



<b>College</b>	<b>New College of Interdisciplinary Arts and Sciences</b>	
<b>Unit</b>	<b>School of Mathematical and Natural Sciences</b>	
<b>Document</b>	<b>Bylaws</b>	
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**Provost office approval**

<b>Vice Provost for Academic Personnel</b>	<b>Date</b>

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## **BY-LAWS**

### **School of Mathematical and Natural Sciences New College of Interdisciplinary Arts and Sciences Arizona State University**

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## **I. NAME**

The School of Mathematical and Natural Sciences (MNS) is composed of several academic degree programs that are mathematical or scientific in origin. Faculty members in MNS have their tenure home within the School as a whole, but they may also affiliate with academic programs based on their education, research, and teaching.

## **II. MISSION STATEMENT**

The mission of the School of Mathematical and Natural Sciences is to conduct high quality teaching and research in the mathematical and natural sciences. This teaching and research focuses on interdisciplinary activity that emphasizes the connections between disciplines.

## **III. PURPOSE AND GOALS**

The members of MNS are committed to the goals of the College and the University, as defined by the Strategic Plan and all updates thereof.

## **IV. VOTING ELIGIBILITY**

- A. Tenured and tenure-track faculty members with full or partial appointments in MNS are eligible to vote on all matters that come before MNS. Lecturers with full-time appointments in MNS and clinical professors with full or partial appointments in MNS are eligible to vote on all matters that do not appear in item B. Visiting faculty members are not eligible to vote. MNS tenured and tenure-track faculty members on leave remain eligible to vote on all matters that come before the MNS faculty.
- B. Voting on the following issues is restricted to tenured and tenure-track faculty members only:
  - i. Promotion and tenure policies and by-laws relevant to promotion and tenure,
  - ii. Hiring of tenured and tenure-track faculty members.
- C. The following matters require a majority (50%+1) of all votes cast to pass:
  - i. Creating and revising by-laws,
  - ii. Invoking a written or electronic ballot to be cast outside of a meeting (see D).All other matters require a plurality of all votes cast to pass.
- D. Depending on the matter at hand, voting may be by unanimous consent, voice vote, hand vote, or by ballot. A written ballot to be cast at a meeting will be used if requested by any voting member. A written ballot will be cast on all personnel issues. Personnel issues are defined as hiring, retention, tenure and promotion. A written or electronic ballot to be cast outside of a meeting, but to be completed within 96 hours of the meeting, may be used if proposed, seconded, and approved by a majority of all votes cast.

## **V. MEETINGS AND TIMELY NOTIFICATION OF UPCOMING VOTES**

Preliminary agendas will be distributed (usually by email) 2 business days in advance of all School meetings by the Director. To facilitate voting by eligible faculty members, upcoming votes will be indicated on the agenda.

## **VI. APPOINTMENT AND REVIEW OF SCHOOL DIRECTOR**

- A. See approved by-laws of the New College of Interdisciplinary Arts and Sciences.

## **VII. STANDING SCHOOL COMMITTEES**

- A. Personnel Committee. The Personnel Committee will consist of at minimum four tenured faculty members representing the various degree programs in the School and who are available and eligible to serve (i.e., not on leave or engaged in related service at the College and/or University level). Members shall be elected by the School to a term of three years. The Personnel Committee is responsible for assisting and advising the Director in the conduct of Faculty Annual Reviews and Post-Tenure Reviews. The Personnel Committee is not involved in sabbatical requests or promotion and tenure reviews. Promotion and Tenure are detailed in Section IX. Sabbatical requests will be processed as detailed in the NCIAS By-Laws.
- B. Curriculum Committee. The Director will appoint members of the Curriculum Committee. The committee will be composed of a minimum of four full-time faculty members of any rank representing various degree programs, and the School curriculum/advising coordinator. The committee's purpose is to assist the Director and Associate Director in curricular initiatives including revising and creating programs, disestablishing programs, creating/deleting course prefixes, evaluating degree requirements, and other curricular matters.
- C. Other committees shall be formed and their membership appointed by the Director on an as-needed basis.

## **VIII. REPRESENTATION ON STANDING COLLEGE COMMITTEES**

The School has representatives on all non-appointed college committees. Individuals will make their preferences to work with a particular committee known to the Director, and there will be a School vote when there is more than one candidate for a position.

## **IX. ACADEMIC PERSONNEL POLICIES**

Academic personnel policies are contained within two separate standing documents within MNS. These are the Annual Review Guidelines and the Profiles for Promotion and Tenure, having both been approved separately by the office of the Provost. Annual Review Guidelines are included here, for accessibility, as Appendix A. Profiles for Promotion and Tenure are similarly included as Appendix B. Any academic personnel issues not addressed explicitly by these documents fall under the approved by-laws of the New College of Interdisciplinary Arts and Sciences.

## **X. AMENDING THE BY-LAWS**

The following procedures shall be followed in amending the school by-laws. 1) the proposed amendment is submitted in writing to the Director; 2) the Director will make the proposed amendment available to all voting members of the School (by email or in writing) 30 days in advance of the vote; and 3) the proposed amendment must be approved by the voting members according to the voting procedures outlined in Section IV.

## APPENDIX A

### SCHOOL OF MATHEMATICAL AND NATURAL SCIENCES ARIZONA STATE UNIVERSITY AT THE WEST CAMPUS ANNUAL REVIEW GUIDELINES

Approved October 11, 2012

These guidelines will be used by the School Personnel Committee (PC) each year in recommending annual review scores for all tenured, tenure track, clinical, and lecturer faculty members to the School Director. The membership of the PC will be constituted of tenured faculty members if possible and be representative of the diversity within the School. It is important to recognize that faculty annual review (FAR) and promotion and tenure processes are decoupled; hence, positive annual review scores are not necessarily indicative of a favorable promotion and tenure review. While it is clear that there will be overlap between the documents that govern the two processes, faculty members who anticipate applying for promotion and tenure should pay particular attention to the *Profiles for Promotion and Tenure of Faculty Members* document. For this reason, the MNS faculty shall consider modifying these annual review guidelines if the School promotion and tenure document(s) is (are) modified.

#### EVALUATION CRITERIA

For purposes of annual review, activities of faculty members are divided into three categories: Scholarship, Teaching, and Service. Each of these categories receives a score for the review period; an overall score is determined by weighting the contribution of each category as described below. The scope of evaluation is for the prior three years of service (or a shorter time if the faculty member has been at the University less than three years). To initiate the annual review process, each faculty member will submit a 4-page summary each spring outlining their activities over the review period, and explicitly calculate their expected annual review score (in each area and overall) based on their accomplishments. The University considers teaching one course within the academic year as 10% of one's duty. The effort allocations of scholarship, teaching, and service are critical to the assignment of the overall review score and these FAR guidelines list these in Table 1

Table 1.

Workload (Teaching Load)	SCHOLARSHIP CREATIVE ACTIVITY	TEACHING	SERVICE
40-40-20 (2/2)	40%	40%	20%
30-50-20 (2/3)	30%	50%	20%
20-60-20 (3/3)	20%	60%	20%
0-100-0 (5/5)	0%	100%	0%

Note: adjustments in loads and/or percentage distributions may be made in consultation with the School Director and faculty member (with the approval of the dean) so as to meet the needs of the School as well as the individual needs of the faculty member. It should be noted that

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Assistant Professors typically are not expected to spend more than 10% of their time in the service category.

The ACD (506-10) policy manual specifies that each individual's performance must be evaluated at one of the following levels: Level 1 = Unsatisfactory Performance; Level 2 = Partially Meets Expectations; Level 3 = Meets Expectations; Level 4 = Exceeds Expectations Level 5 = Exceeds Expectations in a Sustained Manner.

## **SCHOLARSHIP**

The specific fruits of scholarship are many and varied. However, for the purposes of evaluation, precedence will be given to four areas: publication, presentation, grant/contract writing and grant/contract acquisition, and supervision of student research. In the annual review narrative each faculty member will provide an assessment of their research accomplishments in the areas outlined below, paying particular attention to publication rate (per year), and quantity and quality of research related contributions (see qualitative ranking scale provided below).

Publication is an important step in any scientific investigation. Publications possess relative merit and it is the responsibility of the faculty member to provide an estimation of this merit using the following criteria: relative contribution of the faculty member for coauthored manuscripts (e.g., a percentage value representing overall proportional contribution to the finished product); quality of the journal (both common knowledge and weighting factors, such as impact indices); and the impact of the contribution to the discipline. A publication can only be considered in calculation of a publication rate if it has appeared during the FAR dates. For example, "in-press" or "accepted" articles may not be considered as publications (nor shall manuscripts that have been assigned an official DOI but have not yet been published). For online publications, the date that the article appeared must be within the FAR dates. Given the importance of undergraduate education in the School, these publications may be pedagogical in nature.

Presentation of research, in seminar or poster format, to professional and academic bodies is an important way to communicate research findings and is a natural outcome of the research process. Presentations are particularly important for communicating work in progress and for receiving feedback from other scientists in the field. Finally, they can be a vehicle by which a faculty member can establish herself/himself as an expert in the field.

Grant and contract writing is often, but not always, fundamental to the research success of a faculty member in the sciences. Although successful acquisition of funds from intramural sources is valuable, the pursuit of extramural funding is typically more important, and competitive grant and contract applications funded by extramural sources are of greatest value. These include research grants, training grants, instrumentation grants and any type of grant that enhances the research infrastructure or educational mission of the School. In the highly competitive grant-seeking environment of today, submission of proposals is seen as an essential research activity. The quality of proposals will be determined based on their funding status and the panel reviews.

Faculty members are expected to involve students in their research programs where appropriate with the goal of developing the cognitive and manual skills required to investigate original research topics. These may include student's critical thinking skills required for developing research questions, building hypotheses, and designing sound experimental protocols as well as technical acumen necessary for performing the research. Such mentoring is fundamental to the academic success of individual students and to the achievement of School goals and is evaluated as described below.

### **Evaluation of Scholarship**

Three levels of scholarly contribution quality are recognized: A, B, and C. These three levels provide a means by which the quality of contributions can be ranked in addition to quantity (e.g., publication rate and total number of contributions) in assigning annual review scores. In multi-authored endeavors, the faculty member should state the significance of his/her contribution to the project. For all items, the faculty member should state the appropriate level (see below) with a brief explanation of this choice (e.g., impact factor of journal, refereed publication with an undergraduate, etc.)

**A:** Highly respected refereed publications, major external research grant submissions or funded research (in terms of dollars or granting agency), published book (scholarly/textbook) first editions, significant undergraduate mentorship (e.g., refereed publication with an undergraduate co-author), and other equivalent scholarship related items (as justified by the faculty member and agreed upon by the PC) will be considered "A" contributions.

**B:** Respected refereed publications (average level or above), significant external research grant submissions or funded research grants, published book chapter (scholarly/textbook), refereed or invited conference talks, substantial undergraduate mentorship (e.g., regional or national oral/poster presentation with an undergraduate co-author/co-presenter), and other equivalent scholarship related items will be considered "B" contributions.

**C:** Other refereed publications, Campus or University level research grants, or conference travel grants, submitted research grants or less significant funded research proposals, published book (scholarly/textbook) revisions, non-refereed conference paper, non-refereed conference talk or talk given in other departments at ASU or other institutions, undergraduate mentorship (e.g., non-refereed publication or local/university presentation), and other equivalent scholarship related items will be considered "C" contributions.

The scholarship criteria apply to three of the four workload emphases: 40-40-20, 30-50-20, 20-60-20. If during any period, a faculty member on a 2/2 or 3/2 load does not meet the criteria for a 3 in scholarship, but does meet the criteria for a 3 on the 3/3 track, their rating may be modified to a 3, provided he/she changes to a higher teaching load consistent with the School Director's recommendation.

The publication rate given within each of the following levels represents the typical rate attained by a faculty member. The School recognizes that a faculty member may have a period of time in which the focus is not on publication but rather on exploring fundamental aspects behind a given

research topic or a sabbatical leave in a private company's lab. In such circumstances, the faculty member should explain the particular situation and long term plan; the PC may recommend a higher score than strictly given by the publication rate.

**Level 1: Unsatisfactory, responsibilities of the position not fulfilled.**

Failure to satisfy the criteria for Level 2.

**Level 2: Partially Meets Expectations.**

The faculty member satisfies the manuscript productivity criteria in Table 2 but the designated quality of the contributions for the given workload identified in Level 3 have not been met.

**Level 3: Responsibilities of the position fulfilled.**

The faculty member satisfies the manuscript productivity criteria in Table 2 and the research program is active and ongoing with no significant breaks leading to at least three research related contributions (e.g., publications, presentations, grant activity [submission or award], and mentorship of students as outlined above) over the three year review period. If the faculty member has a 40-40-20 workload, one "A" level contribution would be expected; similarly, with a 30-50-20 workload, two "B" level contributions would be expected, and with a 20-60-20 workload one "B" level contribution would be expected. The balance of research related contributions could come from any level ("A", "B", or "C").

**Level 4: Responsibilities of the position exceeded.**

There are various scenarios in which a faculty member would earn this rating. In general they involve a level of research success and commitment significantly beyond those outlined for Level 3. Minimally, this rating entails satisfying the manuscript productivity criteria in Table 2, and four research related contributions over the three year review period. If the faculty member has a 40-40-20 workload, one "A" and one "B" level contribution would be expected; similarly, with a 30-50-20 workload, three "B" level contributions would be expected, and with a 20-60-20 workload two "B" level contribution would be expected. The balance of research related contributions could come from any level ("A", "B", or "C").

**Level 5: Responsibilities of the position exceeded in a sustained and outstanding manner.**

To attain this rating, the faculty member must exhibit a significant increase in productivity, whether by a significant increase in publication rate, success in obtaining grants, or mentorship of students. Minimally, this rating entails satisfying the manuscript productivity criteria in Table 2 and five research related contributions over the three year review period. If the faculty member has a 40-40-20 workload, two "A" and two "B" level contributions would be expected; similarly, with a 30-50-20 workload, one "A" and three "B" level contributions would be expected, and with a 20-60-20 workload three "B" level contributions would be expected. The balance of research related contributions could come from any level ("A", "B", or "C").

Table 2. Manuscript productivity criteria for the three-year FAR review period. For a discussion of the quality of publications, please see the “Evaluation of Scholarship” section.

Workload	Level 2, Level 3	Level 4	Level 5
40-40-20	1 publication	2 publications	3 publications
30-50-20	1 publication	2 publications	2 publications + ”to appear” manuscript(s)
20-60-20	1 publication	1 publication + “to appear” manuscript(s)	2 publications

## **TEACHING**

A number of factors will be considered in evaluation of teaching, including: overall workload (i.e., number, size, and nature [e.g., off-campus] of courses; course revision and new course development), achievement of goals, continuing development, student ratings of courses taught (especially the “overall effectiveness” score from evaluations), and peer evaluation. Some forms of teaching are more time-consuming than others. The different modes of teaching—working individually with students, teaching large lecture courses, directing off-campus and service-learning courses, leading small class seminars, implementing novel strategies for student success and retention—should all be considered in the evaluation process. Courses with large enrollments require additional effort and warrant recognition in evaluations of teaching. Similarly, courses with an off-campus component are especially time-consuming. These time- and labor-intensive courses are given additional consideration in the evaluation process. As part of the annual review narrative, each faculty member will provide an assessment for each course taught, describing specific successes and suggested improvements for the course and program, and describe other teaching related activities to be considered by the PC.

### **Evaluation of Teaching**

Evaluation of teaching requires an assessment of both the quality and the quantity of a faculty member's teaching-related activities. Evaluations of classroom teaching in part will be based on results of the standardized student evaluations administered each semester by the College, and generally scored on a 1-5 point scale; scores on the question concerning “overall teaching effectiveness” of the instructor will be used as indicated below. Peer evaluation by the School PC or School Directors will complement student evaluations. Peer review provides a judgment on the rigor and currency of each faculty member’s courses and the effectiveness with which they were delivered. Student evaluations, peer review and a teaching portfolio form the core of the evaluation process, but additional factors (e.g., the number of new course preparations over the review period, number of lower division, entry-level courses taught, number of students mentored in research, curriculum development, etc.) will also be considered as described below for each level. These additional considerations may increase the evaluation level if the student evaluation average is inconsistent with the peer review and teaching portfolio. Evaluation may be supplemented by review of a portfolio of work by students in a course, or by another form of analysis agreed upon with the PC. Summer teaching evaluation may be considered, if available and desired by the faculty member. Course evaluations that have not been made available to the faculty member (e.g., too few students) should not be considered in the evaluation as the faculty

does not have the opportunity to comment on them. The faculty member may still discuss other aspects of the class (e.g., innovation, etc.).

**Level 1: Unsatisfactory, responsibilities of the position not fulfilled.**

Failure to satisfy the criteria for Level 2.

**Level 2: Partially Meets Expectations.**

Normally, an average score on the student evaluations (“overall teaching effectiveness” question, averaged for all classes [weighted equally] during the review period) ranging from  $\geq 2.5$  to  $< 3.0$ . Demonstration of additional teaching related efforts in narrative submitted for evaluation by the PC that indicates a specific plan for improvement.

**Level 3: Responsibilities of the position fulfilled.**

Normally, an average score on the student evaluations (“overall teaching effectiveness” question, averaged for all classes [weighted equally] during the review period) ranging from  $\geq 3.0$  to  $< 3.9$ . Demonstration of rigor and currency as evidenced during classes evaluated by the PC during the review period, and in the narrative or a teaching portfolio submitted for evaluation by the PC.

**Level 4: Responsibilities of the position exceeded.**

Normally, an average score on the student evaluations (“overall teaching effectiveness” question, averaged for all classes [weighted equally] during the review period) ranging from  $\geq 3.9$  to  $< 4.3$ . Beyond accomplishments of Level 3, there should be demonstration of additional teaching related effort (e.g., curriculum development, mentoring of students, instruction of large enrollment and off-campus courses, effort associated with student retention, etc.). Activities indicative of this level might include running extra tutorial and review sessions outside of normal class and office hours, playing a role in securing external funding for support of instruction, or undertaking a major course development or revision.

**Level 5: Responsibilities of the position exceeded in a sustained and outstanding manner.**

Normally, an average score on the student evaluations (“overall teaching effectiveness” question, averaged for all classes [weighted equally] during the review period) ranging from  $\geq 4.3$  to  $5.0$ . Beyond accomplishments of Level 4, there should be demonstration of additional significant teaching related effort (e.g., leadership in curriculum development, exceptional mentoring of students (e.g., significant time spent with a student or significant number of students mentored, perhaps evidenced by number of 499 credits, NCUIRE awards, SRP scholarships, etc.), instruction of large enrollment and off-campus courses, exceptional effort associated with student retention, etc.). Activities indicative of this level might include a leadership role in planning, organizing and implementing tasks associated with curriculum development and course instruction (e.g., instruction related grants), or authoring a textbook.

## **SERVICE**

Service is considered an essential component of any faculty member's contribution to the University. Service-related activities can be done in three major areas: 1) academic service, which includes activities within the School, the New College of Interdisciplinary Arts and Sciences, the West campus of Arizona State University, or to Arizona State University as a whole; 2) professional service, which includes activities associated with professional journals,

academic societies, or other national or international scientific organizations; and 3) community service, which includes activities for undergraduate or graduate student groups, K-12 students or teachers, or other community organizations. Primary goals for junior (tenure-track) faculty members are to establish their credentials in the areas of Teaching and Research, with service to their profession and within the university increasing over their probationary years. Once a faculty member has been granted tenure, expectations in the area of service may be increased beyond the levels achieved at the awarding of tenure. Service-related activities should be appropriately balanced with the primary university activities of Teaching and Research.

Service may be undertaken in any or all of the three major areas. Areas of emphasis may vary among faculty members depending on the needs of the University and on their specific academic fields, expertise, and personal interests, and may change during the course of a faculty member's career. The following lists include examples of activities that might count as service, but is not meant to be directive or restrictive. In general, service to the Profession and to the Community should be an extension of faculty member's academic activities. Service requires the commitment of quality time by a scholar-teacher to the School, campus, university, profession, the community, and above all to the student.

Examples of service related activities for each area might include: 1) Academic Service: participation on or chairship of standing School, college, or campus committees; participation on or chairship of search committees; participation on or chairship of ad hoc committees; other activities within the college, campus, or university related to institutional development such as grant writing or fund-raising; participation in campus- and university-wide initiatives aimed at enhancing the relationship between faculty members and students; participation in campus- and university-wide initiatives aimed at increasing student success and retention in the University; 2) Professional Service: reviewing of grants or manuscripts for funding agencies or professional journals; unpaid consultancies; service on editorial boards or editorship of professional journals; membership or chairship of standing committees or boards of professional societies; and 3) Community Service: advising or mentorship of undergraduate or graduate students beyond the level normally associated with teaching; writing and acquisition of grants for community outreach activities, including teacher education; membership or chairship of scientifically-related community groups; volunteering at science fairs and other community programs; all other outreach in which the faculty member's expertise is used for the benefit of the community.

### **Evaluation of Service**

Evaluation of service requires an assessment of both the quality and the quantity of a faculty member's service-related activities. Because service-related activities may not normally be included in a faculty member's curriculum vitae, a faculty member should list and document (where possible) the service activities in each of the three areas as part of his or her annual review narrative.

#### **Level 1: Unsatisfactory, responsibilities of the position not fulfilled**

No evidence of service in the academic, professional, or community areas, or insufficient service-related activity to warrant a rating of 2.

**Level 2: Partially Meets Expectations.**

Evidence of attendance at some faculty meetings and limited participation in School, college, or campus activities; limited contributions in the professional or community areas.

**Level 3: Responsibilities of the position fulfilled**

Evidence of regular attendance at faculty meetings and participation in School, college, or campus activities; some contributions in the professional or community areas.

**Level 4: Responsibilities of position exceeded**

Evidence of more active contributions to School, college, and campus activities beyond the level expected for a rating of 3; evidence of some significant contributions in the professional or community areas, or evidence of significant School, college or campus activities.

**Level 5: Responsibilities of position exceeded in a sustained and outstanding manner**

Evidence of service beyond the activities needed for a rating of 4. Academic service may include chairship of school, college, or campus committees, or membership on university-wide committees; professional service may include reviewing grants or manuscripts, serving on the editorial board of an academic journal, or serving as a committee member or officer of a professional society; community service may include a variety of activities that support and extend the reputation of the School, the campus, or the university.

**CRITERIA FOR OVERALL DETERMINATION OF RATING:**

The overall determination of a faculty members rating level will be a weighted average in Scholarship, Teaching, and Service activities depending on their mode or area of emphasis.

## APPENDIX B

### SCHOOL OF MATHEMATICAL AND NATURAL SCIENCES ARIZONA STATE UNIVERSITY PROFILES FOR PROMOTION AND TENURE OF FACULTY MEMBERS

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Tenured and tenure track faculty may be recommended for promotion to a higher rank and/or the granting of tenure upon the compilation of a record of excellent accomplishments in the areas of teaching, scholarship, and service. These profiles describe the kinds of evidence that usually support a recommendation of promotion and/or tenure. Each candidate is expected to document and explain the specific activities that comprise their participation under each of the designated headings and note the resulting outcomes where they are relevant.

1. Members of the tenure-track faculty in the School of Mathematical and Natural Sciences recommended for **promotion to the rank of Associate Professor with tenure** will show evidence of:
  - A. Effective teaching, as usually evidenced by a positive record of peer review and student evaluations of teaching. Because the West campus is primarily an undergraduate campus, effective teaching of undergraduate students is essential. Additional indicators of teaching effectiveness may include:
    - (i) Course instructional materials, including syllabi, homework, class notes, quizzes, and tests.
    - (ii) Active participation in graduate education, including but not limited to formal courses, individual studies, and thesis committees.
    - (iii) Active participation as a mentor of undergraduate students, graduate students, and/or postdoctoral fellows.
    - (iv) Course innovation and curriculum development, including the creation of pedagogical materials.
    - (v) Recognition of excellence in teaching at the university, regional, or national level.
  - B. A creative, independent, and productive program of scholarship in a significant area of the mathematical or natural sciences, visibility in this field at the national level, and the potential to sustain and improve this program, as usually evidenced by:
    - (I) a significant body of refereed publications reporting original research, including pedagogical/educational publications germane to the faculty member's area of appointment and expertise, which has substantially enriched the field and has been conducted primarily at Arizona State University. Most of these publications should appear in primary journals for the field, significant conference proceedings for the field, and/or major general journals, but a reasonable proportion of these items may appear in peer-reviewed books, book chapters, and monographs.

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(II) appropriate grant and/or contract activity with external funding agencies, where the candidate has an essential role;

Additional indicators of productive scholarly activity may include:

- (i) Presentations by the faculty member at the important meetings/conferences of the investigator's field and seminars at other research institutions.
- (ii) Financial support of undergraduate students, graduate students, and/or postdoctoral researchers in the faculty member's research program.
- (iii) Other refereed publications with undergraduate student co-authors.
- (iv) Recognition for excellence in research at the university, regional, or national level.
- (v) Awards of United States patents.

C. Conscientious and effective performance in University and professional service assignments as usually evidenced by:

- (I) Active participation in service to the of the School, College, and University; and
- (II) Refereeing for conferences, journals, and/or granting agencies.

Additional indicators of effectiveness in service may include

- (i) Participation in activities of professional organizations;
- (ii) Service that leverages the faculty member's area of scholarly expertise and contributes to the embeddedness of ASU within the community.

2. Tenure track faculty hired as Assistant Professors will normally be considered for promotion and tenure no later than during the sixth year in rank. Tenure track faculty hired as Associate Professors without tenure will normally be considered for the granting of tenure in their fourth year in rank; however, the time frame specified in the offer letter takes precedence. Promotion and/or granting of tenure **at an earlier time** may be considered in cases when the candidate has achieved the expectations identified in **1**.
3. Members of the tenure track faculty recommended for **promotion to the rank of Professor** will show evidence of substantial contributions at the local and national levels beyond that demonstrated for promotion to Associate Professor and tenure. This evidence will be provided by:
  - A. Sustained effective teaching contributions in courses, as evidenced by the criteria noted in **1.A**. Additional indicators of teaching effectiveness may include mentoring of other faculty, national recognition of leadership in teaching, and the publication of textbooks and/or laboratory manuals.
  - B. Sustained and expanded creative, independent, and productive program of scholarship in a significant area of the mathematical or natural sciences, visibility in this field at the national level, as usually evidenced by the criteria noted in **1.B**. Additional indicators of scholarly activities may include invited presentations at important national and/or international meetings and conferences of the investigator's field and at other research institutions; invited contributions to distinguished review publications; and election to distinguished membership or fellowship status in professional societies

- C. Leadership roles in service to the University and profession as evidenced by the criteria noted in **1.C**. Additional indicators of service may include participation in the governance of the College and/or University and service on important scientific review boards/panels or editorial/advisory committees.
4. Promotion to the rank of Professor is warranted only when the criteria in **3** are met. Thus, promotion is based neither on promise nor longevity. The time required by different faculty members to attain the appropriate level of achievement will vary.