Department of Mechanical and Aerospace
Engineering College of Engineering and Applied Science
University of Colorado Colorado Springs

Guidelines for Annual Merit Review

October 11, 2022

Introduction:

The annual merit review process for faculty is governed by Article V of the Laws of the Regents and CU Regent Policies 5 and 11. These are further delineated in CU Administrative Policy Statements 1006, 1009 and 5008.

- CU Laws of the Regents Article V: https://www.cu.edu/regents/law/5
- CU Regent Policy 5: https://www.cu.edu/regents/policy/5
- CU Regent Policy 11: https://www.cu.edu/regents/policy/11
- CU Administrative Policy Statement 1006: https://www.cu.edu/ope/aps/1006
- CU Administrative Policy Statement 1009: https://www.cu.edu/ope/aps/1009
- CU Administrative Policy Statement 5008: https://www.cu.edu/ope/aps/5008

These documents require the establishment of departmental "performance standards" which will include "goals and components for evaluating teaching" which are to be used throughout the review process. Annual merit review assists faculty in their professional development by providing frequent feedback on progress and helping faculty to set goals for continued development.

These performance standards are to be considered guidelines for the annual merit review process in the Department of Mechanical and Aerospace Engineering at the University of Colorado Colorado Springs. The departmental standards are based on appropriate and current standards of professional performance in our discipline. Each faculty member will be reviewed and judged on their individual merits and circumstances. The department is committed to quality teaching, strong research, and effective service to the department, the college, the university, the profession, and the community. The annual merit review process assumes possession of an appropriate terminal degree (for tenured/tenure track faculty); competent education and training in the discipline(s); conduct which reflects the professional and academic standards for generating, validating, disputing, and transmitting knowledge; and an appreciation of and respect for the rights, duties, and privileges associated with academic freedom and collegial responsibilities.

In conducting annual performance evaluations, performance over multiple years may be considered to account for activities that may not yield measurable results in a single year. This allows some flexibility to give appropriate consideration to pedagogical and research innovation, recognizing that positive impact may not be immediately evident.

Consistent with the faculty member's duties, their contribution to teaching, research and scholarly work, leadership and service, and, where applicable, other activities specific to

their unit, shall be evaluated based on these written performance standards and any additional written expectations agreed to by the faculty member and the unit.

Teaching evaluations shall use multiple measures, including normed student feedback (e.g., Faculty Course Questionnaires) and will include multiple measures of teaching effectiveness. In annual merit evaluations, the assigned workload of a faculty member shall be considered.

In the assessment of research and scholarly work, the department places greater weight on items that have undergone some form of external peer review over those that have not. In cases where an item does not undergo peer-review (for instance, reports, or articles in the popular press), such material may be submitted to outside readers for evaluation. Our department encourages collaborative research; therefore, co-authored papers are valued. Furthermore, student involvement in research is highly valued, therefore, papers and other works co-authored by students are valued.

Faculty will be evaluated separately in the areas of teaching, research, and service and leadership, as determined by their workload, based on the following terms and assigned a corresponding numerical score which will typically be in the range specified. Note that the numerical ranges may be adjusted based on guidance from the college and/or campus.

- Outstanding (4.5 – 5)
- Exceeding Expectations (3.5 – 4.49)
- Meeting Expectations (2.5 – 3.49)
- Below Expectations (< 2.49)

These criteria can be amended by majority vote of the department subject to approval by the Dean of the College of Engineering and Applied Science.

Faculty who disagree with the Chair's evaluation should first discuss their disagreement with the Chair during their evaluation meeting. If the disagreement is not resolved and is substantial (typically at least a 0.3 difference in ratings), they may appeal their evaluation to the Dean.

Annual merit evaluation standards:

We value the efforts of our faculty in the area of diversity, equity, and inclusion both in support of our students and in support of one another. These efforts can exist within any of the traditional divisions of teaching, research, and service/leadership, and include aspects of mentoring, recruitment, and retention of students and faculty from groups that are underrepresented in mechanical and aerospace engineering. These efforts will be considered in the annual merit evaluation in accordance with their quality and quantity.

Appendix A provides a more extensive (but not exhaustive) list of faculty activities which may be considered in the annual merit evaluation process. In the following sections we provide additional guidance on departmental expectations and examples of the most important standards to weigh in the annual merit review process. In all cases both the quantity and quality of the work will be considered.

We recognize that new methods of dissemination and ways to impact science, technology,

and society are constantly evolving. The examples in these standards are not intended to exclude the use of new technologies and new methods of dissemination and impact.

For tenured and tenure-track faculty, the listed numerical value guidelines are based on an annual workload of 40% teaching, 40% research, and 20% service/leadership. Instructor-rank faculty evaluations are based on an annual workload of 80% teaching and 20% service/leadership.

Instructor-rank faculty are not evaluated on research activities and are not expected to mentor students in research. Furthermore, their level of effort in service and leadership should be consistent with the typical 20% service/leadership load for instructors. If Research faculty and Clinical faculty are being evaluated, these guidelines will be adjusted appropriately for their defined workload. Differentiated workloads and reduced overall workloads for all faculty will be considered when applying these standards.

Impacts of major life, health, professional, and personal factors may be taken into account when appropriate in understanding the context in which the work was performed and may reduce expectations.

Faculty in their first few years of service may be evaluated with slightly lower expectations as they become familiar with teaching our students and develop a research program. This is particularly true of service expectations in the first few years.

Teaching:

The faculty member will be expected to demonstrate effective teaching evaluated by multiple means that will include, at a minimum, Faculty Course Questionnaires and two other means of evaluation. **Numerical ratings of student evaluations can be used for no more than one third of the overall teaching rating.** *Examples of other means of evaluation are provided in Appendix A of this document*. This evaluation includes contributions to the instructional breadth, depth, and needs of the department and to the updating of curriculum and course materials. Mentoring of graduate students will be included in the teaching evaluation, and both the quality and quantity of the mentoring will be considered. In addition to classroom teaching, the candidate's work with students outside of the classroom as a general mentor, research advisor, independent study director, lab supervisor, and similar activities shall be considered here. It has been shown that a standard "Evaluate this instructor" question on student evaluations of teaching sometimes shows a bias in results based on gender, ethnicity, and age. To help avoid this, we consider the following six questions:

- Question 4: The course made it possible for me to increase my knowledge, skills, and understanding of the subject.
- Question 7: The instructor explained course ideas in a clear and understandable manner.
- Question 8: The instructor encouraged interest in this subject.
- Question 9: The instructor demonstrated interest in student learning.
- Question 10: The instructor demonstrated respect for and professional treatment of all students.
- Question 11: The instructor communicated effectively with students about this

course.

In assessing FCQ scores, the numerical rating for the above questions will be compared to the average for the same questions of the College of Engineering and Applied Science. Numerical ratings that are near or at the College average are viewed as meeting expectations; numerical ratings that are above the College average are viewed as exceeding expectations; and numerical ratings that are substantially above the College average are viewed as outstanding. In cases where the professor teaches small classes, provisions shall be made for the possibility of the average being lowered because of the effect of a few low FCQ scores. In those cases, the individual student evaluations shall be provided to the evaluator(s) for a more detailed analysis. Course content, appropriateness of the level of the instruction, and size of class will be considered in interpreting student evaluations.

In addition to FCQ scores, teaching evaluations will consider the following factors (possible means of demonstrating each factor are provided). Effective mentoring of undergraduate and graduate students is considered an important aspect of teaching as indicated below. Effective mentoring is reflected in the publications, retention, and graduation of students, as well as in student assessment of their mentoring experiences. Additional areas of evaluation are included in Appendix A. In all cases, both the quantity and quality of the activity will be considered. When appropriate, the impact on student learning should be demonstrated. Exceptional accomplishments in one factor may be considered when accomplishments in other factors are not as strong.

The following provides a guideline for determining the various possible ratings associated with teaching based on the nominal workload assumptions described above. Expectations will be increased or decreased accordingly for higher or lower teaching workloads.

A rating of **meeting expectations** would be consistent with the following:

a) All faculty are expected to deliver their assigned courses appropriately. This means teaching at the appropriate level, grading and returning homework in a reasonable time frame, and having exams/projects that are commensurate with the course level and material. It also involves creating an engaging and inclusive environment. (Success will be measured by occasional checking of exams, homework, and by monitoring student comments.)

b) We are a PhD-granting department, therefore, tenured/tenure-track faculty are typically expected to mentor graduate students.

c) An average FCQ rating that is near or at the average for the College of Engineering and Applied Science, as described above.

d) Accomplishments in other areas of teaching evaluation listed in Appendix A can contribute to a rating of meeting expectations.

A rating of **exceeding expectations** would be consistent with a faculty member demonstrating significant contributions in most of the following:

a) Achievement of meeting expectations guidelines above.

b) An average FCQ rating that is above the average for the College of Engineering and Applied Science, as described above.

c) Effective mentoring of 1-2 graduate and/or undergraduate students for tenured/tenure-track faculty on a 40% teaching load.
d) Engaging with students (in addition to research mentoring) outside the classroom in at least one activity, e.g., independent study courses, student club, student advising, Open House presentations, etc.
e) Accomplishments in other areas of teaching evaluation listed in Appendix A can contribute to a rating of exceeding expectations.

A rating of **outstanding** would be consistent with a faculty member demonstrating significant contributions in most of the following:

a) Achievement of exceeding expectations guidelines above.
b) An average FCQ rating that is substatially above the average for the College of Engineering and Applied Science, as described above.
c) Effective mentoring of 3 or more graduate and/or undergraduate students for tenured/tenure-track faculty on a 40% teaching load.
d) Engaging with students (in addition to research mentoring) outside the classroom in multiple activities, e.g., independent study courses, student club, student advising, Open House presentations, etc.
e) Accomplishments in other areas of teaching evaluation listed in Appendix A can contribute to a rating of outstanding.

Research:

The department recognizes that scholarships can take many forms. Our department emphasizes fundamental discovery, scholarly work that integrates existing knowledge, and applied research. We also recognize the scholarly study of teaching and learning issues in our field as a form of research. Exceptional quality of scholarly work may be considered to raise an evaluation in cases where the quantity is less. Presentations at professional meetings and non-referred publications may be considered as evidence of ongoing research activity.

Research and creative work evaluations will consider the following factors (possible means of demonstrating each factor are provided). Additional areas of evaluation are included in Appendix A. In all cases, both the quantity and quality of the activity will be considered.

Exceptional accomplishments in one factor may be considered when accomplishments in other factors are not as strong.

The following provides a guideline for determining the various possible ratings associated with research based on a nominal research workload of 40% for tenured and tenure-track faculty. Expectations will be increased or decreased accordingly for higher or lower research workloads.

A rating of **meeting expectations** would be consistent with a faculty member demonstrating **a few** of the following:

a) Quality and quantity in their scholarly/creative work contributions, as evidenced by the record of high-caliber, peer-reviewed publications.
Examples include:

       I.   One refereed publication per year (generally required).

      II.   Presentations at conferences.

b) A record in attracting undergraduate and graduate students, stimulating their research efforts, and promoting and directing significant thesis research. Examples include:

       I.   Advising an undergraduate or graduate student in research.

c) Initiative and success in attracting research funding. Examples include:

       I.   A funded grant or service contract.

      II.   Submission of a grant proposal.

     III.   Preparation of a grant proposal for future submission.

e) Accomplishments in other areas of research evaluation listed in Appendix A can contribute to a rating of meeting expectations.

A rating of **exceeding expectations** would be consistent with a faculty member demonstrating **some** of the following:

a) Quality and quantity in their scholarly/creative work contributions, as evidenced by the record of high caliber, peer-reviewed publications. Examples include:

       I.   Two refereed publications per year (generally required).

      II.   Presentations at conferences.

b) A record in attracting undergraduate and graduate students, stimulating their research efforts, and promoting and directing significant thesis research. Examples include:

       I.   Advising two undergraduate and/or graduate students in research.

c) Initiative and success in attracting research funding. Examples include:

       I.   A funded grant or service contract.

      II.   Submission of one or two grant proposals.

d) Accomplishments in other areas of research evaluation listed in Appendix A can contribute to a rating of exceeding expectations.

A rating of **outstanding** would be consistent with a faculty member demonstrating **most** of the following:

a) Quality and quantity in their scholarly/creative work contributions, as evidenced by the record of high caliber, peer-reviewed publications. Examples include:

       I.   Three or more refereed publications per year (generally required).

      II.   Presentations at conferences.

b) A record in attracting undergraduate and graduate students, stimulating their research efforts, and promoting and directing significant thesis research. Examples include:

       I.   Advising three or more undergraduate and/or graduate students in research.

c) Initiative and success in attracting research funding. Examples include:

       I.   A funded grant or service contract.

      II.   Submission of multiple grant proposals.

d) Accomplishments in other areas of research evaluation listed in Appendix A can contribute to a rating of outstanding.

<u>Additional Guidance</u>: The department recognizes that many factors may impact a faculty member's performance during a particular year. Some flexibility is allowed. For example, while publications are expected, a faculty member could still be meeting expectations in a year with no publications if there is significant other research activity. However, if a faculty member has no publications for consecutive years, then this may negatively impact their evaluation. The department also recognizes that new faculty require some time to build their research program. Lower expectations for new faculty would be appropriate for the first few years. In addition, peer-reviewed journal publications typically carry more weight than peer-reviewed conference publications, unless the candidate can provide evidence of selectivity of the conference that accepted their paper.

Service and Leadership:

The department recognizes service to the department, college, campus, community and to our profession. In evaluating service, the quality, time commitment, and quantity of service contributions will be considered. We recognize that different faculty will fulfill this requirement very differently.

All tenured, tenure-track, and instructor-rank faculty members are generally expected to do some departmental service. Examples of this include the following:

   a) Service on the various department standing committees
   b) Service on ad-hoc committees, such as personnel search committees or new program development committees
   c) Departmental Chair

Service and Leadership evaluations will consider the following factors (possible means of demonstrating each factor are provided). Additional areas of evaluation are included in Appendix A. In all cases, both the quantity and quality of the activity will be considered. Exceptional accomplishments in one factor may be considered when accomplishments in other factors are not as strong.

The following provides a guideline for determining the various possible ratings associated with service and leadership based on the nominal workload assumptions described above. Expectations will be increased or decreased accordingly for higher or lower service workloads.

A rating of **meeting expectations** would be consistent with a faculty member demonstrating **one or two** of the following:

   a) Appropriate departmental service, e.g., one or more of the positions described above and service on departmental committees, such as promotion and tenure review, and personnel search committees.
   b) Professional recognition outside the university community:
      I. Membership on professional and scientific committees, councils, boards, and review panels.
      II. Refereeing manuscripts/grant proposals for journals and agencies.
      III. Acting as an external referee on promotion and tenure decisions at other institutions.

       IV.   Aiding in professional conferences through serving as a session chair, organizer, or similar positions.

c) Development of college programs and facilities that contribute to scholarly/creative work and teaching activities.

d) Participation and leadership in faculty assignments and committees within the department, college or university, including faculty governance and diversity, equity and inclusion activities.

e) Outside industrial, governmental experience or K-12 activities to the extent that it contributes to the candidate's effectiveness as a faculty member.

f) Accomplishments in other areas of service and leadership evaluation listed in Appendix A can contribute to a rating of meeting expectations.

A rating of **exceeding expectations** would be consistent with a faculty member demonstrating **several** of the following:

a) Appropriate departmental service, e.g., one or more of the positions described above and service on departmental committees such as promotion and tenure review, and personnel search committees.

b) Professional service outside the university community:
       I.   Membership on professional and scientific committees, councils, boards, and review panels.
       II.   Refereeing manuscripts/grant proposals for journals and agencies.
       III.   Acting as an external referee on promotion and tenure decisions at other institutions.
       IV.   Aiding in professional conferences through serving as a session chair, organizer, or similar positions.

c) Development of college programs and facilities that contribute to scholarly/creative work and teaching activities. Participation and leadership in faculty assignments and committees within the department, college or university including faculty governance and diversity, equity, and inclusion activities.

d) Outside industrial, governmental experience or K-12 activities to the extent that it contributes to the candidate's effectiveness as a faculty member.

e) Accomplishments in other areas of service and leadership evaluation listed in Appendix A can contribute to a rating of exceeding expectations.

A rating of **outstanding** would be consistent with a faculty member demonstrating **many** of the following:

a) Appropriate departmental service, e.g., one or more of the positions described above and service on departmental committees such as promotion and tenure review, and personnel search committees.

b) Professional service outside the university community:
       I.   Membership on significant professional and scientific committees, councils, boards, and review panels.
       II.   Refereeing manuscripts/grant proposals for journals and agencies.
       III.   Acting as an external referee on promotion and tenure decisions at other institutions.

       IV.   Aiding in professional conferences through serving as a session chair, organizer, or similar positions.

c) Development of major college programs and facilities that contribute to scholarly/creative work and teaching activities.

d) Participation and leadership in important faculty assignments and committees within the department, college, or university, including faculty governance and diversity, equity, and inclusion (DEI) activities.

e) Outside industrial, governmental experience or K-12 activities to the extent that it contributes to the candidate's effectiveness as a faculty member.

f) Accomplishments in other areas of service and leadership evaluation listed in Appendix A can contribute to a rating of outstanding.

Appendix A. Areas of Evaluation

The items listed below are intended as examples of areas to be used in evaluating teaching, research, leadership and service. The items below are not intended to be an exhaustive list.

Teaching:
- Provision of high quality of classroom teaching, as evidenced by student evaluations, mid-course evaluations, peer evaluations, or instructor course evaluations.
- Contributions to on-going evaluation and maintenance of the curriculum.
- Development and maintenance of course materials.
- Supervision of student research.
- Contributions to course and program assessment or accreditation.
- Curriculum development efforts.
- Course improvement efforts.
- Professional development and innovations related to teaching.
- Creation of new courses.
- Authorship of technical textbooks.
- Scholarly research and presentation or publication on teaching and learning.
- Recognition of teaching strength through college, campus, or system teaching awards.
- Receipt of professional awards related to the education process.
- Receipt of grants for teaching and education improvements.
- Mentoring or teaching students beyond the immediate instructional setting.
- Teaching a course that is new for the instructor (but not new to the curriculum).

Research:
- Record of external funding through research proposals.
- Peer-reviewed publications at conferences and in archival journals.
- Record of funding and research opportunities for students.
- Equipment grants for research.
- Technical reports submitted to an external body.
- Contributions to efforts that establish strategic research partnerships with industry and/or government.
- Monographs and/or books on advanced topics within the discipline.
- Invited or volunteered presentations of research.
- Patent disclosures submitted.
- External research proposals submitted.

Service and Leadership:

- Service on departmental, college, campus, or system committees and special assignments.
- Academic advising of undergraduate students.
- Service as a student club or extracurricular activity advisor.
- Service in departmental, college, campus, or system administrative positions.
- Attendance and contribution to department and college faculty meetings.
- Engagement in recruiting, retention, or student scholarship activities.
- Reviewer for technical journals and technical conferences.
- Participation in professional technical organizations such as ASME, AIAA, AIChE, ASHRAE, including awards and election to Fellow.
- Participation in technical or higher education-oriented service in the community.
- Involvement in technical conference organization (e.g., session chair/organizer).
- Service on review panels for funding agencies (e.g., NSF, NIH, etc.).
- Service as an editor of technical journals.
- Service as a faculty mentor.
- Education outreach to students from K-12 schools, colleges, and universities, e.g., in areas related to science, technology, engineering, and mathematics (STEM).