


Department of Physics
The College of New Jersey
Disciplinary Standards for Reappointment, Tenure, and Promotion

The attached disciplinary standards have been reviewed and approved by the Committee on Faculty Affairs, the Council of Deans, and the Provost.

To avoid creating a moving target for candidates for reappointment, the disciplinary standards in effect during a faculty member's first year of employment will be used for reappointment and tenure applications. Candidates for promotion will use the disciplinary standards in effect in the year in which they apply for promotion.



Department Chair

21 August 2015
Date



Dean

8/21/2015
Date



Provost

8-26-15
Date

The Department of Physics will next review its disciplinary standards in Academic Year 2019-20

Department of Physics
Discipline-based Standards for Faculty Scholarship

Spring 2015

(Approved by Departmental faculty on May 5, 2015)

I. Preamble

This document establishes the standards for scholarship within the Physics Department of The College of New Jersey, in the context of the mission of The College. TCNJ is committed to the teacher-scholar model, dedicated to free inquiry and open exchange, and to excellence in teaching, creativity, and scholarship. In the teacher-scholar model, students are integrated into this process, in order to best prepare them to excel in their chosen fields. The teacher-scholar model is further defined in the School of Science Mission Statement, as follows:

“Students interact with outstanding teacher-scholars as instructors, advisors, and mentors” because “faculty members integrate comprehensive undergraduate research experiences into their scholarship, actively preparing students to meet their future career or graduate school goals.”

The Department Mission Statement supports this general statement with the following:

“The Physics Department challenges its students academically and provides ample opportunity for scientific inquiry through primary research leading to the acquisition, analysis and interpretation of data. Students are encouraged to make critical observations, record data and participate fully in the presentation of research through lectures, seminars and posters as well as the preparation of manuscripts for publication in scientific journals.”

The faculty of the TCNJ Physics Department conduct research, author scientific publications and monographs, write grant proposals, and present their findings at professional meetings. These things are done in the context of the mission of the College, while serving as mentors to students.

The members of the TCNJ Physics Department Faculty are expected to develop viable, high visibility research programs that offer the potential of involving undergraduate students. We acknowledge that the challenge to faculty, of becoming outstanding in their scientific endeavors, is something that cannot be accomplished alone, but is a shared responsibility among the Department, the School of Science, and the College.

II. Faculty Scholarship

It is expected that faculty members establish themselves as productive scholars by developing an active research program. This research program must demonstrate its productivity through the faculty member’s activities in two or more of the following areas: grant proposal writing; mentoring undergraduates; writing papers, monographs, book chapters, textbooks or manuals; presenting papers at conferences and meetings; consulting.

A. Research

The establishment of a viable research program is a shared responsibility within the Department, the School of Science, and the College, but the individual faculty member bears the primary responsibility for her or his research program.

The Physics Department recognizes that student-centered research is an important aspect of a research program at TCNJ. Faculty should endeavor to develop projects suitable for undergraduate research participants and results from such projects will be valued, even if they do not yield publications in refereed journals. The Physics Department also recognizes that faculty-centered research may be necessary to drive the advancement of these projects as well as to provide a stimulating environment for the scientist. That is, there are certain projects that may not lend themselves to student involvement either because such research requires a high level of mathematical sophistication, or an advanced knowledge of the field. However, the engagement of faculty in such projects, which contribute to advancements in one's field, are to be regarded as very significant and worthwhile endeavors. This research should normally result in publication of results in a peer-reviewed journal, but in some fields, such as physics education research or computational physics, a publication in a peer-reviewed conference proceedings is an acceptable appropriate venue.

The Physics Department encourages faculty to engage in off campus collaborations as well, particularly in order to gain access to facilities that are not available on campus. When possible, student participation in such efforts is most desirable. The Department values work on small scale projects that result in refereed publications as much as large scale projects that typically require working as part of a collaboration.

B. Grant proposal writing

When students are directly involved in research projects, it is expected that the College will financially support that research. Faculty members are strongly encouraged to write grant proposals to support their research interests, but this is not a mandated undertaking. Funded competitive grants represent a high standard of productivity by virtue of intense peer-review. The scientist engaged in grant writing must also provide clear substantiation of the viability of a project and this usually includes showing preliminary results. Therefore, the writing and submission of grants is a very important process and significant endeavor as well, whether a faculty member is the principal investigator or a co-investigator, and whether or not the grant is funded. The pursuit of funding is a shared responsibility and some funding agencies expect institutions to provide matching funds or significant in-kind support.

The Department recognizes that co-investigators can make a significant contribution to grant proposals and awarded grants. Because their level of involvement varies from grant to grant, co-investigators should define their intellectual contributions to the proposal and the project.

Peer-reviewed grants that are supported by government or private agencies and provide multi-year funding are most significant in the consideration of the value of a grant to the faculty member and the Department. Single-year peer-reviewed successful proposals are also highly valued. An unsuccessful, but positively-reviewed, proposal for a multi-year grant is also valued significantly, whereas a positively-reviewed, but unfunded, single-year grant is also valued. Finally, the Physics Department also recognizes the importance of grants and monetary awards

supporting faculty or student research, including travel grants, which have been obtained through other avenues.

C. Mentoring undergraduates

It is expected that the faculty member will engage undergraduates in his or her research when appropriate. This work is valued more when students present their research at disciplinary meetings and co-author abstracts and it is most valued when students are co-authors of scientific papers published in peer-reviewed journals.

D. Writing monographs, book chapters, textbooks and manuals

In the sciences, a researcher may be invited to contribute a monograph or a book chapter based on their attainment of a level of expertise and recognition in their specialty. Recognition is made of the efforts of a faculty member in the process of writing such a monograph or a book chapter as a very worthy undertaking. The publication of a major book in one's field is much less common in the sciences but such a publication would be very highly valued.

While textbook and manual authorship should likewise be recognized as a form of scholarship, this should be differentiated in that a text is often an opus based on an accumulation, synthesis, and dissemination of information. In cases where there is significant synthesis of existing knowledge, this may reflect the "scholarship of integration." In other cases, where the work is primarily an accumulation of facts, this pertains more to the development of the "teacher" versus the "scholar." On the other hand, the preparation of a monograph or book chapter is often extended by invitation and is typically based on scholarly reputation in a highly specialized field. It is thereby more pertinent to the scholarly development of a field as opposed to the pedagogical development of the area.

E. Other presentation of research results

Presentations of papers and/or posters at professional conferences is expected of scientists. Presentations may be given at local, regional, national or international conferences and meetings and provide fora for the dissemination of new results, either prior to publication in refereed journals or book chapters or as sole outlets for smaller projects, particularly those involving work with students.

F. Consulting

In scientific fields, one of the highest accolades that can be bestowed upon a researcher is the recognition that he/she is an expert in their field. One such form of recognition is the call to serve as a consultant. Scientists are sometimes sought as consultants in the private sector and bring recognition not only to the individual scientist, but also to the department and the college/university in which the scientist works. Should the opportunity arise, consulting should be encouraged and recognized by both the Department and the College, although the effort expended on consulting must not have a negative effect on the faculty member's ability to perform her or his teaching, advising and service responsibilities at the College.

III. Evidence and Standards of Research or Other Scholarly Activity

A. Publication of research in peer-reviewed journals

The Physics Department acknowledges that publication of primary research results represents bringing a project to a recognized level of completion. As such, candidates for tenure and promotion must have papers published in or accepted by peer-reviewed journals from a professional society. These journals include, but are not limited to, those published by the American Institute of Physics, American Association of Physics Teachers, American Astronomical Society, American Chemical Society, American Geological Society, American Geophysical Union, American Meteorological Society, Materials Research Society, Astronomical Society of the Pacific, and Biophysical Society. Publications in international journals of similar impact or other highly regarded venues in the scientific community within the candidate's area of expertise are similarly very highly valued.

Appropriate areas of publication include the development of new knowledge and the application of knowledge in new ways in the physical sciences and/or closely related fields. The Physics Department recognizes and is sensitive to the nature of collaborative work but stresses that candidates for tenure and promotion are supposed to play a major role in the published work, even though the location of primary author in the list of authors varies among sub-disciplines and journals. In science co-authorship is extremely common and so a jointly authored paper in which the candidate has clearly made a major contribution is also highly regarded. Clearly, though, if the candidate is one of many authors on a publication, this publication will not have as much value to the candidate's case for promotion or tenure as a paper of comparable quality on which she or he is one of only a few authors, unless the candidate makes clear how her or his contribution to the work was very important.

With the advent of strong electronic-only journals in many sub-fields of our discipline, we acknowledge that publication in such venues is also worthy of recognition. In evaluating the venue in which research is published the Department may consider impact factor, acceptance rate, or other quantitative measures of the strength of the journal or refereed conference proceeding; however, these quantitative measures are recognized to vary widely between the different sub-disciplines present in the Physics Department, so that no precise minimum standards can be specified. If the high caliber of the venue is not obvious, it behooves the candidate to explain why that venue was an appropriate place for the publication of a particular piece of work. Prior consultation with the Departmental Promotion and Reappointment Committee in this regard may be appropriate.

The Physics Department at TCNJ is inherently interdisciplinary, with current faculty members specializing in astronomy, astrophysics, atmospheric science, biophysics, geoscience, materials science and physics education, as well as the various core areas of physics. Collaborative work between faculty in different areas of the Department as well as with faculty in other departments at TCNJ and elsewhere is encouraged. Papers arising from such interdisciplinary work are valued as highly as work in one specific subdiscipline if published in an appropriate journal for that area.

The Physics Department also recognizes imaginative pedagogy as scholarship, particularly if it introduces new knowledge or technology into the classroom.

B. Publication of research in proceedings or other monographs

The Physics department acknowledges that publication of research in conference proceedings or other monographs sponsored by scientific societies or universities is a significant contribution to one's field, especially if the research has not, nor will be, published elsewhere. However, such papers are generally valued less than those published in peer-reviewed journals.

C. Grants

The standards for evaluating grant proposals are as follows:

- Funded, multi-year peer-reviewed competitive grants that support the research of the faculty member meet the highest standard of productivity in this category.
- Funded, single-year peer-reviewed competitive grants that support the research of the faculty member meet a very high standard of productivity in this category.
- Grant proposals of the two types above that were not funded but received positive peer reviews, and/or a re-submission of a significantly revised grant proposal would be highly valued.
- Funded grants that are not peer-reviewed, which typically provide only modest amounts of support, or grants that solely support student research are also valued.

D. Presentation of scholarly work

Presentation of research at local, regional, national, and international meetings serves many purposes, from establishing a scientific reputation, to formulating upcoming publications. Such presentations may be in the form of an orally delivered paper or a poster paper. Such presentations are valued, but are certainly not as valuable to a candidate as are published papers in peer-reviewed journals. If the conference or meeting only accepts a subset of submitted papers it will have more value than a conference that accepts all submitted papers and the candidate should make clear at which type of venue the work was presented.

E. Recognition in one's field

1. Scholarly awards and prizes

Institutional, organizational, societal, and industrial recognition of research in the form of invited talks, lectures, a series of lectures and other rewards are an important form of recognition for any practicing scientist and should be significantly weighted and recognized by both the Department and the College during discussions for tenure and promotion.

2. Invited presentations

The Department of Physics recognizes the significance of an invitation to present one's research or a summary of long-term research results at domestic or international meetings, conferences, symposia, colloquia or workshops. Accepted invitations to present research results at departmental or institutional colloquia or seminars at other colleges or universities are also

valued. However, it is up to a tenure or promotion candidate to clearly convey the quality of such a venue in his or her tenure/promotion application.

3. Review of scholarly work

Yet another form of recognition as an expert in a field is the invitation to act as a peer reviewer for a granting agency/foundation, scholarly journal, monograph, or textbook. Again, as previously indicated, this is a form of recognition for the individual, the department, and the college, and will be appropriately weighted by the Departmental Promotion and Reappointment Committee and recognized during discussions for tenure and promotion. Actual service in these roles, or as an editor of a journal or book, will naturally be valued more than just an invitation to do so.

4. Consulting

An invitation to serve as a consultant to a company or government agency is yet another significant form of recognition of expertise by peers. Therefore, any such invitations are valued and actual remunerated service as a consultant is valued even more.

5. Other evidence

Attendance at or participation in a symposium or workshop may be considered scholarly activity at the discretion of the Department. This would be particularly relevant for someone changing scholarly sub-fields and would show a commitment to professional development that is appreciated by the Department.

In the unfortunate situation where a candidate's research program has been active but the results of one or more projects are insufficient to yield a publication in a refereed journal, the candidate may make a case for why that effort should be taken into account in a tenure or promotion decision; the Department may indicate that it values that effort.

F. Patents

Another venue for dissemination of significant research in some areas within our discipline is through the granting of a patent, as the work involved in obtaining one is usually substantial. Patent rights are commonly viewed as a necessary incentive for scientific and technical research and development in the private sector and, within the past two decades, have become a viable vehicle for faculty publication in U.S. and international universities and colleges.

IV. Expectations for Reappointment, Tenure and Promotion

Based on combining the two goals of producing new knowledge in the sciences and educating undergraduates in the process of creating new knowledge, we support a model whereby the record of a scholar in the physical sciences will be reflected by productivity as outlined in the categories below, and by mentoring undergraduates in laboratory and/or field research. Again we point out that the challenge to become outstanding scholars in their scientific endeavors, is something that cannot be accomplished alone, but is a shared responsibility with

the School of Science, the College, and the Department. Therefore the department is committed to supporting and mentoring its faculty throughout their academic careers. All new members of the faculty are assigned a mentor who will be available to assist the faculty member to understand the promotion and tenure process and who can provide advice to the candidate. The candidate can always request a new mentor if the fit does not appear appropriate to the candidate. The Department Chair will also be available to consult with the faculty member at all stages of his/her career. However, the compliance with and fulfillment of all reappointment or promotion requirements are ultimately the responsibility of the faculty member and not of the mentor.

A. Standards for Reappointment, Tenure and Promotion to Associate Professor:

As indicated in the document the *2014 Promotion and Reappointment Document*, “Throughout the probationary period candidates should show steady progress toward a productive program of scholarship or creativity. By the time of the tenure decision there should be a record of finished work conducted while at TCNJ and clear promise of continued scholarship”.

1. For pre-tenure reappointment:

During the first year there should be evidence that the faculty member has begun doing research at TCNJ, as shown by working to set up his/her lab, and planning preliminary studies, or by performing relevant analytical and/or computational work. By the second year review there should be evidence of progress toward productive scholarship, such as ongoing studies, planning for manuscript preparation, grant writing, and recruiting students into the research lab. During the third year there should be clear evidence of productivity as shown minimally by a submitted manuscript based at least in part on work done at TCNJ, a submitted grant proposal, or a presentation at a scientific conference. It is recommended that student involvement in research is begun as early as possible within the probationary period.

2. For tenure and/or promotion to the rank of Associate Professor:

Evidence of scholarly output based significantly (if not completely) on work done while at TCNJ that includes:

- at least two publications in refereed journals (or one publication and one accepted publication) and
- at least one additional refereed publication, or a funded, or a submitted and positively-reviewed, grant proposal that is deemed equivalent in content and competitiveness to a peer-reviewed publication and
- at least two presentations at national or international disciplinary meetings
- An indication of continual, active, and well-mentored involvement of undergraduates in research is strongly expected.

3. For tenure at a higher rank:

In those cases where the candidate has already attained a high enough level of productivity and accomplishment so that he or she is initially appointed at the rank of Associate Professor or Professor, he or she will need to provide evidence of the establishment of a viable research program and ongoing productivity at the College in order to be considered for tenure.

B. Standards for Promotion to Professor

The Promotion document states that “Promotion to Professor requires a sustained pattern of achievement since attaining the rank of Associate Professor, with evidence indicating the maturation of the scholarly/creative/professional record.” This will be reflected by accomplishments such as:

- publications in a peer-reviewed journal every few years, with a minimum of two refereed papers published since promotion to the rank of Associate Professor
- consistent production of additional evidence from any of the other categories in Section II
- consistent involvement of undergraduates in research

In those cases where the candidate has already reached a level of productivity and accomplishment commensurate with promotion to Professor previous to her or his appointment to the College but is initially appointed at the rank of Associate Professor, she or he will need to provide evidence of the establishment of a viable research program and ongoing productivity at the College in order to be considered for promotion.

These standards for tenure and promotion may be somewhat relaxed under circumstances when, as stated in the College Promotions document, “there may be periods when the level of scholarly activity is somewhat reduced (but not eliminated) due to a significant increase in teaching or service, such as serving as Department Chair, or other special circumstances. In such cases the reduction in scholarship should not be counted against the candidate, but there should be evidence that the candidate’s scholarly/creative/professional activity has been maintained to some degree and has promise of full resumption when the other activities return to normal levels.”