

Definition of Scholarship Guidelines Department of Chemistry

From the Faculty Handbook:

“Professional activity and growth ranks second to excellence in teaching in the evaluation of faculty. Professional activity should be consistently apparent with successive appointments and be clearly evident at such key points as the granting of tenure and promotion to the rank of professor. The Personnel Committee will evaluate scholarly or creative work deemed to be professionally appropriate to each candidate's field, recognizing the variety of possible forms.

Several modes of professional activity are considered in the evaluation of professional activity, but the most important mode is evidence of the candidate's engagement in the intellectual life of his/her field of study beyond the boundaries of the campus community. While all items on the list below are valuable, the first is necessary.”

Given below is each list item with added guidelines from the department:

“**a.** Research and writing that appear in peer-reviewed publications, noteworthy performances or exhibitions, or other appropriate peer reviewed professional activities in the candidate's field(s) of study.

External reviews by recognized experts in the candidate's discipline of productions or exhibits occurring at Whitman shall qualify as peer reviewed measures of professional activity;”

Guidelines: We expect our faculty to publish in peer-reviewed journals. We recognize all forms of peer-reviewed publications as worthy of merit. Peer-reviewed publication can include print and electronic journal articles, print and electronic chapters in books, software, entire books (print and electronic), invited and contributed papers that appear in conference proceedings, contributions to the chemical literature intended for wider circulation (magazines, web encyclopedias, etc.), and patents.

Since the rate of publication varies from one sub-discipline of chemistry to another, we expect that reviewers within the department will comment on the appropriateness of the candidate's rate of publication in their letters of evaluation.

Chemical research is very rarely the endeavor of a single investigator, and therefore multiple authorship is the norm. For the purposes of candidate review, the candidate must clearly articulate their role in the development, oversight, and writing of the work. Additionally, since a peer-reviewed publication may cross boundaries as defined by the tenure and promotion guidelines, the candidate must also define the value of their work in the chemical literature at large. For

example, a peer-reviewed journal article, reference or computational software package, training video or book (and other works) may serve educational needs as well as researchers in some fields of chemistry. We, as a department, value both the the peer-reviewed nature of the publication as well as the utility of the work to the intended population. We cannot list specific journal titles that are acceptable or preferred since there are literally hundreds of journals in chemistry with individual subdisciplines having their own preferred ones.

At the time of review for tenure, our faculty should have published peer reviewed works after coming to Whitman and shown that they have established an independent research agenda, preferably involving our students. For promotion to full professor, our faculty should show evidence of an ongoing successful program of professional development. The rate and form of the professional activity may change over time, but there should be evidence of steady work. It should also be noted that not all scientific experiments are successful and the effort itself is commendable. However, part of being a scientist is asking a meaningful and testable research question. Both of these factors must be balanced. Co-authorship with students in all areas of peer-reviewed publications is highly regarded by the Chemistry Department.

The Chemistry Department considers student involvement to be a highly appropriate component of faculty scholarship and a fundamental element of an undergraduate education. Co-authorship with students is viewed positively in all areas including the peer-reviewed and non-peer reviewed items. The ultimate reward that a student can earn in the Chemistry Department is first authorship of a peer-reviewed work as this illustrates superior understanding of the technical literature, substantive involvement in the research, and ability to write in a scientific manner. This level of achievement by a student is also indicative of the faculty's commitment to the development of our students.

“b. Peer-reviewed publication in related areas, including but not limited to, matters of pedagogy and curricular design;”

Guidelines: There are various journals, not only in chemistry, but also in cross-disciplinary fields, that publish articles related to teaching or short commentaries on pedagogical aspects of chemical education that are acceptable. In addition to journal articles, publishing a textbook, developing software, filing a patent, giving an invited conference presentation, or developing a workshop would also fit in this category, as well as in category “a,” above. Co-authorship with students in these publications is highly regarded by the Chemistry Department.

Determining the primary authorship of publications as well as the level of contribution to the research is not straightforward when multiple authors are involved. Modern scientific research is a highly collaborative, teamwork-based, and multigenerational venture. It typically involves the work of researchers ranging in experience from undergraduate students to faculty, often working side-by-side, and distributed in labs across the country or even across the globe. The

general rule is that anyone who makes a *substantive contribution* to the research should be an author—even if that person never writes a single word of the resulting manuscript. There are two privileged types of authorship: *first author* and *corresponding author*, where the first author is the first person in the author list. The first author has put the most effort into the work and creates the first draft of the paper. The corresponding author is the mentor of the group who has developed the ideas and project framework. The *corresponding author* is designated by a * or similar symbol adjacent to the person's name. The corresponding author is often—but not always—*the last person in the author list* (it could be anywhere in the list, including first). The corresponding author is the Ph.D. scientist (typically professor) who is in charge of the project. *Being corresponding author designates intellectual ownership of the research.* No matter how many authors are on a publication, no matter what a person's role is in a research project – authorship indicates a substantive contribution.

“c. Non-peer reviewed publications and professional activity as defined in (a) and (b) above;”

Guidelines: Serving as a referee for one or more journals, writing reviews of published articles for the chemical literature, editing journals or books, and writing professional reviews fit into this category. These activities require a great deal of time and thought, and reflect an acknowledgement of a person's reputation in the field. Developing laboratory manuals, lectures, PowerPoint presentations, handouts, software, and classroom materials that are widely disseminated and used at other colleges and universities throughout the country is also valued.

Professional consulting work done cooperatively with or on behalf of representatives from academia, industry, or government is also a valuable scholarly activity.

Specific non-peer reviewed publications that we recognize as worthy include reports for corporate research and consulting, a formal set of class notes that is used at Whitman and other institutions of higher learning and conference presentations (noting that conference presentations may be peer-reviewed as noted in b.)

“d. Active involvement in professional organizations; ”

Guidelines: This item includes such activities as holding an office or being part of a committee in a professional organization. Since the nature of these activities can vary a great deal, a candidate should make clear what the duties entail and check with the department as to their value. Sponsoring a conference here at Whitman or being an organizer for a session at a national meeting are also valuable contributions in this area.

“e. Participation in professional meetings and conferences, including presentations made with student co-authors;”

Guidelines: Attending professional meetings, presenting papers at meetings or conferences, taking students to conferences, chairing and organizing special sessions at professional meetings, committee work within a professional organization, and serving in leadership roles at conferences are important as a support to other scholarly activities.

“f. The writing and submission of proposals for external grants.”

Guidelines: This guideline covers the writing and awarding of external grants for the acquisition of scientific instrumentation for research and teaching; for the development of educational and reference materials, workshops, and new courses; and for the support of their individual research (including instrumentation, summer salary, materials and supplies, travel, summer stipends for students, etc.).

The department strongly encourages faculty to seek external funding through the submission of grant proposal to government or private agencies. Funding opportunities to support undergraduate research however are limited and highly competitive, and only a small percentage of proposals are generally successful (rarely higher than 30% and sometimes as low as 10%). Success in securing external funding is based on peer-review and often involves revision and resubmission of proposals after addressing reviewers' comments. Unfortunately, due to the low funding rate, proposals are often not successful even though reviewers rank the submission very highly. Therefore, submission of external grant proposals is viewed favorably even if they are not accepted for funding.

Consistent with the Department's emphasis on the importance of involving students in research, an externally funded research program involving students at Whitman is very highly valued.

The remaining points from the Faculty Handbook are:

“The Personnel Committee will also consider activities, such as the development of new areas of expertise in the discipline, that may bring the candidate into the larger intellectual dialog of his or her field, as well as interdisciplinary professional activities. The judgment of the Committee will not be based solely on the quantity of the candidate's professional activity, but also will consider its quality, breadth, and contributions to the candidate's teaching and the mission of the College. The Personnel Committee will consider the candidate's written statement, letters from the candidate's peers both within and without the College, and direct examples of the candidate's professional activity. We value the development and collaborative

nature of interdisciplinary classes, and recognize the time and effort required to develop such new activities.

