

STANDARD FIVE: FACULTY

Faculty Size, Recruitment and Diversity

Full- and part-time faculty members enable student learning in the classroom and by advising projects for WPI's undergraduate and graduate programs. In fall 2000, there were 218 full-time tenure and tenure-track faculty and 13 non-tenure-track faculty with full-time appointments that included teaching responsibilities. There were 34 part-time faculty equivalents. The ratio of students to faculty (defined as all faculty, full- and part-time) is 13 to 1. More than 97 percent of full-time faculty members hold the doctorate. Part-time faculty members are responsible for approximately 17 percent of undergraduate and graduate teaching at WPI (as calculated by percent of course and project units). Together, part- and full-time non-tenure track faculty account for approximately 28 percent of undergraduate and graduate teaching. (The figures provided here are as of fall 2000 since WPI officially posts such figures only once a year, in the fall.)

To receive merit salary increases, promotion and tenure at WPI, faculty members must demonstrate excellence in teaching and research, and must participate usefully in service—both to WPI and the professional community. These expectations for teaching, research and service define the fundamental structure of the faculty workload and, thus, determine the faculty size. The provost and department heads are fully cognizant that every department requires enough faculty to meet all of these expectations. Department heads are responsible for monitoring the overall workload and the distribution of effort among the various needs and faculty members within their departments, and to make the case to the provost, when appropriate, for additional resources.

The expectation in many departments is that faculty with significant research programs will teach in three of the four terms annually, and faculty without such research commitments will carry a heavier teaching load. (An exception: the faculty in Humanities and Arts voted to double this average load to assure that no classes in their discipline exceeded 50 students for a lecture or 25 for a discussion class.) In addition, faculty members are expected to advise undergraduate projects and graduate research and to serve as academic program advisors. Service includes contributions to departmental and campus-wide curricular development and governance, and to professional organizations.

Heads of academic programs and departments meet with the provost as part of the annual budgeting cycle to negotiate changes in faculty numbers to reflect changes in student enrollment, with the goal of maintaining a reasonable student-faculty ratio in and among departments. With

respect to the size of the overall faculty, Provost John F. Carney III analyzed the faculty size upon his arrival in 1996. He determined that a significant increase in the size of the faculty would be required to effectively support WPI's program and goals. WPI's current strategic plan endorsed this conclusion. The 218 full-time tenure and tenure-track faculty members at WPI in fall 2000 (including those faculty whose duties are primarily administrative) compares with 192 employed in fall 1995, with essentially the same number of undergraduate and graduate students. WPI has averaged 13.4 tenured or tenure-track hires, in new or replacement positions, each year during the last five years.

Tenure-track faculty recruitment begins with a faculty search committee in the relevant department. The committee advertises nationally to establish a pool of candidates qualified by their teaching and scholarly credentials. Early in the search process, the associate director of human resources meets with the chair of the search committee to review WPI search procedures, included in the document "Faculty Search Process" (*), especially the importance of increasing the numbers of women and underrepresented minorities within the faculty. Usually, several candidates visit campus for two days, presenting public lectures to demonstrate their teaching and research skills. The search committee, with the head, makes a recommendation to the provost, who issues a letter inviting the chosen candidate to join the WPI faculty.

WPI has been quite active since the last NEASC visit in 1991 in trying to build a faculty whose ethnic and gender diversity matches the diversity of its students and of the professional world in which they will work. With respect to the faculty, WPI's new strategic plan (page 30) specifically calls for "raising the percentage of minorities [in the faculty] from 11 percent to 15 percent and of women from 13 percent to 25 percent by the academic year 2010-11." In addition to complying with AA/EOE directives, WPI seeks to increase minority representation by advertising new positions in minority professional publications and by having the provost stress to department heads the importance of diversity in WPI hiring. In fall 2000, WPI had 16 Asian/Pacific Island faculty, six Hispanic and one African-American; several more minority faculty currently with full-time positions are in the process of becoming U.S. citizens or resident aliens. During the last five years, WPI has hired 20 female faculty in tenure-track positions.

The Provost's Office issues all letters of appointment for part-time faculty and ensures consistency with respect to scope of service, benefits and titles. The policies governing this process are documented (*).

WPI restricts graduate teaching assistants to supporting roles, such as providing lab and section support and grading materials. Faculty members are directly responsible for the quality of performance of any graduate students working with them in undergraduate pedagogy. WPI offers a number of innovative programs through which undergraduate and graduate students may develop their teaching skills as they also enrich courses taught by faculty members. Doctoral students who complete the two-credit Seminar in College Teaching may enroll in the Practicum in College Teaching, during which they participate in a teaching experience mentored by the course faculty and another faculty member associated with the practicum. In addition, undergraduate Peer Learning Assistants (PLAs) support large introductory courses by facilitating cooperative learning student groups.

Faculty Salaries, Merit Raises and Assessment

Faculty salaries at WPI depend upon the quality of the contributions made by each individual faculty member; the salary increment for each faculty member is determined by assessing merit and is communicated annually through letters of reappointment in mid-April. WPI's policy with respect to faculty salary ranges is to compare salaries by discipline annually for the levels of assistant, associate and full professor with other institutions within the Association of Independent Technological Universities (AITU). The provost reviews these data at least once a year at both a faculty meeting and with faculty committees. Generally, WPI compares favorably with the other AITU institutions at the assistant and associate professor ranges. In fiscal years 1999-2000 and 2000-01, funds were earmarked for increases within the pool of full professors to address an inequity at this level. WPI's overall intention, as stated on page 30 of the strategic plan, is to "raise faculty salaries from the 40th to above the 50th percentile of the AITU peer institutions by fiscal year 2005."

WPI faculty members document their contributions to teaching (including academic advising), scholarship and service by completing a faculty annual report in preparation for the spring merit raise reviews. This report is usually revised as needed for inclusion in the overall departmental annual review submitted in the summer.

By vote of the WPI faculty, students in all undergraduate and graduate courses have the opportunity to evaluate those courses using a written form distributed in the classroom at the end of the term. Faculty members receive the paper forms after processing, including student responses to a set of open-ended questions that are seen only by the faculty member who taught the course. The aggregated results of the student evaluation are compiled for every faculty member teaching a course and are available on campus through the WPI Web site. Students have easy access to these data when selecting courses. The Provost's Office, department heads, and the tenure and promotion committees regularly use these data as an aid in making decisions about merit pay increases, promotion and tenure. Faculty members are also informed twice a year of the distribution of student responses so they know in which quartile their course evaluations fall. If a faculty member's evaluations appear in the bottom decile twice or more, the assistant provost contacts the relevant department head concerning this situation.

Promotion and Tenure

Nominations for promotion and tenure normally originate in the home department of the faculty candidate, and are reviewed extensively by, respectively, the Committee on Appointments and Promotions (COAP) and the Committee on Tenure and Academic Freedom (CTAF). The constituency and operations of these committees, as well as the criteria for promotion and tenure, are stated in the Faculty Handbook. Both committees conduct intensive reviews of the candidate's nomination and portfolio, seeking written comments from former students and from the candidate's peers (using separate lists of potential recommenders provided by the candidate and by the department head). The provost has the final responsibility for submitting the names of candidates deemed worthy of promotion and/or tenure to the Board of Trustees for its vote at the February board meeting.

Probationary faculty members are given one-year contracts at WPI with the expectation that, upon appropriate demonstrations of excellent performance, these contracts will be renewed annually up to the year of a successful tenure review. Approximately half of the tenure-track faculty hired in a given year remain at WPI and receive tenure; most of those who leave elect to do so to pursue other career opportunities. Probationary faculty members are reviewed at least biennially within the department and by the head and the provost. Department heads are responsible for assisting probationary faculty in identifying and solving problems in their teaching, research and service that prevent them from making high-quality contributions to WPI. Such discussions are documented so that in those rare cases where WPI terminates a probationary faculty member before the year of tenure review, the reasons for taking this step are fully recorded. These procedures are designed to assure that the large majority of faculty who are reviewed for tenure are granted tenure.

In 1997-98, a new faculty governance committee, the Faculty Review Committee, was created. This committee has the power to review and to require reconsideration of

- the provost's actions on non-renewal of probationary, tenure-track appointments,
- the provost's negative decisions on tenure, and
- the Joint Tenure Committee's negative recommendations on tenure,

where the action, decision or recommendation is alleged by an aggrieved faculty member to have resulted from a violation of academic freedom, from improper procedure, or from discrimination on any of the grounds listed in the section titled "Faculty Grievances." (At WPI, the Joint Tenure Committee is specific to one or more candidates from a given department, and is constituted of members from the at-large committee and from the candidate's department).

In spring 2000, the WPI faculty approved a set of changes in the procedures for tenure and promotion. The first significant change provides a mechanism for recusal of tenure committee members who have a direct conflict of interest with the tenure candidate; it requires recusal of an at-large tenure committee member who has the same departmental affiliation as the tenure candidate. A second significant change refers to the procedures by which the reviews for tenure and promotion from assistant to associate professor are conducted. Following a phase-in period, the tenure committee will review assistant professors for both tenure and promotion to the rank of associate professor whenever the tenure and promotion review are to be conducted in the same year.

Faculty Professional Development and Accountability

Support for faculty professional development occurs formally and informally. New faculty members are invited to new faculty orientation, which includes a half day focusing on general issues, a full day on teaching at WPI, and several follow-up sessions and luncheons on specific concerns. New faculty members are offered the opportunity to match with established faculty in mentoring programs, both in their department and outside (for an introduction to advising IQPs, for example.)

Small grants funded by WPI are awarded competitively through internal peer review to faculty seeking support to initiate

- new teaching strategies (through the Educational Development Council, budgeted annually at \$25,000).
- new research programs (through the Research Development Council, budgeted annually at \$100,000).
- new advising strategies (through the Excellence in Advising Program of the Committee on Advising and Student Life, budgeted annually at \$10,000).

The Office of Research Administration (described in Standard 4) provides a wide range of support activities to faculty engaged in research and scholarship. WPI encourages leaves of absence and sabbaticals, which are negotiated by the department and the provost. Normally, full-year leaves receive 50 percent support from WPI, while half-year leaves are fully supported. Faculty members at WPI do not automatically take sabbatical leaves every seven years; applications must be made through the department and be reviewed by COAP to ensure continuity of faculty resources in each department. In 1999, a new program of “mini-sabbaticals” (paid leave for a single seven-week term) was introduced to provide more flexibility for leaves that nurture faculty development. The mini-sabbaticals program is in addition to, not a replacement for, the regular sabbatical program.

Faculty members at WPI are held to the highest standards of teaching, research and service, as well as of professional and ethical conduct. The Faculty and Administrative handbooks outline WPI policies in such areas as academic freedom (freedom to present material relevant to the course or project), intellectual property (rules for sharing ownership of potentially patentable ideas among student teams or sponsors as relevant), and professional conduct with respect to students and colleagues.

Appraisal

Finding full-time faculty ideally suited for WPI’s distinctive expectations for excellence in both teaching and research requires considerable attention, especially in the current highly competitive career market in science, engineering and management.

WPI has no quota on the number of faculty who may be given tenure in a specific year. Consequently, faculty hired into tenure-track positions are selected with the intention that they will achieve tenure in that faculty line. However, since the student population can shift rather sharply among departments and since students are admitted into WPI rather than into specific departments, moving faculty into departments enjoying a surge of student interest is problematic. Computer science currently has the most adverse student-to-faculty ratio, a situation exacerbated by highly competitive salaries for computer science professionals with advanced degrees.

Faculty governance began a review of WPI’s system of student course evaluation in 2000-01. The student evaluation system for projects is essentially defunct, and a system for evaluating academic advising is being developed. Some faculty believe that an assessment system should be created to evaluate scholarly activity, to parallel assessments of teaching activity.

Responding to the new pedagogical strategies required of outcomes-based learning has required considerable attention and energy on the part of the faculty and administration. These demands are especially marked in the engineering disciplines, where the outcomes are specified in considerable detail by external accrediting bodies. Ideally, every faculty member should be involved in formulating measurable learning outcomes for all of his or her educational activities, assessing the data on student accomplishment, and regularly planning curricular and pedagogical changes based on this analysis. However, it isn't clear which other current activities will yield the time to accomplish these tasks.

Identifying and retaining part-time faculty in all disciplines is a difficult, though not insurmountable, challenge. Of concern recently has been the monitoring of part-time faculty, especially with respect to teaching, and assuring that such faculty are knowledgeable about WPI's educational systems (especially projects) and held fully accountable by the relevant department head.

A process adopted by the faculty in 1987 for periodic review of teaching by tenured faculty is not being carried out consistently among departments.

WPI is committed to being a "family-friendly" university. At the March 2001 faculty meeting, the faculty voted to accept a significant revision to tenure procedures to give faculty the option to "stop the tenure clock" when a new child enters a family. Specifically, the new provision (*) to WPI's tenure policies specifies that "whenever a tenure-track faculty member has a first or additional child (biological or adopted) during his/her probationary appointment, she/he has the option to postpone by one year the academic year in which the tenure decision will be made."

The nine new faculty members who participated in a mentoring program during academic year 2000-01 were asked for their ideas on what WPI could do to better support new faculty. The sense of their discussion was that: "The new faculty are enthused about WPI! They think it is a great place." In their comments, they made the following points:

- The new faculty members are impressed by the dedication to teaching that is clear in all of the new faculty class. They feel that this type of consistent attitude is not an accident, but a positive reflection on the recruiting practices of the University. WPI is clearly attracting the right people, at least from a teaching standpoint.
- In spite of WPI proclaiming that this is an institution where both teaching and research are important, the startup packages and teaching loads for new faculty clearly indicate this is a teaching school. Other schools offer more than one summer of support, the first year of appointment with no teaching responsibilities, supported graduate student slots, more startup money, and considerably more travel money. The fact that WPI often doesn't begin to renovate research laboratories until after a new faculty member has arrived is a significant detriment to young faculty productivity. If the University expects new faculty to achieve research productivity quickly, more needs to be done to support them in this area.

- If course assignments turned over less, all faculty might be expected to be more productive with respect to research, and might also write more textbooks (which result from years of refining the same course).
- WPI's image is important to the ability of all faculty to get external funding. WPI needs to be more proactive in marketing its research successes, which are considerable. It would be helpful to faculty to have more support in making contacts for off-campus projects and contracts.

Projection

WPI faculty salaries must remain competitive with those of the top technological universities in the country. Currently, WPI is competitive in most areas, but progress needs to continue to be made in increasing salaries at the full professor level. In addition, significant salary adjustments must continue to be made in certain specific disciplines where market forces warrant. WPI's faculty is in high demand by other schools; the University is determined not to lose talented faculty to other universities because of salary issues.

Faculty governance and the Provost's Office are discussing revisions to the student course and project evaluation system. A committee worked on a revised course evaluation form in summer 2001, for discussion in faculty governance in the fall.

WPI recognizes that its project-based undergraduate curriculum is a time-intensive method of teaching and learning. In addition to the usual commitment to teaching courses, WPI faculty are involved in advising small teams of students on their various projects—three of which are degree requirements. In addition, faculty members are expected to achieve and demonstrate excellence in scholarship. Because of these extra demands on faculty time, WPI must continue to increase the size of its tenure-track faculty.

WPI needs to develop a new workload model, giving appropriate value to student and project advising, to research, and to other activities important to carrying out its strategic plan.

WPI will continue to employ part-time faculty. But, through discussions among faculty and administration, WPI must ensure that their conditions of employment and of accountability are clearly defined. In 2000-01, faculty governance began a review of the roles, responsibilities and accountability of part-time faculty (including those with both staff and teaching activities) and of full-time non-tenure-track faculty.

With respect to the observations of the new faculty, covering the costs for creating new laboratories for new faculty, as well as their summer support and other start-up costs, is an important priority in building future budgets. A substantial long-term investment in enhancing WPI's image and reputation was discussed by the Board of Trustees at the May 2001 meeting, with plans being made in summer 2001 to take specific steps to enhance the University's reputation.

There is a shortage of faculty office space and undergraduate and graduate laboratory space on campus. The University is considering the construction of a new academic building to alleviate this problem.