




Department of Chemistry

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	05/12/2021 _____ Date
 _____ Dean	5/14/21 _____ Date
 _____ Provost	6/3/2021 _____ Date

The Department of Chemistry will next review its disciplinary standards in Academic Year 2025-2026.

## **Chemistry Department Discipline-based Standards for Faculty Scholarship**

### **March 2020**

This document establishes the standards for scholarship within the TCNJ Department of Chemistry, in the context of the mission of The College and as a supplement to the *TCNJ Reappointment and Promotions Document*. TCNJ is committed to the teacher-scholar model, to free inquiry and open exchange, and to excellence in teaching and advising, scholarship/creative/professional activity, and service. In the teacher-scholar model, students are integrated into this process, in order to best prepare students to excel in their chosen fields. The teacher-scholar model is further defined in the School of Science Mission Statement, as follows:

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

TCNJ Chemistry faculty engage in scholarship/creative/professional activity by conducting research, authoring scientific publications, writing grant proposals, and presenting their findings at professional meetings and through invited talks. We do so in the context of the mission of the College, serving as mentors and advisors to students. Faculty are expected to be excellent mentors and to develop high visibility research programs that involve undergraduate students.

We acknowledge that the challenge to faculty of becoming outstanding in their scientific endeavors is something that cannot be accomplished alone and is a shared responsibility with the Department, the School of Science, and the College. Several disciplinary-specific roles and responsibilities of the institution, in addition to those described in the *TCNJ Reappointment and Promotions Document*, are listed below.

Scientists who join the TCNJ Chemistry Department Faculty are expected to develop viable, highly visible research programs that involve undergraduate students. The minimum eligibility for faculty, including those not yet tenured, is described in the *TCNJ Reappointment and Promotions Document*. However, it should be added that faculty members who join the TCNJ Chemistry Department Faculty typically come from a background where scholarship is done collaboratively in departments that are equipped with extensive instrumentation facilities and are supported by full time support professionals.

While the Department has sought to lay out the disciplinary standards for tenure and for promotion to associate or full professor clearly, it is not possible for this document to anticipate all contingencies or remove all ambiguity. Therefore, the Department emphasizes the importance of open and ongoing communication between the candidate and the PRC. The PRC will provide, during annual reviews pre-tenure or once-a-year at the candidate’s request post-tenure, written confirmation of the candidate’s progress in meeting the disciplinary standards using the criteria laid out in Section 3 and the sections preceding.

## 1. Evidence of Scholarly/Creative/Professional Activity

Departmental faculty members engage in the first four modes of scholarship described in the *TCNJ Reappointment and Promotions Document* (the scholarship of discovery, integration, application, and pedagogy) recognizing that scientific research, including pedagogical research, is the primary means to perform these modes.

### 1.1 Establishing a viable and sustainable research program/area

Chemical research can take several avenues and may involve the scholarship of discovery, integration, application, and pedagogy, as described in the *TCNJ Reappointment and Promotions Document*.

Success in research at TCNJ is a shared responsibility since the Department and the College should not hire a scientist whom it cannot provide with sufficient tools to perform research in their area of expertise.

Furthermore, it is understood that one may need to explore several avenues to find a research area/project that will be productive and appropriate given the environment at TCNJ, which differs significantly from the training ground of PhD chemists and the high-risk/high impact often associated with the scholarship of chemical discovery. For this reason, dedicated efforts in a single field and the pursuit of a breadth of interests in Science are both valued. It is understood that faculty members may diversify or change their areas of study over the course of their career. Such changes may be coupled with a sabbatical leave, professional development activities, or the opportunity stemming from a new collaboration.

The Chemistry Department recognizes that student-centered research is the cornerstone of a scientific research program at TCNJ. Faculty should plan to develop and sustain projects suitable for undergraduate research participants and should serve as scientific mentors and developmental advisors to students under their project umbrella. The Chemistry Department also recognizes that faculty-centered research may be necessary to drive the advancement of these projects and to provide a stimulating environment for the scientist. Furthermore, there are certain projects that may not lend themselves to student involvement. Projects that are developmental, “high risk,” or highly sophisticated may be more suitable for faculty enrichment. The Chemistry Department realizes that faculty may engage in off campus collaborations as well. When possible, student participation in such efforts may be beneficial. In all cases, when students are engaged in research, the candidate must clearly identify the role played by and value of student engagement in their scholarly/professional/creative work.

In situations where candidates are engaged in interdisciplinary research, it may be appropriate to use elements of *Disciplinary Standards* from more than one department. This decision should be discussed early on between the candidate and the PRC and in

consultation with the Dean of the School of Science. Final decision to allow elements of another department's *Disciplinary Standards* will be determined by the PRC and faculty candidate.

## **1.2. Grant proposal writing**

Proposal development, writing, and submission are integral parts of research and involve both the scholarship of integration and the scholarship of application. For grants that involve the development of new infrastructure, training, or programming, faculty also engage in the scholarship of pedagogy. Grant writing allows the faculty member 1) to thoroughly plan and develop a project before embarking on it, 2) to obtain feedback on the feasibility and importance of the work (through reviews) and 3) to obtain funding for their research activities. The Department recognizes and strongly encourages the preparation and submission of proposals to support scholarly activities.

Faculty members are encouraged to write and resubmit revised grant proposals to support their research interests. The scientist engaged in grant writing must provide clear substantiation of the viability of a project that usually includes preliminary results. Funded competitive grants represent a high standard of productivity by virtue of intense peer-review; however, it is understood that funding rates are low and an excellent proposal may still not be funded.

## **2. Measurement of Scholarship**

### **2.1. Dissemination of research project results**

As stated in the *TCNJ Reappointment and Promotions Document* :

*“... the expectation is that finished works will be submitted to an appropriate jury of peers for rigorous evaluation. The quality of work is defined by its significance in one's field of inquiry and necessarily requires such peer review to validate the work's significance.”*

The Chemistry Department concurs with this method of measurement and in the context of its discipline, necessitates that research project results be disseminated and evaluated by the general scientific community. This can be done in the following ways:

#### *2.1.a. Publication of research in peer-reviewed journals*

The Chemistry 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 accepted in peer-reviewed scholarly journals (printed or online). In this regard, the candidate is encouraged to target appropriate peer-reviewed journals in their field as the predominant outlet of their scholarly work. The Department values all peer-reviewed publications and encourages candidates to publish in journals with a wide general readership and/or those that serve an audience specific to their research areas. Appropriate areas of publication include the development of new

knowledge and the application of knowledge in new ways in the Chemical sciences and/or related fields. The Chemistry Department recognizes pedagogy as scholarship, particularly if the work introduces new knowledge or technology into the classroom/curriculum and results in peer-reviewed publication(s).

Research publications include papers, letters, reviews, and communications. All are acceptable to the Chemistry Department as forms for publication and serve as appropriate measures of scholarly achievement.

The Chemistry Department recognizes and is sensitive to the nature of collaborative work and that candidates for tenure and promotion are expected to play a major role in the published work. In the sciences, co-authorship is very common and regarded as usually essential for the implementation of high impact work. The primary investigator on a scientific publication can place their name first or last in the list of authors. Thus, the number of authors and the order in which authors appear in a publication is not a basis for measurement in the discipline. Candidates for reappointment and promotion must clarify their contributions to the papers in their publication list by annotation and in their professional development essay.

#### *2.1.b. Presentation of Scholarly Work*

Dissemination of the faculty's research through either faculty presentations or co-authored student presentations at local, regional, national, and international meetings serves many purposes, from establishing a scientific reputation to formulating upcoming publications. Invited presentations and peer reviewed presentations are considered forms of measurements of the quality of faculty research.

#### *2.1.c. Monographs, Books and Book Chapters*

Recognition of the expertise of a scientist is often manifested in the publication of a peer-reviewed monograph, a book, or a book chapter. As a researcher is often invited to contribute a monograph or a book chapter based on their attainment of a level of expertise and recognition in their specialty this form of publication is also a measurement of the candidate's overall recognition within the field. Textbook authorship should likewise be recognized as a form of scholarship (providing a measurement of the candidate's scholarship of pedagogy).

#### *2.1.d. Publication and Issuing of Patents*

Another venue for dissemination of research, particularly in the chemical and biological science fields, is through the granting of a patent. Patent rights are commonly viewed as a necessary incentive for scientific and technical research and development in the private sector and, over the past two decades have become a vehicle for faculty publication in U.S. and European universities.

In addition to the possible generation of revenues through royalty and licensing agreements with the private sector, patenting can also prove beneficial to the faculty member, the Department, and the institution by fostering external collaborations and funding agreements with the private sector which often result in the purchase of major equipment and instrumentation which is shared with the local academic community. In addition, after submission of a patent application (either provisional or full), results are often published in the open scientific literature, thereby protecting the rights of the inventor(s) and the sponsoring institution.

## **2.2. Grant Reviews and Funding**

The Department values quality grant writing because it demonstrates the candidate's ability to plan and develop a fruitful, long-term scholarly research program. Budgetary limitations and changing priorities at funding agencies mean that many quality grant submissions will not be funded. Therefore, the Department recognizes favorable grant reviews/scores as evidence of grant writing success, in addition to having a grant funded. The Department encourages candidates to submit grants and to resubmit favorably reviewed grants with revisions, additional preliminary data, and responses to reviewers' comments.

The Department distinguishes between "major" and "minor" competitive grants. The former can be supported by government or larger private agencies and typically provide multi-year funding for equipment, supplies, and/or salary; this type is most significant in the grants category. The following is an incomplete list of agencies that review and fund major competitive grants: National Institutes of Health (NIH), National Science Foundation (NSF), Department of Defense (DOD), Department of Energy (DOE), Naval Research Labs (NRL), Army Research Office (ARO), National Aeronautics and Space Administration (NASA), the American Chemical Society (ACS), the Camille and Henry Dreyfus Foundation, the Sherman Fairchild Foundation, and the Research Corporation for Science Advancement (RCSA).

When the candidate is on a successful grant, as defined above, the Department credits the candidate with a "major" competitive grant. The department recognizes that many grants are collaborative, and candidates may also be listed as PI, co-PI, or senior personnel. In these cases, it is the responsibility of the candidate to clarify their role in grant submission in the CV and Professional Development Essay. The candidate should describe their contributions to the scholarship, writing, and execution of the grant. The candidate will be credited with a successful "major" competitive grant when their contribution to both the proposal and the project are judged as pivotal, that is, successful review and execution of the proposal require the candidate's contributions.

Minor grants are typically internal or granted by companies or individuals, and may be non-competitive, short duration, and provide limited funding for supplies or travel. Examples of minor internal grants would include MUSE, SOSA, mini-grant funding, and small non-competitive grants provided by outside organizations or industrial donors. The Department values the awarding of these minor grants because they promote the scholarship of the scientist and the participation of undergraduates in research.

## 2.3. Recognition in the Field

In addition to traditional peer review, the quality of faculty scholarship can be measured by their contributions to their field, through recognition by scientific societies, institutions, and scientific peers. This measurement is typically associated with a larger body of scholarship and is particularly useful in providing “evidence for the pattern of continuing scholarship in support of promotion” (*TCNJ Reappointment and Promotions Document*). There are many forms of scholarly recognition, some examples are listed but they should not be viewed as comprehensive:

### *2.3.a. Scholarly Awards and Prizes*

Organizational, societal, and industrial recognition of research in the form of invited lectures and/or prizes are an important form of recognition for any practicing scientist and are recognized by both the Department and the college during discussions for reappointment and promotion.

### *2.3.b. Citations of Published Work*

The impact of published work may be assessed by a review of its citation history and the publication’s impact factor. This information is typically obtained through the ISI Web of Knowledge or Google Scholar, although it should be emphasized that many high-quality and highly cited publications do not show up with a simple search. It should also be understood that citations in the sciences are often accrued over many years after publication of the cited article.

### *2.3.c. Review of Scholarly Work*

Another form of recognition as an expert in a field is the invitation to act as an editor for a journal, as program officer for a granting agency/foundation, or as a peer reviewer for a granting agency/foundation, scholarly journal, monograph, or textbook. This is a form of recognition for the individual, the Department, and the college, and recognized during discussions for reappointment and promotion.

### *2.3.d. Consulting*

Another form of recognition is the call to serve as a consultant. Academicians are often sought as consultants in the private sector and bring recognition not only to the individual scientist and also to the Department and the college/university in which the scientist works. As such, consulting is encouraged and recognized by both the Department and the college.

### *2.3.e. Invitations to Disseminate Scholarly Work*

In scientific fields, one’s scholarly work can be recognized by receiving invitations to disseminate the scientist’s research and/or expertise. Examples include invitations to write

or edit books, book chapters, or monographs, invitations by a professional organization to present or organize conferences and workshops, and invitations to present or organize seminars/colloquia series at other colleges and universities.

### *2.3.f. Collaboration of Scholarly Work*

Rich collaborations expand the scholarly capacity of TCNJ and undergraduates may benefit from these collaborations. A candidate may seek collaborations and/or may be sought for their expertise to collaborate on scholarly work. The collaboration may be described in major grant applications or through co-authorship on presentations or peer reviewed publications. The candidate should describe the intellectual contribution of the collaboration and their role in the work.

## **3. Expectations for Reappointment, Tenure and Promotion**

### **3.1. Reappointment**

The Department evaluates the trajectory of a faculty member's career, as indicated in the *TCNJ Reappointment and Promotion Document*, which states:

*“Throughout the probationary period candidates should show steady progress toward a productive and coherent program of scholarship or creativity. By the time of reappointment with tenure or of a promotion decision, there should be a record of finished work conducted while at TCNJ and clear promise of ongoing and maturing scholarship”*

The Department PRC is therefore responsible as outlined in the *TCNJ Reappointment and Promotion Document* for mentoring candidates and providing guidance over the course of the reappointment period. It is also the responsibility of the candidate to address any issues identified by the PRC within the probationary period. Finally, it should also be recognized that modifications of the guidelines set forth below can be applied to a faculty member hired at the Associate or Professor level.

### **3.2 Minimum Requirements for Reappointment for Tenure and Promotion**

#### *3.2.a. Reappointment for Tenure and Promotion requirements for candidates appointed at the rank of Assistant Professor*

Candidates should describe in the essay their record of work and future plans to demonstrate a “clear promise of ongoing and maturing scholarship.” Successful evidence of scholarly output based on work done at TCNJ is demonstrated by the following minimums:

1. One publication in peer-reviewed journals of national or international stature (as described in section 2.1.a) and



2. any combination of *two* of the following, including two from one category:
  - a) PI or co-PI on a major grant funded or favorably reviewed (as described in section 2.2),
  - b) an additional publication of a paper in peer-reviewed journals of national or international stature (as described in section 2.1.a),
  - c) presentation of research at a regional, national, or international venue which subsequently appears in a published peer-reviewed proceeding,
  - d) book chapter, monograph, or textbook (as described in section 2.1.c),
  - e) patent with substantiated claims (as described in section 2.1.d)

In addition, candidates for tenure will have demonstrated sustained progress toward a productive program of scholarship that is evidenced by:

- a) mentored research with undergraduates, and
- b) presentations at TCNJ venues, and
- c) presentations at local, regional, or national professional meetings, or

The submission of preprints online on repositories such as, but not limited to, ChemRxiv, BioRxiv, aRxiv, etc., is also considered to be evidence of sustained scholarly activity.

Candidates appointed as Assistant Professors who have met their requirements for tenure have also met the requirements for promotion to Associate Professor.

*3.2.b. Reappointment with Tenure requirements of candidates appointed at the rank of Associate Professor or Professor*

In those cases where the candidate has already attained a high enough level of productivity and accomplishment so that the candidate is initially appointed at the rank of Associate Professor or Professor, the experienced scholar candidate will need to provide evidence of the establishment of a viable research program and continued productivity at TCNJ (not necessarily from start to finish), as indicated by any combination of *two* of the following, including two from one category:

1. one publication of a paper in peer-reviewed journals of national or international stature (as described in section 2.1.a),
2. PI or co-PI on a major grant funded or favorably reviewed (as described in section 2.2),
3. book chapter, monograph, or textbook (as described in section 2.1.c)
4. presentation of research at a regional, national, or international venue which subsequently appears in a published peer reviewed proceeding,
5. patent with substantiated claims (as described in section 2.1.d)

In addition, candidates for tenure appointed at the rank of Associate Professor or Professor will also demonstrate a productive program of scholarship that is evidenced by:

- a) mentored research with undergraduates, and
- b) presentations at TCNJ venues, and

- c) presentations at local, regional, or national professional meetings.

### 3.3. Minimum Requirements for Promotion to Professor

Candidates for promotion to professor should articulate, in their professional development essay, how their scholarly program has matured, how they have achieved recognition in the field (Section 2.3, which may also be listed in the service section of the CV), and what their future goals and aspirations are. Some suggested ways of describing their scholarly maturation may include: addressing research questions that are broader in scope (which may take longer to answer and may result in publishing in higher profile journals), developing higher risk research projects (which may fail and/or take longer to complete), moving in new research directions (which can leverage the candidate's maturation in scholarly approach), developing interdisciplinary research projects (that may involve learning novel research techniques and/or developing extensive collaborations with other scholars), training more diverse and/or an increasing number of research students (which may lead to more diverse student co-authors on publications and/or presentations), and/or completing grant funded projects (which may lead to institutionalized programs, new avenues of grant writing, and/or increased scholarly output). Each candidate has a unique scholarly pathway, and that diversity is celebrated.

The candidate will have achieved maturity in their scholarship and recognition by the scientific community since appointment to Associate Professor as evidenced by:

1. publication of two papers in peer-reviewed journals of national or international stature (as described in section 2.1.a) and,
2. and any combination of *at least two* of the following, including two from one category:
  - a) PI or co-PI on a major grant funded or favorably reviewed (as described in section 2.2),
  - b) an additional publication of a paper in peer-reviewed journals of national or international stature (as described in section 2.1.a),
  - c) book chapter, monograph, or textbook (as described in section 2.1.c),
  - d) patent with substantiated claims (as described in section 2.1.d)

The Chemistry Department recognizes that scholarly development varies and candidates may begin to demonstrate maturity early in their careers at TCNJ by exceeding the minimum requirements for tenure and promotion (Section 3.2). A candidate may carry over one piece of evidence of scholarly output beyond the minimum requirements for tenure (Section 3.2) to satisfy one item in category 2 in the minimum requirements for Promotion to Professor (section 3.3).

Sustained patterns of achievement for Professor, since attaining the title of Associate Professor may include:

- a) presentations, by the candidate and/or their student(s), at local, regional, national, or international scientific meetings (approximately 1 annually, as described in section 2.1.b), and
- b) regularly mentoring TCNJ students in the candidate's scholarship as demonstrated by student co-authors on presentations and/or publications and/or other measurable student outcomes (e.g. graduation, jobs, admission to graduate and health-related programs), and
- c) scholarly oral presentation(s) by the Candidate at TCNJ venues, or
- d) in lieu of obtaining external grants, applying and obtaining minor internal grants (mini-grants, SOSA, sabbatical, MUSE, etc), minor external grants, or minor contributions to collaborative major grants (as described in Section 2.2), or
- e) the submission of preprints online on repositories such as, but not limited to, ChemRxiv, BioRxiv, aRxiv, etc., are also considered to be evidence of sustained scholarly activity.