




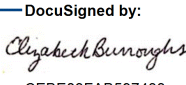

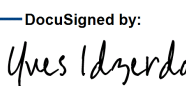
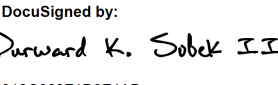

Roles, Scope, Criteria, Standards and Procedures

of the

Department of Mathematical Sciences, College of Letters and Science

(Name of Department/School/College)

Effective Date: July 1, 2024

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# Role and Scope Document for The Department of Mathematical Sciences

## Article I. Role and Scope of Unit

The faculty, staff, and administrators in the Department of Mathematical Sciences collaboratively support the fulfillment of the University's mission through teaching, scholarship, and service. The faculty in the Department of Mathematical Sciences comprises three disciplinary groups: Mathematics, Mathematics Education, and Statistics. Research specialties vary across and within these groups.

### Teaching

The Department educates students pursuing degrees in the areas named above but also plays a substantial role in the general education of Montana State University students. By providing coursework satisfying the Quantitative Core, it contributes to the educational experience of virtually all undergraduate students at the University. Many of its more advanced courses serve students enrolled in undergraduate and graduate programs offered by other departments.

The Department offers the following degree programs:

- B.S. in Mathematics (options in Applied Mathematics, Mathematics, Mathematics Teaching, and Statistics, with minors in Mathematics and Statistics)
- M.S. in Mathematics (options in Mathematics and Mathematics Education)
- M.S. in Statistics; Graduate Certificate in Applied Statistics
- M.S. in Data Science
- Ph.D. in Mathematics (pure, applied, mathematics education)
- Ph.D. in Statistics (statistics, statistics education)

### Research

Faculty in the Department conduct world-class research across research specialties, resulting in national and international journal publications and leading to applications in grant projects, consulting efforts, and outreach. Research norms for each group are described below.

**Mathematics Research** includes research in both pure and applied mathematics, contributing to major advances both in the development of mathematical theory and in the use of existing theory in applied problems. In pure mathematics, the emphasis is on discovering new mathematical phenomena, formulating and solving deep problems, and perfecting the exposition of the theory. In applied mathematics, the focus is on bringing mathematical tools to bear on concrete problems in other sciences and engineering; in particular, value is placed on the ability to communicate across disciplinary boundaries. Faculty regularly publish their results in leading peer-reviewed journals in their fields.

**Mathematics Education Research** combines scholarship in mathematics as well as educational theory and practice to examine mathematics teaching and learning. Grounded in mathematics

content, it is generally carried out through social science research methods. Mathematics education researchers in the Department adopt an applied approach, investigating how content, issues of access and equity, teacher development, and classroom practice influence mathematical learning. Designing and conducting professional development across grades K-16 and beyond is integral to mathematics education research in the Department. Appropriate publication outlets include mathematics education and general education research journals as well as practitioner journals in the field.

**Statistics Research** may be applied, theoretical, or a combination of the two. Applied statistics research involves the novel or sophisticated application of statistical methods to real problems, and is usually interdisciplinary in nature. Theoretical research typically involves development of new statistical methods and derivation of the properties of statistical methods. Statistics education research focuses on the teaching and learning of statistics and involves the creation and evaluation of new teaching and learning methods and curricula as well as development of methods and analysis of educational data. Statistics and statistics education research may be published in statistics journals and subject-area journals.

### **Service**

The faculty supports the University through service on committees at the Department, College, and University level. Faculty members in each disciplinary group support the professional community as editors, reviewers, referees, and conference organizers. In support of the University's land grant mission, faculty provide expertise to researchers across campus and to off-campus organizations as well as extensive professional service to the State of Montana, educational entities, and national organizations. Integrating teaching and outreach, the Department provides one of the premier online master's programs for mathematics teachers in the United States. Service and outreach activities broadly include:

- Serving on Department, College, and University committees.
- Participating in and contributing to national organizations; organizing professional conferences; editing professional journals and other products; and reviewing or refereeing publications and grant proposals.
- Implementing state and national programs to improve K-16 mathematics education.
- Collaborating with state agencies to improve education and resource management.
- Providing mathematical and statistical consulting and collaboration to research scientists in other University departments as well as businesses, government agencies, and school districts.

## **Article II. Appointment and Advancement of Research Faculty**

### **Section 2.01 Appointment and Evaluation**

Research faculty in the Department of Mathematical Sciences are non-tenurable faculty whose assignment principally involves research. Their primary responsibility is to contribute to the research mission of the University and to the scholarly productivity of the Department.

They are appointed using the processes and procedures of the Department and following University policies outlined in the Faculty Handbook: Appointment and Employment of Faculty, Section 6. In particular, the initial level of appointment of a research faculty member is consistent with the standards and expectations for scholarship found in Articles 8, 9 and 11, and may be as Assistant Research Professor, Associate Research Professor, or Research Professor. In order for a research faculty member to be appointed, there must be funding available to support the appointment through grants, either their own or those of a tenurable faculty member within the Department. Appointment is also based on evidence that the research faculty member's work contributes to the furtherance of the Department's goals in scholarly productivity.

Research faculty appointees are to be evaluated annually by the Department Head, and the evaluation is to be conducted in accordance with the timetable for NTT faculty evaluations.

### **Section 2.02 Advancement**

When applying for advancement, the faculty member is reviewed in accordance with Department policies and procedures that are comparable to the scholarship expectations for tenurable faculty. Advancement in title creates no right to reappointment from term to term. Since the primary responsibilities of the research faculty member are in the area of scholarship, a candidate for advancement is evaluated using the standards and expectations set forth by the Department for evaluating scholarship of a tenurable faculty member at the comparable level of appointment. Scholarly reviews are required for each advancement review. Since the candidate is solely evaluated on scholarship, the following exceptions apply to the contents of the required dossier and to the advancement procedures.

Exceptions:

- The candidate's dossier contains only those review materials listed in Article VI, Section 6.01 that pertain to scholarship.
- There are two levels of review of research faculty members:
  - Primary review committee
  - Department Head
- The Department Head reports the result of the review to the Dean and includes the result of the review in the faculty member's personnel file.

The timeline for an advancement review is the same as that of NTT promotion within the Department.

### **Section 2.03 Timing of Advancement to Associate Research Professor Review**

Reviews for advancement to Associate Research Professor typically occur in the research faculty member's sixth year of service or later. Any years of credit towards advancement awarded at time of hire will move the review forward. An in-depth assessment of performance of the candidate's research is required. Two scholarly reviews are required as part of the in-depth assessment, and at least one of these shall be from a scholar whose appointment is

outside the Department of Mathematical Sciences. There is no requirement that either reviewer is external to MSU.

#### **Section 2.04 Advancement to Associate Research Professor Review**

The Departmental standard for advancement to the title of Associate Research Professor is:

- *Accomplishment* in scholarship as defined in the University Faculty Handbook document entitled “Retention, Tenure & Promotion Review Definitions.”

The performance indicators and weighting of indicators for the standard of accomplishment in scholarship are given in Section 9.03 of this document.

The quantitative and qualitative expectations for the standard of accomplishment in scholarship are given in Section 9.04 of this document.

The evidence of performance indicators for the standard of accomplishment in scholarship are given in Section 9.05 of this document.

#### **Section 2.05 Advancement to Research Professor Review**

Normally, research faculty are reviewed for advancement after the completion of five (5) years of service in the current rank; however, research faculty may seek promotion earlier if they can establish that they meet the same standard of excellence in scholarship used in evaluating candidates after five (5) years in rank. An in-depth assessment of performance of the candidate’s research is required. Two scholarly reviews are required as part of the in-depth assessment and at least one of these shall be from a scholar whose appointment is outside the Department of Mathematical Sciences. There is no requirement that either reviewer is external to MSU.

The Departmental standard for advancement to the title of Research Professor is:

- *Excellence* in scholarship as defined in the Faculty Handbook document entitled “Retention, Tenure and Promotion Review: Definitions.”

The performance indicators and weighting for the standard of excellence in scholarship are given in Section 11.03 of this document.

The quantitative and qualitative expectations for excellence in scholarship are given in Section 11.04 of this document.

The evidence of performance indicators for excellence in scholarship are given in Section 11.05 of this document.

### **Article III. Annual Review Process**

An annual review assesses a faculty member's performance over the preceding calendar year and is applicable to tenured and tenure track faculty, as well as non-tenurable faculty not part of the NTT Collective Bargaining Agreement. Faculty will submit materials relevant to their performance over the preceding calendar year (based on current assigned responsibilities and percentages of effort in teaching, scholarship, and service) by the deadline established by the Department Head. The vehicle for submission is the platform designated by the Provost's Office (currently Faculty Success). The Department Head will conduct annual reviews in accordance with the University Faculty Handbook and College of Letters and Science policy.

### **Article IV. Primary Review Committee and Administrator**

#### **Section 4.01 Primary Review Committee – Composition and Appointment**

Each year the Department Head will nominate candidates for the Department's Retention, Tenure and Promotion (RTP) Committee to evaluate all cases of retention, tenure, and promotion occurring within a given academic year. The slate of candidates will be confirmed upon approval by the tenure-track faculty. The RTP Committee may include two types of members (Standing RTP committee members with three-year terms, and Annual RTP committee members with one-year terms) as described below.

- The Standing RTP Committee will consist of four tenured faculty members, at least two at the rank of Full Professor if feasible. Standing RTP Committee members serve three-year terms and may be reappointed.
- Tenured faculty members with appropriate scholarly expertise may be appointed at the discretion of the Department Head as Annual RTP Committee members. They serve annual terms and review every case before the committee in that year. The number to be appointed is at the discretion of the Department Head and is dependent upon the number and expertise of candidates under review.
- The RTP Committee selection process will prioritize representation of all three groups of Mathematics, Mathematics Education, and Statistics.
- The RTP Committee membership selection process will promote inclusion of protected categories identified by MSU whenever possible, attending to the dual goals of valuing diverse perspectives and promoting access to decision-making committees for individuals from protected categories.
- If committee composition is restricted due to limitations within the Department, the Head will request approval from the University Retention, Tenure and Promotion Committee to make an alternate tenured faculty appointment.
- Before beginning their work, all RTP members will complete required orientation and training sessions as described in the Faculty Handbook.

#### **Section 4.02 Primary Review Administrator**

The Primary Review Administrator is the current Head of the Department of Mathematical Sciences. Should the Primary Review Administrator have a conflict of interest with a candidate

under review, the CLS Dean will identify an individual to serve as Primary Review Administrator for the case under review.

#### **Section 4.03 Identification of responsible entities**

- Establish the Primary Review Committee by facilitating the appointment and confirmation of the members as described.  
**Primary Review Administrator**
- Select external reviewers and solicit review letters.  
**Department RTP Committee and Primary Review Administrator**
- If internal reviews are part of the unit's review process, selecting and soliciting Internal reviews.  
**This is generally not applicable in the Department of Mathematical Sciences. Peer reviews of teaching are selected and solicited by the Department Head, as specified in section 6.03.**
- Assuring the following materials are included in the Dossier:
  - Internal and external reviewer letters of solicitation, letters from the reviewers and, in the case of external reviewers, a short bio-sketch of the reviewer.  
**Department RTP Committee**
  - Applicable Role and Scope Document.  
**Primary Review Administrator**
  - Letter of hire, any percentages of effort changes, all annual reviews, and all evaluation letters from prior retention, tenure, and promotion reviews at MSU.  
**Primary Review Administrator**
  - Candidate's teaching evaluations from the review period. If the evaluations are not in electronic format, the unit will provide evaluation summaries. Upon request by review committees and review administrators, the unit will provide access to the original evaluations to review committees and administrators during the review.  
**Primary Review Administrator**
- Maintaining copies of all review committee evaluation letters and internal (if applicable) and external review letters after the review.  
**Primary Review Administrator**

#### **Section 4.04 Next Review Level**

The next review level after the reviews by the Primary Review Committee and the Primary Review Administrator is the College of Letters and Science Retention, Tenure, and Promotion Committee.

## **Article V. Intermediate Review Committee Administrator**

### **Section 5.01 Intermediate Review Committee – Composition and Appointment**

The Intermediate Review Committee is the College of Letters and Science Retention, Tenure, and Promotion Committee, with composition and appointment as described in the CLS Role and Scope.

### **Section 5.02 Intermediate Review Administrator**

The Intermediate Review Administrator is the Dean of the College of Letters and Science.

### **Section 5.03 Level of Review Following Intermediate Review Administrator**

The next level of review after the Intermediate Review Administrator is the University Retention, Tenure and Promotion Committee.

## **Article VI. Review Materials**

Review materials submitted by the candidate shall comply with the University Faculty Handbook document entitled “Annual Review, Retention, Tenure and Promotion,” subsection “RTP: Rights and Responsibilities,” and the CLS Role and Scope document. Additionally, candidates in the Department of Mathematical Sciences must follow the requirements below.

### **Section 6.01 Materials Submitted by Candidate**

Materials for external review must include:

- a. A comprehensive Curriculum Vitae (CV) documenting teaching, scholarship, and service activities of the candidate.
- b. A brief statement that identifies the candidate’s area of scholarship.
- c. Articles, publications, creative endeavors, or other evidence from the review period, selected by the candidate, that best represents the candidate’s scholarship.

Candidates may choose to include for external review scholarly products that have not been accepted for publication. If candidates do, the committee will consider external evaluators’ assessment of the quality of scholarship contained in the product, even though such works at the time of dossier submission do not contribute to the count of scholarly products. Scholarly products published prior to the review period shall not be included in materials submitted for external review.

Materials for all dossiers must include:

- Cover sheet obtained from the Provost’s office.
- A comprehensive CV documenting teaching, scholarship, and service activities of the candidate.
- A Personal Statement that includes a description of the candidate’s area of scholarship
- Separate self-evaluations for teaching, scholarship, service, and integration summarizing the evidence demonstrating that the candidate meets the standards for the attainment



of retention, tenure, or promotion, as applicable. Each self-evaluation shall include a summary of activities, selected products or accomplishments, and evidence of recognition, itemized by year over the relevant review period.

If included in the CV, the candidate shall separately indicate the following categories:

- Refereed books or book chapters
- Refereed journal articles
- Invited book chapters or articles
- Invited conference presentations
- Contributed conference presentations
- Seminars and/or colloquia
- Grant proposals submitted and grants funded
- Non-refereed publications

The candidate may choose to include other categories as appropriate to the discipline and the candidate's record. For papers, grants funded, and other scholarly products, full author lists must match the publication or grant award.

This list is a general requirement for all dossiers. For further details including evidence of teaching, scholarship, service, and integration activity, see Articles VIII-XI of this document.

### **Section 6.02 Documentation of Collaborative Scholarly Contributions**

Conventions for crediting collaborative work vary greatly among the different disciplines and journals represented in the Department. In particular, author order on published works can generally not be used to infer any information about the nature, quantity, or quality of the contribution of any particular author.

The candidate will provide a single document briefly describing the candidate's contribution to each collaborative scholarly work over the relevant review period. The level of detail provided in this document can vary, and candidates should use the standard that is acceptable to peer-reviewed journals in their specialty, when it applies. The candidate may produce manuscripts that comprise discrete efforts by collaborators readily articulated in detail, in which case the candidate should provide these details, or the candidate's collaborative work may operate as a group effort at all stages, in which case providing a rough percentage effort is adequate. The candidate may choose to use a single statement to describe any long-term collaboration that has resulted in multiple publications or grants.

### **Section 6.03 Peer Review Solicitation Procedure**

The process and requirements for soliciting peer review materials are described in the University Faculty Handbook document entitled "Annual Review, Retention, Tenure and Promotion," subsection "RTP: Rights and Responsibilities," Section 6.

External reviewers should be specialists in the candidate's field and familiar with the usual expectations for faculty performance. At least half of the external reviewers must be selected by the Department Head and/or Department RTP committee; the remainder may come from a list of names submitted by the candidate. The candidate shall submit a list of names at the time they submit their materials for external review, and the Department Head and/or Department RTP committee will generate their list so that it does not overlap with the candidate's list. The Department Head and/or Department RTP committee will solicit reviews from among those on the list provided by the candidate, but if those contacted are unable to serve then they will be replaced by other reviewers, not necessarily from the candidate's list. Candidates shall not be informed of the identity of outside evaluators to protect the confidentiality of the review process.

The five or more external review letters must be requested by the Department Head and/or Department committee, and must not be solicited by the candidate. The Department report should state clearly how external reviewers were chosen and should include a brief statement of their status in the field. External reviewers should state knowledge of or relationship to the candidate, if either applies.

The minimum number of reviews included in the dossier is set by the College of Letters and Science Role and Scope.

External reviewers will be sent the Department Role and Scope document, a copy of the candidate's CV, a brief statement that identifies the candidate's area of scholarship, and a selection of relevant publications and/or unpublished manuscripts, along with other materials, as appropriate and selected by the candidate. Reviewers will be asked to comment specifically on the quality of the candidate's written scholarship and productivity, as well as the candidate's recognition in the field.

The Department Head will ensure that each candidate has at least two peer observations of teaching and will select the peer observers in consultation with the tenured faculty whose teaching is most closely related with the candidate's area of teaching expertise.

## **Article VII. Applicable Role and Scope Documents**

### **Section 7.01 Retention Review**

Candidates for retention are reviewed under the standards and indicators in the Role and Scope Documents in effect on the first day of employment in a tenurable position.

### **Section 7.02 Tenure and Promotion to Associate Professor Review**

Candidates for tenure are reviewed under the standards and indicators in the Role and Scope Documents in effect on the first day of employment in a tenurable position. Candidates may select a more recent, approved Role and Scope Document by notifying the primary review

committee at the time that they submit materials for external review; candidates who select a more recent document will sign a memo indicating their choice.

### **Section 7.03 Promotion to Professor Review**

The faculty member will be reviewed using standards and indicators in the Role and Scope Documents in effect two (2) years prior to the deadline for notification of intent to apply for promotion.

## **Article VIII. Retention Reviews**

### **Section 8.01 Timing of Retention Review**

Faculty are reviewed for retention in the academic year specified in their Letter of Hire, unless extended under the University's Extending Tenure Review Period policy.

### **Section 8.02 University Standard**

The standards for the retention of probationary faculty members are:

- Effectiveness in teaching, scholarship, and service during the review period.
- Integration of no fewer than two of the following during the review period: teaching, scholarship, and service.
- Satisfactory progress towards meeting the standards for tenure by the candidate's tenure review year.

### **Section 8.03 Performance Indicators and Weighting**

Performance indicators and weighting are defined in Section 9.03. The same indicators and weights that are used in tenure review are used in retention review.

### **Section 8.04 Quantitative and Qualitative Expectations**

The Department values intellectual discovery and the generation of new knowledge above all other measures of scholarship.

***Effectiveness in scholarship*** is judged primarily by the quality of published scholarly works, with refereed articles being the most commonly used performance indicator. *Effectiveness* includes, but is not limited to, establishing a research specialty that is in the candidate's discipline, evidenced by the creation of scholarly products (see Section 9.03) throughout the review period.

It is expected that scholarship be of high quality, be ongoing throughout the review period, be commensurate with the associated discipline, and result in a record of scholarly products at the time of retention. These products shall represent both Group I and Group II indicators, and publications may be submitted, accepted, in press, or published at the time of review. The record must be substantive enough that it is reasonable to expect the candidate to achieve the standards for tenure at the time of tenure review.

Collaborative work is highly valued in the mathematical sciences, and there is no expectation that single-authored publications are required to demonstrate effectiveness in scholarship. Standards for determining author order vary within and across groups, so no inferences about level of contribution should be made based on author order. The candidate is required to identify the level of individual contribution to scholarly works (see Section 6.02).

***Effectiveness in Teaching*** is as described in Section 9.04.

***Effectiveness in Service*** is as described in Section 9.04, except that there is no requirement that service include assignment to a Department, College, or University committee at MSU at the time of retention review.

### **Section 8.05 Evidence of Performance Indicators**

Evidence of performance indicators are listed in Section 9.05. The same performance indicators and evidence that are used in tenure review are used in retention review, with the addition that *submitted* products are to be documented with a copy of the submitted work along with verification of submission.

### **Section 8.06 Status of Scholarly Products**

For retention review, scholarly products that are submitted, accepted, in press, or published at the time of review will be considered if they are included in the dossier and are appropriately documented according to Section 8.05.

## **Article IX. Tenure Review**

### **Section 9.01 Timing of Tenure Review**

Faculty are normally reviewed for tenure in the academic year specified in their Letter of Hire, unless extended under the University's Extending Tenure Review Period policy. Candidates desiring to be reviewed earlier than the date specified in their Letter of Hire shall follow Faculty Handbook policies regarding early tenure review.

### **Section 9.02 University Standard**

The University standards for the award of tenure are:

- sustained effectiveness in teaching and service;
- integration of no less than two of teaching, scholarship, and service; and
- accomplishment in scholarship

as demonstrated by the candidate's performance during the review period.

### **Section 9.03 Performance Indicators and Weighting**

The following performance indicators are considered in the review to determine if the standards in the previous section are satisfied. The faculty in the Department of Mathematical Sciences comprises three groups: Mathematics, Mathematics Education, and Statistics, and these performance indicators apply to all Department faculty. The *weighting* of each indicator may vary across and within the groups. Additional indicators will be considered if deemed appropriate and consistent with the definition of indicators stated in the Faculty Handbook.

### ***Performance indicators in scholarship***

The following is a list of performance indicators applicable to scholarship. The indicators listed in Group I are considered the primary activities by which performance in scholarship is evaluated. Those from Group II also contribute to performance but carry less weight. All items from Groups I and II are referred to as “scholarly products.”

#### Group I

- Refereed journal articles, monographs, book chapters, and textbooks in the mathematical sciences
- Refereed journal articles, monographs, book chapters and textbooks in disciplines outside of the mathematical sciences that result from multidisciplinary research
- External grants funded
- Invited major talks (e.g., plenary or keynote)
- Invited high-profile seminars or colloquia (e.g., at prestigious venues)\*
- Refereed proceedings published in connection with professional meetings\*

#### Group II

- Refereed proceedings published in connection with professional meetings\*
- Invited papers or presentations given at professional meetings
- Contributed papers or presentations given at professional meetings
- Grant proposals submitted (external and internal)
- Internal grants funded
- Invited seminars and/or colloquia\*
- Non-refereed publications (e.g., non-refereed proceedings and technical reports)
- Development and publication of scholarly products (e.g., software or curriculum materials)

This list is representative but not exhaustive. As additional evidence of performance in scholarship, the candidate may choose to include other relevant and appropriate indicators not listed here. The Department RTP Committee will determine the weight of such indicators and will describe this determination in their evaluation letter. In addition, the weight of indicators marked (\*) will be determined and described by the RTP Committee, based on varying disciplinary norms for research publications and presentations. For example, an invited talk at a high-profile seminar at a prestigious venue would normally be weighted as a Group I indicator, while an invited talk at a seminar in another department on campus would normally be weighted as a Group II indicator. An invited talk at a conference where most talks are organized

by different individuals who issue invitations would normally be weighted as a Group II indicator, while an invited plenary talk at the same conference would normally be weighted as a Group I indicator.

### ***Performance indicators in teaching***

The following is a list of performance indicators applicable to teaching. All indicators listed are considered the primary activities by which performance in teaching is evaluated.

- Delivering quality instruction in support of the Department's teaching mission (as documented by faculty peer review of teaching)
- Development and implementation of new pedagogical methods and/or curriculum materials (note that publications resulting from such activities are performance indicators of scholarship)
- Design and facilitation of instructional programs, e.g., graduate teaching assistant training (note that publications resulting from such activities are performance indicators of scholarship)
- Mentorship of graduate students (e.g., supervising or substantially contributing to graduate student research)
- Mentorship of undergraduate students (e.g., supervising undergraduate research or independent study projects)
- Academic advising of undergraduate or graduate students
- Student evaluations of instruction via University-approved instruments

Student evaluations are vulnerable to various forms of bias (e.g., evaluations may be based on criteria other than quality of instruction). Therefore, evaluation scores and averages should be applied with caution as a measure of teaching effectiveness and supplemented by other evidence. In particular, written student comments may be viewed as formative feedback to be used for instructor improvement, but are not considered a form of evaluation.

This list is representative but not exhaustive. As additional evidence of performance in teaching, the candidate may choose to include other relevant and appropriate indicators not listed here. The Department RTP Committee will determine the weight of such indicators and will describe this determination in their evaluation letter.

### ***Performance indicators in service***

The following is a list of performance indicators applicable to service. All indicators listed are considered the primary activities by which performance in service is evaluated.

- Membership and offices held on Department, College, and University committees
- Professional service in local, state, national, or international organizations in the mathematical sciences
- Outreach in the mathematical sciences to local, state, national, or international communities

- Active supervision of multi-section courses
- Service as a reviewer or editor for a professional journal, monograph, or book
- Professional consultations that may or may not result in a co-authored publication

This list is representative but not exhaustive. As additional evidence of performance in service, the candidate may choose to include other relevant and appropriate indicators not listed here. The Department RTP committee will determine the weight of such indicators.

### ***Performance Indicators in Integration***

As indicated in Section 9.02, candidates are expected to demonstrate integration across at least two of the categories of scholarship, teaching, and service. The nature and extent of integrated activities will vary depending on the candidate's discipline and areas of specialization. The following list offers examples of potential indicators of integration, with the understanding that integration can take many forms. The candidate must clearly define and describe how integration is achieved in the dossier.

- Integration of scholarship and teaching: implementing a research activity within a course.
- Integration of scholarship and teaching: offering seminars to introduce students to the process of conducting research.
- Integration of scholarship and teaching: collaborating in research and/or publication with a student.
- Integrating of scholarship and service: lending research expertise through consulting.
- Integration of scholarship and service: implementing research results in a community setting.
- Integration of teaching and service: designing and/or delivering professional development for K-12 teachers or special programs for K-12 students.

## **Section 9.04 Quantitative and Qualitative Expectations**

### ***Scholarship Expectations***

The Department values intellectual discovery and the generation of new knowledge above all other measures of scholarship.

*Accomplishment in scholarship* is judged primarily by the quality of published scholarly works, with refereed articles being the most commonly used performance indicator. With respect to publication quality, the Department RTP Committee will assess accomplishment based on the evidence provided by External Reviewers. *Accomplishment* includes, but is not limited to, an ongoing record of independent research that has led to a regular record of publication in refereed journals. It is expected that the results of these publications will be presented at conferences and professional meetings. A record of seeking extramural funds to support research activities is also expected.

It is expected that scholarship be of high quality, be ongoing throughout the tenure review period, be commensurate with the associated discipline, and result in a substantive record of peer-reviewed products at the time of tenure. The usual Departmental expectation for scholarly productivity is that tenure candidates average between 1 and 2 scholarly products per year during the review period. These products may represent both Group I and Group II indicators, and publications may be accepted, in press, or published at the time of review. At the time of tenure it is expected that multiple items from Group I will appear in the candidate's body of work. Due to the diverse nature of scholarship within the Department, expectations will vary across disciplines.

Regardless of quantity of products, the quality of the candidate's scholarly body of work, as documented by External Reviewers and the Department RTP Committee, is of primary importance. In particular, the quality and reputation of journals and other scholarly venues, as documented by External Reviewers and the Department RTP Committee and according to disciplinary norms, is considered extremely important in the review process. It should be noted that publication impact factors or h-indices and the like are not typically an important measure of prestige or scholarly accomplishment in the mathematical sciences.

In some cases, a relatively small number of products with high impact may be acceptable for satisfying scholarship expectations, while in other cases a large number of products may not be sufficient. If the number of products is near the average of 1-2 scholarly products per year, and one or more of the products are documented by the External Reviewers as having little to no impact in the discipline, then scholarship expectations may not be satisfied. Also, if the candidate's contribution to one or more products is documented as minimal, then it is expected that the number of scholarly products would need to sufficiently exceed the average to offset the candidate's limited contributions.

A record of seeking extramural funds to support research activities is also expected. As recognition of the intellectual work invested in the early phases of a grant, a candidate who is active as a PI or co-PI on an awarded external grant during the review period may not be expected to produce as many peer-reviewed papers. The scope of the grant work and the reputation of the granting agency are qualitative factors that will influence the quantitative expectation for number of peer-reviewed papers and other Group I products.

Collaborative work is highly valued in the mathematical sciences, and there is no expectation that single-authored publications are required to demonstrate effectiveness in scholarship. Standards for determining author order vary within and across groups, so no inferences about level of contribution should be made based on author order. The candidate is required to identify the level of individual contribution to scholarly works [see Section 6.02].

### ***Teaching Expectations***

*Effectiveness in teaching* is achieved through the candidate's positive contributions to the design, delivery, and instruction of courses and labs, both in the Department and in other venues. *Effectiveness* is judged primarily from multiple peer reviews conducted by



Departmental faculty who observe the candidate in the classroom or lab during the review period. Written reports from peer reviewers document the candidate's teaching performance and serve as evidence to evaluate effectiveness. These reports are not shared with the candidate or anyone outside the designated RTP reviewers and review committees.

Graduate and undergraduate academic advising and mentoring are integral to the teaching mission of the Department. At the time of the tenure review, a candidate is expected to demonstrate evidence of ability to mentor graduate students. Evidence may include chairing or serving on graduate committees, but can also be exhibited through other types of graduate student interactions.

Course evaluations serve to provide a measure of student satisfaction. The Department expectation is that normally, for each course taught, the overall mean score from the student evaluation instrument is not less than the indicator for "Average." For example, 3.0 is the "average" evaluation score for "Overall Effectiveness" on an instrument with 5 categories (1=Poor, 2=Below Average, 3=Average, 4=Above Average, and 5 = Excellent). It is expected that any overall mean score below "Average" will be addressed by the candidate. Similarly, any issues related to teaching noted in the retention review should be addressed prior to tenure review.

### ***Service Expectations***

*Effectiveness in service* will be achieved if the candidate demonstrates active participation and competent execution of tasks in any of the areas of service described by the performance indicators. Service is expected to include at least one service activity that furthers the Department, College, or University mission. Participation in other activities that contribute to the candidate's discipline or profession (e.g., task forces or special programs) is also valued, especially when such participation raises the stature and reputation of the Department or the University in the state, the nation, or internationally.

### **Section 9.05 Evidence of Performance Indicators**

Applicable performance indicators, and evidence supporting the candidate's performance for each indicator, will be assessed using the contents of the candidate's dossier.

In addition to the listed evidence of performance indicators, properly documented nominations for and receptions of competitive awards for scholarship, teaching, or service will be considered as evidence of peer recognition.

### ***Evidence of performance indicators in scholarship***

The list of evidence presented in Tables 1 and 2 is not exhaustive. Other evidence supplied by the candidate that is related to the performance indicators for scholarship will be considered in the review. The Department RTP Committee will determine the weighting category (Group I or Group II) of indicators marked (\*) based on varying disciplinary norms for research publications and presentations.

Only scholarly products that have been accepted for publication, performance, or exhibition within the tenure review period will be considered. For works published in a journal not readily available through University databases, the candidate must include a digital copy of or link to the accepted work in the dossier. For works accepted for publication but not yet published, the candidate must include a digital copy of or link to the accepted work accompanied by an official letter or email indicating acceptance.

<b>Group I: Performance Indicator</b>	<b>Typical Evidence</b>
Refereed journal articles, monographs, book chapters, and textbooks in the mathematical sciences:	Full citation for the scholarly work, and either: (1) a URL linking to an online version of the work in published form; (2) a digital copy of the work in published form; or (3) a copy of the accepted but unpublished work with verification of acceptance.
Refereed journal articles, monographs, book chapters and textbooks in disciplines outside of the mathematical sciences that result from multidisciplinary research:	Full citation for the scholarly work, and either: (1) a URL linking to an online version of the work in published form; (2) a digital copy of the work in published form; or (3) a copy of the accepted but unpublished work with verification of acceptance.
External grants funded:	Grant number or code with URL or other contact where more information can be found. Brief description (title, funding agency and level, primary goals, length, collaborators if any).
Invited major talks (e.g., plenary or keynote):	Letter of invitation, copy of program, or full citation.
Invited high-profile seminars or colloquia (e.g., at prestigious venues):*	Full citation, including the title, venue, date, and level (Department, University, community, etc.).
Refereed proceedings published in connection with professional meetings:*	Full citation for the proceedings, and either: (1) a URL linking to an online version of the work in published form; (2) a digital copy of the work in published form; or (3) a copy of the accepted but unpublished work with verification of acceptance.

Table 1. Group I Performance Indicators in Scholarship and Typical Evidence. The Department RTP Committee will determine the weight of indicators marked (\*).

<b>Group II: Performance Indicator</b>	<b>Typical Evidence</b>
Refereed proceedings published in connection with professional meetings:*	Full citation for the proceedings, and either: (1) a URL linking to an online version of the work in published form; (2) a digital copy of the work in published form; or (3) a copy of the accepted but unpublished work with verification of acceptance.
Invited papers or presentations given at professional meetings:	Full citation including the title, co-presenters, organization, location, and date.
Contributed papers or presentations given at professional meetings:	Full citation including the title, co-presenters, organization, location, and date.
Grant proposals submitted (external and internal):	Grant number or code with URL or other contact where more information can be found. Brief description (title, funding agency and level, primary goals, length, collaborators if any).
Internal grants funded:	Brief description (title, source of funding, primary goals, length, collaborators if any).
Invited seminars and/or colloquia:*	Full citation, including the title, venue, date, and level (Department, University, community, etc.).
Non-refereed publications (e.g., non-refereed proceedings and technical reports):	Full citation for the publication or report, and either: (1) a URL linking to an online version of the work in published form; (2) a digital copy of the work in published form; or (3) a copy of the accepted but unpublished work with verification of acceptance.
Development and publication of scholarly products (e.g., software or curriculum materials):	Brief description of the product including an overview of content and format, intended use, potential audience, and location where it is publicly available.

Table 2. Group II Performance Indicators in Scholarship and Typical Evidence. The Department RTP Committee will determine the weight of indicators marked (\*).

***Evidence of performance indicators in teaching***

The list of evidence presented in Table 3 is not exhaustive. Other evidence supplied by the candidate that is related to performance indicators for teaching will be considered in the review.

<b>Performance Indicator</b>	<b>Typical Evidence</b>
Delivering quality instruction in support of the Department's teaching mission (as documented by faculty peer review of teaching):	Written report or letter from peer observer, submitted directly by the observer to the Department Head and maintained in Department files. The Department Head may serve as a peer observer.
Development and implementation of new pedagogical methods and/or curriculum materials:	Syllabus or other documentation of new methods or materials with evidence supporting innovation. Brief description of the implementation process, audience, and outcomes.
Design and facilitation of instructional programs (e.g., graduate teaching assistant training):	Agenda or other documentation of instructional program's goals and major components. Brief description of audience and outcomes.
Mentorship of graduate students (e.g., supervising or substantially contributing to graduate student research):	Brief description including graduate student name, research question/focus, funding or publications (if any), and progress to date.
Mentorship of undergraduate students (e.g., supervising undergraduate research or projects):	Brief description including undergraduate student name, research question/focus, funding (if any), and progress to date.
Student evaluations of instruction via University-approved instruments:	Student evaluation scores for all courses taught during the review period. Brief, overarching analysis of student comments (summary, selected quotes, or full list of comments). If appropriate, include a broad description of changes made in response to student feedback.

Table 3. Performance Indicators in Teaching and Typical Evidence

***Evidence of performance indicators in service***

The list of evidence in Table 4 is not exhaustive. Other evidence supplied by the candidate that is related to performance indicators for service will be considered in the review.

<b>Performance Indicator</b>	<b>Typical Evidence</b>
Membership and offices held in support of Department, College, or University missions:	Name and level of each committee or activity and dates of service.
Professional service in local, state, national, or international organizations in the mathematical sciences:	Name of each organization (with description as needed), offices or roles held, dates of service, and notable accomplishments.
Outreach in the mathematical sciences to local, state, national, or international communities:	Brief description of outreach activities, audience, and outcomes.
Active supervision of multi-section courses:	Course title, number of instructors, dates of supervision, and notable accomplishments.
Service as a reviewer or editor for a professional journal, monograph, or book:	Citations including name of journal, editorial role, dates of service, and workload.
Professional consultations that may or may not result in a co-authored publication:	Brief description of consulting activities, audience, and outcomes.

Table 4. Performance Indicators in Service and Typical Evidence

**Article X. Promotion to Rank of Associate Professor****Section 10.01 University Standards**

The University standards for promotion to the rank of Associate Professor are the standards for the award of tenure. Appointment at the rank of Associate Professor or Professor does not demonstrate, in and of itself, that standards for tenure have been met.

**Article XI. Promotion to Rank of Professor****Section 11.01 Timing of Review**

Normally, faculty are reviewed for promotion after the completion of five (5) years of service at the rank of Associate Professor, however, faculty may seek promotion earlier if they can establish that they meet the same standards of effectiveness and accomplishment or excellence used in evaluating candidates after five (5) years in rank.

### **Section 11.02 University Standard**

The University standards for promotion to the rank of Professor are:

- sustained effectiveness in teaching and service;
- sustained integration of no less than two of teaching, scholarship, and service; and
- excellence in scholarship

as demonstrated by the candidate's performance during the review period.

### **Section 11.03 Performance Indicators and Weighting**

The performance indicators and weighting used for this review are the same as those defined in Section 9.03 of this document, with the following two exceptions. In teaching expectations, an additional weight is placed on mentorship of graduate students. In service expectations, an additional weight is placed on active contributions to Department committees and programs.

### **Section 11.04 Quantitative and Qualitative Expectations**

#### ***Scholarship expectations***

The Department values intellectual discovery and the generation of new knowledge above all other measures of scholarship.

*Excellence in scholarship* is judged primarily by the quality of published scholarly works, with refereed articles being the most commonly used performance indicator. With respect to publication quality, the Department RTP Committee will assess excellence based on the evidence provided by External Reviewers. *Excellence* includes, but is not limited to, receiving national or international recognition from peers and colleagues as having made important scholarly contributions to the candidate's discipline. The Department expects that scholarly results will be disseminated through both publications and presentations.

It is expected that scholarship be of high quality, be ongoing throughout the review period, be commensurate with the associated discipline, and result in a substantive record of peer-reviewed scholarly products that impact the field. These products may represent both Group I and Group II indicators, and publications may be accepted, in press, or published at the time of review. At the time of promotion review it is expected that a substantial portion of the candidate's body of work will be comprised of Group I items. Due to the diverse nature of scholarship within the Department, expectations will vary across disciplines. Although the candidate's complete body of work since the tenure review is important, the candidate's scholarship performance will be reviewed primarily on the most recent 5 years of appointment, regardless of the amount of time that has elapsed since the candidate's tenure review.

Regardless of quantity of products, the quality of the candidate's scholarly body of work as documented by External Reviewers is of primary importance. In particular, the quality and reputation of journals and other scholarly venues, as documented by External Reviewers and disciplinary norms, is considered extremely important in the review process. It should be noted

that publication impact factors or h-indices and the like are not typically an important measure of prestige or scholarly productivity in the mathematical sciences. In some cases, a relatively small number of products with high impact may be acceptable for satisfying scholarship expectations, while in other cases a large number of products may not be sufficient.

A record of seeking extramural funds to support research activities is also expected. As recognition of the intellectual work invested in the early phases of a grant, a candidate who is active as a PI or co-PI on an awarded external grant during the review period may not be expected to produce as many peer-reviewed papers. The scope of the grant work and the reputation of the granting agency are qualitative factors that will influence the quantitative expectation for number of peer-reviewed papers and other Group I products.

Collaborative work is highly valued in the mathematical sciences, and there is no expectation that single-authored publications are required to demonstrate accomplishment in scholarship. Standards for determining author order vary within and across groups, so no inferences about level of contribution should be made based on author order. The candidate is required to identify the level of individual contribution to scholarly works [see Section 6.02].

### ***Teaching Expectations***

The expectation for this review is effectiveness in teaching, and the standard is defined in Section 9.04, with the exception that at the time of promotion review an additional weight is placed on mentorship of graduate students. The quality of mentorship of graduate students is of greater importance than the number of graduate students advised, and there is no minimum number of graduate students that the candidate is required to have advised at the time of promotion.

### ***Service Expectations***

The expectation for this review is effectiveness in service, and the standard is defined in Section 9.04, with the exception that at the time of promotion review an additional weight is placed on active contributions to Department committees, activities, and programs.

### **Section 11.05 Evidence of Performance Indicators**

Applicable performance indicators, and evidence supporting the candidate's performance for each indicator, will be assessed using the contents of the candidate's dossier. The description of evidence of performance indicators is found in Section 9.05 of this document.

### **Article XII. Procedures for Update and Revision of the Unit Role and Scope Document**

Faculty members are entitled to propose changes to Role and Scope Documents of their academic unit. Review committee members or administrators who identify a need for improvement, clarification, or other revision to the Department's Role and Scope may submit the request for changes to the chair of UPTC. The UPTC Chair will forward the recommendations to the unit. Submission to the UPTC chair should occur after the review committee or administrator completes all reviews for the year. Units will act on any proposed

changes received from the UPTC Chair on an annual basis and will undertake a full review of their Document no less than every three years.

### **Article XIII. Approval Process**

#### **Section 13.01 Primary Academic Unit Role and Scope Document**

- Tenurable faculty and administrator of the primary academic unit
- Retention, Tenure, and Promotion review committee and administrator of the College of Letters and Science
- University Retention, Tenure, and Promotion Committee (URTPC)
- Provost

#### **Section 13.02 Intermediate Academic Unit Role and Scope Document**

- Promotion and tenure review committee and administrator of the intermediate unit
- University Retention, Tenure, and Promotion Committee (URTPC)
- Provost