

2005

Computational Science: Appointment, Promotion, and Tenure Documentation

The College at Brockport

Follow this and additional works at: <http://digitalcommons.brockport.edu/apt>



Part of the [Higher Education Commons](#)

Repository Citation

The College at Brockport, "Computational Science: Appointment, Promotion, and Tenure Documentation" (2005). *Appointment, Promotion, and Tenure Documentation*. 10.

<http://digitalcommons.brockport.edu/apt/10>

This Document is brought to you for free and open access by Digital Commons @Brockport. It has been accepted for inclusion in Appointment, Promotion, and Tenure Documentation by an authorized administrator of Digital Commons @Brockport. For more information, please contact kmyers@brockport.edu.

Department of Computational Science

SUNY College at Brockport

GUIDELINES FOR TENURE AND PROMOTION

Preamble

Computational science is an emerging field at educational institutions, and research is the main driver behind curriculum updates and student preparation for the job market. Faculty involvement in computational research is absolutely critical for updating knowledge in support of the departmental curriculum. Therefore, scholarship is a very important component in evaluating faculty performance for tenure and promotions. The target profile that can best represent a benchmark for personnel decisions is 50/40/10 (teaching/scholarship/service). Being a leading player in undergraduate CPS education for historical reasons, we must continue this leadership at the national level. To continue our leadership, CPS faculty need to be in close contact with colleagues elsewhere, especially those involved in high performance computing research and those in the graduate-level computational science and engineering programs.

The purpose of this document is to establish:

- Minimum but not necessarily guaranteed conditions for tenure and promotion.
- Expectations for performance at rank in each area of evaluation and at each level of rank. *Reappointment, promotion, and tenure require at least performance at rank in each of the areas of teaching, scholarship, and service.* It should be noted that expectations for “performance at rank” apply throughout a faculty member’s career at Brockport, and not just for promotion and tenure. Departmental guidelines for tenure serve as the benchmark for expectations for continuing performance.
- A definition of “active program of scholarship.” This definition is based on an approximate yearly average of what would be necessary to achieve promotion and tenure for an incoming Assistant Professor over the normal seven-year tenure period. For the Computational Science department, it includes (a) at least one publication or publication equivalent, as defined below, every two years, and (b) at least one conference presentation or equivalent per year. Other contributions may count toward an active program of scholarship, and are considered on a case by case basis. Although an average of one publication every two years falls short of the requirement for promotion and tenure, it should be recognized that in a small department such as Computational Science, sudden, unexpected, and often heavy service tasks are commonplace and may disrupt scholarly productivity for a time. However, faculty members must still meet overall requirements for promotion and tenure.
- Expected teaching loads. The normal expectation is a 3/3 course load or its equivalent. The course load is reduced by 1 per semester for chair duties, and may also be reduced for grant-related buyouts or other responsibilities as approved by the Dean of Letters and Sciences. Faculty who fail to meet the expectation of an active program of scholarship will be assigned additional teaching and/or service duties.

A. Procedure for Academic Personnel Decisions

Academic personnel decisions include term renewals, tenure, and promotion in rank. As described in the *Faculty Guide to Academic Practices and Policies*, a detailed portfolio prepared by the candidate is considered by an APT committee constituted according to College guidelines, followed by the department chair, the Dean of Letters and Sciences, the Vice President for Academic Affairs, and the President of the College. Approval along this chain, in addition to a vote by the department as a whole, is required for a positive personnel decision.

Academic credentials and performance should only be reviewed by those with similar knowledge and experience. The responsibility of the APT committee is to evaluate the applicant. This involves not only a judgment, but also a clear statement of a supporting rationale in the committee's report to the department.

As part of the application, the candidate may submit a two-page letter addressed to the APT committee, the department chair, or the President of the College to provide highlights of teaching, research, and service from the perspective of the candidate. This letter is not to be a substitute for anything that is already in the candidate's file, but to signal to the reader what the candidate considers to be the most salient features of his or her work.

B. Definition of “Performance at Rank”

Components for evaluation of “performance at rank” in teaching, scholarship, and service are listed in detail in the discussion of tenure requirements. “Performance at rank” depends in part on level of experience, and expectations rise with each level of reappointment. Specific requirements for each rank are listed below, but the following general principles apply:

- In the area of teaching, a new faculty member will most likely teach courses that have been previously taught. Later, he or she will develop new courses in his/her area of expertise or revise courses as the Computational Science curriculum continues to evolve. Peer and student evaluations must show evidence of effective teaching, appropriate level of material and presentation, and continual efforts to solicit peer and student feedback and to improve teaching performance.
- In the area of scholarship, faculty are expected to develop and maintain an active research program, which is to include collaboration with scientists and/or educators inside and outside of Brockport, and to involve students at the undergraduate and/or graduate level. Evidence of an active research program may include, for example, papers and internal or external grant proposals submitted or accepted, conference presentations and other talks, refereeing of journal articles or proposals, publication of research or education-related software, and supervision of student research.
- In the area of service, faculty are expected to serve at the departmental, College, professional, and outreach levels. Service expectations for new faculty will fall mostly within the departmental level. As the faculty member gains experience at the College, he or she will be expected to participate more heavily in College level or outside of College service responsibilities.

C.1. Performance at Rank for Assistant Professors

Teaching

- “Good” or better average IAS ratings.
- Evidence of continual updating/improvement of course content and/or presentation.
- Peer evaluation within CPS of lectures and course content.
- Performing at teaching levels appropriate to scholarly productivity and any course reductions granted due to service tasks or other arrangements

Scholarship

- Maintenance of active program of scholarship.

Service

All of the following are required:

- Student advisement at the undergraduate and/or graduate level.
- Participation in SOAR sessions, Open Houses, and other departmental or College recruitment/advisement activities.
- Departmental service tasks assigned by the chair, appropriate to scholarly productivity and assigned teaching load.

In addition, at least one of the following is required:

- Mentoring of student independent study/thesis.
- Course development or significant revision.
- Special service tasks at the departmental level, for example those related to grant activity.
- Service tasks at the college or professional level.

C.2. Performance at Rank for Associate Professors and Professors

Performance at rank includes the requirements for assistant professors, plus the following

Teaching

At least one of the following is required:

- Perform a significant (or leading) role in curriculum development or policy at the department and/or higher levels.
- Pursuit of educational grants, or participation in educational grant activities.
- Participation in non-traditional teaching activities.
- Publishing or presenting education-related papers and talks.

Scholarship

At least one of the following is required:

- Fruitful collaboration with investigators outside of the College.
- Grant development leading to increased hardware/software resources for the department or College.
- Ongoing participation of students in faculty research.

Service

At least one of the following is required:

- Participation in College level service committees such as College Senate, Graduate Council, and so on, or for tasks requiring tenure such as APT committees.
- Service related to SUNY-wide activities.
- Professional service related to scholarship, such as refereeing or proposals or journal articles, journal editorships, and so on.

C. Guidelines for Renewal of Term Appointment

Before tenure, there are normally two term appointments lasting three years, followed by a third lasting one year. A review process is required in years 2 and 5 for passing to the next stage of reappointment, and in year 6 for tenure. For the first review the candidate must establish a vital program of teaching, scholarship, and service within the department. For the second review, the candidate must establish likely future suitability for tenure.

For term appointments, the period of evaluation should include all relevant activities at and prior to Brockport up to the time of application. In these applications, faculty member's contributions to three areas of scholarship, teaching, and service in the program should be documented in detail. Previously submitted annual reports should be included. There must be evidence that candidate's scholarship, teaching, and service activities are in support of the program's goals as a discipline and as a scientific unit, and of the program's future directions.

D. Guidelines for Tenure/Promotion to Associate Professor

The period of evaluation should include all relevant activities up to the time of evaluation, Brockport and elsewhere. However, the activities since the time of appointment will be given significant consideration. The candidate is expected to make substantial contributions in three main areas of evaluation, as detailed below.

D.1. Scholarship

1. A strong record of research accomplishments evidenced by at least 4 peer-reviewed research and/or education-related publications (in print or accepted for publication) which demonstrate scholarship beyond the candidate's doctoral dissertation. At least two of these publications must be in computational and simulation journals such as J. Computational Physics, Computational Polymer Science, High Performance Computing, Parallel Computing, Computers and Mathematics, Computer Physics Communications, Applied Math Letters, International Journal of HPC Applications, and SIAM Journals. Articles in refereed web-based e-journals will receive the same credit as paper-based ones. At least two of the publications must to be written during candidate's term appointments at Brockport. However, a person considered for a tenured position, as a new hire, will be judged on his/her work prior to Brockport. One or a combination of the following activities, altogether, can receive credit to be considered as a maximum of one (1) peer-reviewed publication mentioned above:

- A successful external grant (research, education, or equipment donation) to which the candidate is a PI, or co-PI.
- A publication of a full paper in the proceedings of a fully referred conference.
- A significant, innovative, and widely available software and/or hardware product that has been subject to peer review.
- Publication of a book chapter, a textbook, or documentation of a peer-reviewed hardware or software product produced by the faculty member alone or as part of a team.

D.2. Teaching

The candidate is expected to have demonstrated his/her ability as a competent and successful teacher. Since computational science involves topics in computer science, applied mathematics, visualization, and application sciences, an ability to teach a wide range of different courses at the both lower and upper (including graduate) levels is expected. A thorough review of a teaching portfolio includes:

- Peer evaluation: Observation of class sessions on several occasions by peers in CPS and other departments. The candidate as well as the department chair may arrange this. Written reports must be included in the portfolio.
- Student evaluation: evaluation data such as IAS, solicited and unsolicited testimonials with current and former students. Student evaluations of the faculty should be returned to the chair along with the faculty annual performance reports.
- Material evaluation: Examination of course-related materials: course syllabi and first-day handouts, class handout material, grading techniques, exams and quizzes.
- Self-evaluation: A report from the candidate about his/her teaching philosophy and progress made based on student and peer feedback. This self-evaluation could also address issues listed in the teaching criteria below.

D.2.1 Criteria for Teaching Evaluation

1. Ability in subject matter and use of expertise in and outside of the classroom.
2. Effectiveness of materials used in courses.
3. Appropriateness and consistency of material covered in regard to registered outline.
4. Clarity of goals and objectives and how successfully these are introduced to students.
5. Clarity of requirements expected from students.
6. Consistency between grading techniques and learning expectation.
7. Relevance of exams, quizzes, homework assignments, and projects to class materials.
8. Student feedback and perception about amount of work required and learned.
9. Student feedback on instructor's overall contribution.
10. Instructor's interest in student's learning and progress.
11. Instructor's level of enthusiasm for course and interaction with students.
12. Instructor's ability to foster an academic environment encouraging students to think analytically and become creative.
13. Effective use of technology (hardware and software) and computational problems in the field.
14. Ability to instill in students the desire to continue learning and to provide guidance.
15. Instructor's ability to retain students.
16. Availability and interest of instructor to work with students outside of class.

17. Ability & interest with programming assistance to students in person or electronically.
18. Availability of class material on the Internet or other forms of electronic distribution.
19. Number of educational publications or research-curriculum publications.
20. Evidence of effort to continue to improve teaching.
21. Evidence of awards and degree of recognition by college or university on teaching.
22. Contributions to curriculum.

D.3. Service

The candidate is expected to participate in assigned departmental duties assigned by the department chair. These include curriculum development, course registrations, software and hardware installations, system administration of high performance computing and visualization systems, evaluation of department-wide software and hardware, undergraduate and graduate advisement, grant activities, and finally recruitment and retention of students.

Measures of departmental service will include: time spent on an activity, number of students recruited to CPS program by the candidate, number of grad and undergraduate students advised, number of recruitment and advisement sessions participated in, number of internships advised and mentored, success of grant activities, and how smooth departmental hardware and software operates for tasks assigned by the chair. These services may vary from year to year and will be assigned to faculty by the chair depending on candidate's overall load.

An important service is the academic advisement of both graduate and undergraduate students. The students in CPS require a case-by-case advice because of the scope of the program. Every student is expected to select an area of application to test acquired computational skills. CPS students are exposed to 4 different areas of knowledge: computer science, math, computational techniques, and application science. The CPS faculty will be approached by students for help on all these topics, as this has been our experience from the student body we have had so far. This creates an extra burden on faculty for their preparation to meet such a demand. For a new and a comprehensive program as CPS, this activity needs to be accommodated by faculty as it affects the student retention and programmatic growth. Graduate students also require constant advisement due to the nature of their projects. Faculty's active involvement in computational research is needed to provide graduate students guidance and advice needed. The measurement of faculty performance on academic advice to both undergraduate and graduate students is very important. Faculty members should carefully document the scope of advice and the number of students advised. The academic advisement should be viewed closely with faculty members' teaching and research load, since proper advisement requires additional work for CPS faculty in the area of scholarship and course knowledge. Students taking non-CPS courses such as PHS 201-202-302, CSC 203-205-406, MTH 203-281-481-424 often consult our faculty for help. A survey of CPS students will be conducted by the department on an annual basis to collect feedback on the level of advisement received from faculty. Although faculty member's own statement to describe his/her advisement service will be adequate,

supporting evidence in terms of email and other communications with advisees can also be submitted. In a field as diverse as CPS, the number of advisees is not necessarily a measure of the activity. To advise even a handful of graduate and undergraduate students, faculty members may have to cover a wide range of issues and different knowledge bases to be able to help.

The candidate is expected to assume leadership roles in departmental activities. The candidate should be able to represent the department at the college level. Service to college could include College Senate, College Technology Council, and other committees. Service to profession includes program or general chairmanship of a conference in the field and active participation in national discussions of computational science education and high performance computing.

Another aspect of important service is active memberships in societies of high performance computing and simulation, industrial and applied math, computer science, visualization, and applied sciences. Any service in curriculum development of computational science and engineering programs in the nation's K-12 and higher education system will receive due credit. Standardization efforts in high performance computing hardware and software environments, and dissemination of software libraries and application packages to a user community is among highly respected services in this profession. Service to the department and profession is very important and should involve faculty at all levels, including those with continuing appointments.

E. Guidelines for Promotion to Professor

The period of evaluation should include all activities up to the time of evaluation, Brockport and otherwise. However, the activities since the time of appointment will be given significant consideration if the candidate is already at Brockport prior to applying for promotion.

E.1. Scholarship

A strong record of extensive scholarship and significant contribution to the discipline as evidenced by at least 8 peer-reviewed publications (in print or accepted) is required. At least four of these papers must concern research or scholarship performed after appointment to Associate Professor. In addition, at least four of these publications should be in computational, simulation or high performance computing journals and at least four of these should be authored during the candidate's appointment at Brockport if the initial appointment was at the level of Associate or Assistant Professor. Other scholarly activities that can receive credit towards (up to 2) publications are: successful grants, publication of a full paper at referred conference, significant and innovative software and hardware products and publication of textbooks and editing special issue of a journal. A high quality of scholarship must be evident in papers and scholarly activities as a demonstration of maturity and mastery in subject area.

E.2. Teaching

In addition to the expectations required for an Associate Professor, the candidate is expected to have demonstrated a continuing effort to 1) improve and update course

materials, 2) show leadership through introduction of new courses and curriculum, 3) examine integration of his/her research work and software into computational science curriculum, and 4) maintain a highly effective teaching profile as indexed by the indicators employed for tenure consideration.

G.3. Service

The candidate is expected to have undertaken a leadership role at departmental and college levels as well as service to professional community of high performance computing, and computational science and engineering. A substantial level of recruitment and student advisement is expected of the candidate. Leadership or active role in undergraduate or graduate curriculum development must have been demonstrated.