

# SCHOOL OF MATHEMATICS: GUIDELINES ON THE CRITERIA FOR PROMOTION AND TENURE

## 1. INTRODUCTORY STATEMENT

This document describes more specifically the indices and standards that will be used by the School of Mathematics to evaluate whether candidates meet the general criteria in Sections 7.11 and 9.2 of the Regents Policy on *Faculty Tenure* and the more specific criteria described in the *Institute of Technology Guidelines on the Criteria for Promotion and Tenure*. In addition, this document is consistent with the *Procedures for Reviewing Candidates for Tenure and/or Promotion: Tenure-Track and Tenured Faculty* (2007), hereafter referred to as the *Procedures*. The document also describes the procedures for annual reviews of probationary faculty as well as those for post-tenure review according to Section 7a of *Faculty Tenure*.

## II. DEPARTMENT MISSION STATEMENT

The mission of the School of Mathematics comprises three objectives: the pursuit and dissemination of new knowledge through original and creative research; the education of students and professionals at all levels through a dedication to effective teaching; and the advancement and application of mathematical knowledge and expertise through professional service.

## III. CRITERIA FOR TENURE

Section 7.11 of *Regulations for Faculty Tenure* specifies the criteria for tenure:

**7.11 General Criteria.** What the University of Minnesota seeks above all in its faculty members is intellectual distinction and academic integrity. The basis for awarding indefinite tenure to the candidates possessing these qualities is the determination that each has established and is likely to continue to develop a distinguished record of academic achievement that is the foundation for a national or international reputation or both [3] This determination is reached through a qualitative evaluation of the candidate's record of scholarly research or other creative work, teaching, and service [4]. The relative importance of these criteria may vary in different academic units, but each of the criteria must be considered in every decision [5]. Demonstrated scholarly or other creative achievement and teaching effectiveness must be given primary emphasis; service alone cannot qualify the candidate for tenure. Interdisciplinary work, public engagement, international activities and initiatives, attention to questions of diversity, technology transfer, and other special kinds of professional activity by the candidate should be considered when applicable. The awarding of indefinite tenure presupposes that the candidate's record shows strong promise of his or her achieving promotion to professor.

[3] "Academic achievement" includes teaching as well as scholarly research and other creative work. The definition and relative weight of the factors may vary with the mission of the individual campus.

[4] The persons responsible and the process for making this determination are described in subsections 7.3 through 7.6.

"Scholarly research" must include significant publications and, as appropriate, the development and dissemination by other means of new knowledge, technology, or scientific procedures resulting in innovative products, practices, and ideas of significance and value to society.

"Other creative work" refers to all forms of creative production across a wide range of disciplines, including, but not limited to, visual and performing arts, design, architecture of structures and environments, writing, media, and other modes of expression.

"Teaching" is not limited to classroom instruction. It includes extension and outreach education, and other forms of communicating knowledge to both registered University students and persons in the extended community, as well as supervising, mentoring, and advising students.

"Service" may be professional or institutional. Professional service, based on one's academic expertise, is that provided to the profession, to the University, or to the local, state, national, or international community. Institutional service may be administrative, committee, and related contributions to one's department or college, or the University. All faculty members are expected to engage in service activities, but only modest institutional service should be expected of probationary faculty.

[5] Indefinite tenure may be granted at any time the candidate has satisfied the requirements. A probationary appointment must be terminated when the appointee fails to satisfy the criteria in the last year of probationary service and may be terminated earlier if the appointee is not making satisfactory progress within that period toward meeting the criteria.

**7.12 Departmental Statement.** To be awarded indefinite tenure, a faculty member in the School of Mathematics must establish a record of excellence and creativity in scholarly research and its dissemination and must demonstrate effectiveness in teaching. These are the primary criteria, and the fulfillment of both is a minimum requirement for the awarding of indefinite tenure. Extraordinary distinction in teaching alone, or in research alone, is not sufficient for the granting of indefinite tenure.

A faculty member may choose to participate in service to the profession and in other governance and service activities. In some cases service contributions are an important and integral part of a faculty member's professional life. These contributions, however, are secondary to the teaching and research components in evaluations leading to decisions related to the granting of tenure. An outstanding record in the service component alone is not, by itself, sufficient to form the basis for a recommendation to indefinite tenure.

### **A. Teaching**

Effectiveness in teaching is assessed from the candidate's contributions to the overall teaching mission of the University including, where appropriate, classroom instruction, laboratory and individualized instruction at both undergraduate and graduate levels, the supervising of graduate students, and the advising of postdoctoral personnel.

Examples of factors which may be used in the evaluation of effectiveness in teaching at the undergraduate level include, but are not limited to, the following:

- written evaluations by peers based upon classroom visits,
- development of new courses and/or laboratories,
- supervision of undergraduate research projects,
- written evaluations by students,

- advising of undergraduates and of professional student organizations,
- development of instructional materials,
- publication of textbooks,
- local and national awards for teaching.

At the graduate level the primary consideration in establishing teaching effectiveness is expertise in the training of graduate students and postdoctoral personnel. Evidence may include the development and teaching of advanced courses, the conducting of graduate seminars, the supervision of graduate students at the Masters and Doctoral levels, and the mentoring and supervision of postdoctoral personnel.

Other factors that may be taken into consideration at the graduate level are:

- written evaluations by peers based upon classroom and/or seminar visits,
- written evaluations by students,
- development of new courses and/or laboratories,
- supervision of post-baccalaureate programs and students.

## **B. Research**

The primary criteria by which professional distinction in research is established are the quality of the candidate's research and the impact of the work within mathematics, and in case of interdisciplinary research, within related areas as well. Examples of factors upon which an analysis of the research accomplishments of the candidate may be based include, but are not limited to, the following:

- peer-reviewed publications in scientific journals,
- written evaluations of the candidate's research activities by experts in the field, and in the case of interdisciplinary work, within related areas as well,
- references to the candidate's research accomplishments appearing in the published work of experts in the field, and in the case of interdisciplinary work, within related areas as well,
- participation in professional conferences, symposia, meetings, and special lectures, especially those for which participation was by invitation.

The written evaluations are requested from persons who are generally recognized as leaders in the candidate's research area(s). The reviewers may include persons within the University and must include at least four, who should be of international stature, from outside the University, without direct connections to the candidate (e.g. as a co-author or as the PhD adviser). The candidate will be asked to suggest the names of reviewers to the Department Head in consultation with the Chair of the Tenure Committee, and the department will seek appraisals both from persons suggested by the candidate and from other leading experts in relevant research area(s).

In evaluating the candidate's research contributions through the various avenues of publication and presentation, the objectives are to establish that the work is of exceptionally high quality, that it is a scholarly and creative contribution to science, and that it is a measure of the candidate's ability to make continuing contributions in research.

Collaborations are often an important part of mathematical and interdisciplinary research. In evaluating such collaborations, it should be noted that it is a long-standing tradition in mathematical publications for authors to be listed in alphabetical order, with the presumption that all authors contributed equally, in essential ways. Expert reviewers are not asked to rank the contributions made by joint authors in collaborative work.

Other qualifications that the candidate may have acquired, and that may be used to establish the candidate's research ability include, but are not limited to, the following examples:

- election to prestigious national organizations that recognize excellence in mathematics,
- research awards and honors granted by professional societies, government agencies, and universities,
- external research funding from sources outside the University, only inasmuch as this is a measure of the research skill and competence of the candidate,
- publications or scholarly review articles and research monographs, as well as other relevant academic publications.

### **C. Service**

Outstanding discipline-related service contributions will also be taken into account where they are an integral part of the mission of the School of Mathematics. In some cases, service to the profession may be an integral component of a faculty member's professional obligations. It enhances the faculty member's professional reputation, and it brings recognition to the department and the University. By itself, however, service to the profession is not a sufficient basis for the granting of tenure in the School of Mathematics.

Examples of service contributions to the profession include, but are not limited to:

- editor or associate editor of a refereed scientific journal,
- office in a national or international scientific society,
- member of a national or international professional committee,
- member of a governmental or private advisory committee,
- organizer of a national or international symposium or conference,
- the reviewing of scientific papers for journal publication and conference presentation and the reviewing of proposals for funding,
- participation in public outreach and education.

Where appropriate, participation in the governance of the department and other services to the University may be included as additional support for a tenure recommendation. Examples of such service include, but are not limited to, active participation in departmental, collegiate, and University committees.

#### **IV. CRITERIA FOR PROMOTION**

The following paragraphs describe the criteria for promotion to tenured ranks from within the School of Mathematics. The same criteria and standards apply for appointments from outside.

##### **A. Associate Professor (with tenure) from Assistant Professor (probationary)**

Promotion to the rank of associate professor from the rank of probationary assistant professor in the School of Mathematics is always accompanied by the granting of indefinite tenure. Thus a candidate for promotion to associate professor must have established a professional record meeting the criteria set forth in Section III of this document.

##### **B. Associate Professor (with tenure) from Associate Professor (probationary)**

The granting of indefinite tenure to an associate professor on a probationary appointment requires that the candidate meet all the criteria set forth in Section III of this document.

##### **C. Professor from Associate Professor**

Section 9.2 of the *Regulations* specifies the criteria for promotion to full professor:

**9.2 Criteria for Promotion to Professor.** The basis for promotion to the rank of professor is the determination that each candidate has (1) demonstrated the intellectual distinction and academic integrity expected of all faculty members, (2) added substantially to an already distinguished record of academic achievement, and (3) established the national or international reputation (or both) ordinarily resulting from such distinction and achievement [8]. This determination is reached through a qualitative evaluation of the candidate's record of scholarly research or other creative work, teaching, and service [9]. The relative importance of these criteria may vary in different academic units, but each of the criteria must be considered in every decision. Interdisciplinary work, public engagement, international activities and initiatives, attention to questions of diversity, technology transfer, and other special kinds of professional activity by the candidate should be considered when applicable. But the primary emphasis must be on demonstrated scholarly or other creative achievement and on teaching effectiveness, and service alone cannot qualify the candidate for promotion.

[8] "Academic achievement" includes teaching as well as scholarly research and other creative work. The definition and relative weight of the factors may vary with the mission of the individual campus. Not being promoted to the rank of professor will not in itself result in special post-tenure review of a tenured associate professor.

[9] The persons responsible for this determination are the full professors in the unit who are eligible to vote. The outcome of the vote is either promotion to the rank of professor or continuation in rank as an associate professor. The procedures for voting are identical to those outlined in Section 7.4 for the granting of indefinite tenure, the nondisclosure of grounds for the decision (Section 7.5), and the review of recommendations (Section 7.6). In addition, a petition to

the Judicial Committee for review of a recommendation of continuation in rank as an associate professor follows the procedures specified in Section 7.7 for decisions about promotion to associate professor and conferral of indefinite tenure.

A candidate for promotion to the rank of professor in the School of Mathematics must have achieved a high level of professional distinction and a national or international reputation, through research contributions to mathematics and/or related fields that are distinguished by substance, quality, and creativity.

The candidate must also demonstrate continued effectiveness and high standards in teaching. Service to the profession, participation in the governance of the institution, and other services to the department, college, and University, may be taken into consideration, but they are not in themselves bases for promotion to the rank of professor. Promotion to the rank of professor will not be granted solely on the basis of length of service to the School of Mathematics.

All associate professors are strongly encouraged to work to achieve promotion to the rank of professor. In the School of Mathematics, candidates for promotion to the rank of professor are expected to have a record of accomplishment that exceeds that achieved for promotion to associate professor, according to the criteria given in Section III, with emphasis on:

- demonstrated high quality research indicating that the candidate is among the leaders in the field, as documented by letters from acknowledged national and international leaders and contributors to the knowledge based in the field,
- demonstrated high quality undergraduate and graduate teaching, including a record of effective advising of masters degree candidates, doctoral degree candidates, or postdoctoral personnel.

Examples of other factors that may be used to establish a candidate's professional reputation include, but are not limited to, the following:

- invitations to national and international symposia and conferences,
- research awards and honors granted by professional societies, government agencies, and other universities,
- membership and the holding of office in professional societies
- general professional contributions such as editorships, expository writing, and other activities that enhance the professional stature of the candidate.

The methods of assessment of the performance of a candidate being considered for promotion to the rank of professor are the same as those employed in the granting of tenure.

## **V. PROCEDURES**

The School of Mathematics complies with the *Procedures for Reviewing Candidates for Tenure and/or Promotion: Tenure-Track and Tenured Faculty* as provided by Sections 7.4, 7.61, and 16.3 of *Faculty Tenure (June 2007)* The School also complies with the Institute of Technology Guidelines on the Criteria for Promotion and Tenure.

Each faculty member's performance in the School of Mathematics is reviewed annually by appropriate committees appointed by the Department Head. The departmental Tenure Committee reviews the performance and progress of the probationary faculty and the Promotions Committee reviews all associate professors. The Department Head also conducts an annual performance review of all full professors. He or she seeks input as needed from selected faculty concerning research, teaching, and service.

It is the responsibility of the Department Head to review the progress of probationary faculty members on an annual basis. The Department Head also meets annually with each probationary faculty member to ensure that he or she receives effective mentoring, covering aspects such as publication of research, teaching, grant-writing and developing a collegial environment in the School. Mentoring may be formal or informal, and mentoring activities may be carried out by more than one faculty member, according to the individual needs of the probationary faculty member.

In accordance with Section 5.5 of *Faculty Tenure* the probationary period may be extended by one year at a time at the request of the faculty member for childbirth/adoption, caregiver responsibilities, or medical reasons. The criteria for evaluation of faculty who have had their probationary period extended are no different than the criteria for faculty who do not have an extension of the probationary period. Extension of the probationary period in accordance with Section 5.5 may not be a factor in the evaluation. That is, a record of six years post-hiring with a one-year stopping of the clock must be considered the same way that one considers five years post-hiring with no stopping of the tenure clock.

The responsibility for gathering and assembling the dossiers for candidates for tenure (i.e. probationary faculty in their decision year) resides with the Tenure Committee. This committee is appointed each year by the Department Head. The Tenure Committee prepares a report on each non-tenured faculty member whom it is recommending for either promotion and/or tenure or termination. In the case of disagreement among members of the committee, minority report(s) will also be prepared. The Head of the School of Mathematics will schedule a meeting of the tenured faculty for discussing the reports and recommendations. A second meeting will be called later for further discussion and votes on the recommendations by secret ballot. Absentee ballots are to be available one week before the second meeting and must be received by the Head of the School or a designated representative no later than 4:00 p.m. on the last business day preceding the second faculty meeting. The ballots are to be counted following the meeting. The Tenure Committee reports and recommendations, and any minority reports, are to be made available to the tenured faculty at least one week before the first of these two meetings. They are also to be made available to the affected faculty member at least two business days before they are circulated to the faculty, with a view to correcting factual errors, if any. The candidate may produce a written response which will be circulated with the reports.

The Tenure Committee will also prepare annual reports on the status of those non-tenured faculty members who are not being recommended for promotion and/or tenure or termination (i.e. those not in their decision years). These reports are discussed with the affected faculty member, who is given the opportunity to correct factual errors, if any, and to give a written response. The report is then discussed at a meeting of the tenured faculty. No vote on these reports is required. The report forms the basis for the statement that appears in the annual Form 12, and if there is a written response from the probationary faculty member, it is appended to the Form 12.

The responsibility for gathering and assembling the dossiers for candidates for promotion to the rank of professor resides with the Promotions Committee. This committee is appointed each year

by the Department Head. The committee assembles dossiers only on those candidates for which a complete review is in order. The Promotions Committee prepares a report on each associate professor being recommended for promotion. In the case of disagreement among members of the committee, minority report(s) will also be prepared. The Head of the School of Mathematics will schedule a meeting of full professors for discussing the reports and recommendations. A second meeting will be called later for further discussion and votes on the recommendations. A second meeting will be called later for further discussion and votes on the recommendations by secret ballot. Absentee ballots are to be available one week before the second meeting and must be received by the Head of the School or a designated representative no later than 4:00 p.m. on the last business day preceding the second faculty meeting. The ballots are to be counted following the meeting. The Promotions Committee reports and recommendations, and any minority reports, are to be made available to the full professors at least one week before the first of these two meetings. They are also to be made available to the affected faculty member at least two business days before they are circulated to the faculty, with a view to correcting factual errors, if any. The candidate may produce a written response which will be circulated with the reports.

In both tenure and promotion cases the following voting rules apply to the votes of the faculty. For a vote to constitute a recommendation, at least  $\frac{2}{3}$  of those eligible to vote must vote in favor of the recommendation. Recommendations include, but are not limited to, the following: (1) a recommendation to grant indefinite tenure to a candidate, (2) a recommendation to terminate the appointment of a probationary candidate, and (3) a recommendation to promote a candidate from associate professor to professor. In the final probationary year, if a motion to award indefinite tenure does not achieve the required  $\frac{2}{3}$  majority, then the recommendation of the faculty is to terminate the appointment of the candidate.

## **VI. POST TENURE REVIEW OF FACULTY PERFORMANCE**

### **A. Workload**

It is expected that each faculty member of the School of Mathematics contribute to the missions of the School, which include research, scholarship, teaching and communication, and service to the department, university and broader communities. The proportions of time spent on the various activities may vary among faculty members depending on their interests and talents, and these proportions may change over their careers. The administration of the School of Mathematics will see to it that the total workload is equitably distributed among the faculty.

### **B. Goals and Expectations of the School of Mathematics**

The faculty of the School of Mathematics, with its diverse interests, strives to achieve excellence in its primary goals: effective teaching of students and professionals at all levels, pursuit and dissemination of new knowledge through original and creative research, advancement and application of mathematical knowledge and expertise by interacting with a variety of communities.

### **C. Procedures for the Post Tenure Review Committee**

- (i) As described in Section V, the Department Head reviews the performance of each tenured faculty member in the School of Mathematics annually with the assistance of appropriate committees appointed by the Head. After such a review, if the Department Head determines that the performance of a tenured faculty member does not meet expectations of the School of Mathematics, he/she will work with the

faculty member in question for the period of up to one year to remedy the situation. If this does not lead to a mutually satisfactory resolution of the problem, then the Department Head will refer the matter to the Post Tenure Review Committee for their appraisal.

(ii) Composition and Election of Post Tenure Review Committee

(a) Composition of the committee:

Eight tenured faculty members who are not members of the departmental or university administration. The term will be two years and will be staggered. There will be two alternates with the term of one year.

(b) Election:

There will be nominations to form a slate of candidates for election to the committee. The tenured faculty will be provided with a list of all eligible faculty members from which they will select names to be nominated. Nominations will be signed. Any eligible faculty member in the School of Mathematics can be nominated. Faculty may nominate themselves.

Candidates will be notified of their nomination. Those unable to serve will be removed from the list of nominees. The remaining eligible faculty receiving nominations will be ordered by number of nominations, and the 18 receiving the most nominations will comprise the slate of candidates for the election procedure itself. IF fewer than 18 eligible faculty are nominated, then the slate of candidates will be enlarged by random drawing of names of eligible faculty until there are 18 nominees. The list of nominees will be communicated to the tenured faculty at least one week prior to the election of committee members.

To elect committee members, each tenured faculty member will vote (by secret ballot) for up to 6 of the nominees on the slate (no more than once for a given nominee). The 4 nominees receiving the most votes will join the Post Tenure Review Committee, replacing the 4 departing members. The 2 nominees next in order (by number of votes) will become the alternates for the committee, replacing the 2 alternates departing. Ties will be settled by the toss of a fair coin.

Arrangements will be made so that faculty on leave can participate in both the nominations and the final voting.

The procedure for the initial year will be the same except that the top 8 nominees will constitute the committee, and the next 2 (in order of number of votes) will be the alternates. The 8 committee members will draw lots to determine which 4 among them will vacate their positions after one year.

(c) Operation

Each year in early fall the Department Head will ask the committee to elect a chair and notify him/her of the election. The chair of the committee will be the

contact person for the Department Head for all communications with the committee. The committee will meet upon notification that, as described in (i) above, the Head has determined that a particular tenured faculty member's performance does not meet the expectations of the School of Mathematics and that the Head's efforts to resolve the matter with the faculty member have failed. The Head will submit these findings to the committee and to the faculty member in writing. The faculty member will have the right to respond in writing and/or orally, and to have representation before the committee.

The committee will conduct an independent inquiry. It may contact individuals both inside and outside the department to obtain additional relevant information.

To complete its investigation, the committee will vote, by secret ballot, to determine its findings. Possible findings (relative to the Goals and Expectations of the School of Mathematics) include, but are not limited to: "the performance of the faculty member meets or exceeds expectations", "there are minor deficiencies in the performance of the faculty member", "there are major deficiencies in the performance of the faculty member" and "the performance of the faculty member is substantially substandard." A proposed finding will be discarded unless it receives at least five votes, but the finding that "the performance of the faculty member is substantially substandard" must be unanimous to become the committee's finding.

If the committee finds that there are problems with the performance of the faculty member, but does not find the performance to be "substantially substandard", it should endeavor to find a procedure that both the faculty member and the Head agree can be expected to solve the problems with the faculty member's performance, and the Head's perception of it, by the next annual review.

If the committee finds that the performance of the faculty member is substantially substandard, it should endeavor to find a remediation procedure to which both the faculty member and the Head agree and which can be expected to solve the problems with the faculty member's performance within a certain time limit (usually a year).

In all cases the committee will issue a detailed written report(s) of its investigation and its findings; there may be majority and minority reports if there is no consensus. The report(s) will be given to both the faculty member and the Head.

In the case that the committee's finding is that the performance of the faculty member is substantially substandard, at the end of the time provided for remediation both the committee and the Head must again review the performance. If they again find that it is substantially below the goals and expectations of the School, the committee and the Head may jointly request that the Dean initiate a special review as provided in the FCC document on post-tenure review.

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