will have obtained national or international recognition for his or her research. We also expect that the candidate will have become a significant contributor to the success of the Department in all its forms, including committee service, external funding, and citizenship.

We recognize that some Associate Professors might have gaps in research productivity because of gaps in funding or because of a shift in research direction. In such cases we expect to see an eventual resumption of consistent productivity, although there might be a delay in the promotion past the minimum time in rank as Associate Professor.

Promotions of Research Faculty

No formal expectations or criteria for promotion of research faculty have been developed in ESE. The SPH APT Manual is a useful guide as a starting point.

The expectations for promotion of a research faculty member are not necessarily the same as for the tenure-track ranks. However, there should be a significant increase in the quality or quantity of scholarly productivity to justify a promotion. For example, evidence of independence (such as serving as PI on a grant from a national or international organization), or national or international recognition of the individual's research, would represent an increase in the quality of scholarship. Developing a sustained record of publication over a period consistent with the time in rank for a comparable tenure-track position would also justify the initiation of a promotion evaluation.