Science Teaching University Circle

Mandate:

To suggest a framework that furthers our traditional core values of undergraduate education, by recognizing and rewarding excellence in teaching as well as in research.

Current Values and Practices to Retain:

OUC currently has a distinct learning environment with quality instruction and smaller class sizes. We want to continue to teach to small class sizes to ensure students have access to faculty and to one-on-one learning as needed. We want to continue to value teaching with respect to decisions made on promotions and tenure. We expect to attract students to the Valley due to our reputation and commitment to teaching. This will be a net benefit in funding from increased student tuition. A degradation in the quality of teaching will only drive students elsewhere and result in a loss of such funding.

We would like to continue with the current union-negotiated placements on the salary scale, plus the annual steps in increases in salary, so as not to create disparity and acrimony between faculty members. Our current faculty members work with each other in a collegial and collaborative way. Basing salary increases on "merit increases", which typically only apply to those with a strong research program, only fosters competition and disharmony.

We want to retain the laboratory component of our courses. There is tremendous value to applied learning in the lab or in the field.

New Directions:

We expect to be able to increase connections between research and teaching by developing and integrating aspects of our educational programs around faculty research. The goals of this initiative would be two-fold. The first goal is for students to be exposed right from the beginning to the process of Science, and its pitfalls, in a less remote way than is often presented in lectures and a less artificial way than the simplified laboratory experiments that are often used in first and second year. By utilizing local researchers and their programs the students may more easily envision themselves becoming involved in such research in future years. The second goal is to highlight the integrative nature of the various disciplines within Science and Mathematics to the research process. To ensure this succeeds we anticipate there will be a number of requirements on the infrastructure level as well.

Recommendations:

- exercises in the regular lab component of a course incorporate some of the activities of a specific research program
- secured space to mount displays and activities related to a specific research program become associated with teaching labs, so that students could visit it on their own time and complete assignments related to the activities of the research program

- that on-line visual demonstrations (including video clips) of activities and experimental design in field research programs, and even aspects of data analysis, become an integral part of teaching both in the lectures and in the labs

- infrastructure needs to be built in such a way as to allow for the continuation of and expansion of quality teaching, such as:
    - minimizing mega classrooms to ensure that class sizes stay under 200 students for pedagogical reasons
    - infrastructure to allow for the introduction of wet lab demonstrations into lectures
    - the ability to poll students in-class via electronic keypads
    - digital projectors in labs connected to the server for direct demonstration of materials

We would like promotions to be based on both quality of teaching and/or on quality of research. The wording of the student evaluations must be improved in order to give us a valuable metric by which to judge quality of teaching. We also believe that peer reviews in the classroom would be beneficial to such decisions. In order to avoid conflicts we propose that a faculty-wide review committee be established.

The University of Guelph has established a system in which both teaching and research are rewarded. Criteria for promotion and tenure are agreed to in advance by a faculty member and his/her department, and may reflect differing career paths for different people. Both peer and student evaluation of teaching takes place, and faculty members maintain a teaching dossier. Career paths can emphasize research, teaching, administration, etc, but it's made clear that a "teaching" path has to entail far more than just instructing courses, there has to be scholarly activity beyond that. The chosen path is flexible; it may vary not only from faculty member to member, but also over the course of a given faculty member's career.

This system will have the added benefit of a cost savings since not all faculty members will choose the research-intensive path and will instead have a higher teaching load. This will result in requiring fewer faculty members overall to cover the courses being offered.

Recommendations:

- Each career path must leave open the possibility of promotion to the highest academic ranks and no path is to be deemed as inferior to any other
- Student evaluations should be revised to yield a better metric for evaluating teaching
- Suggested changes listed in Appendix A
- That the union representing the faculty at UBCO establish a model for tenure and promotion that recognizes the value of teaching as well as research
- That the union representing the faculty at UBCO lay out a number of career choice directions that allow individual faculty members to determine their expected levels of teaching versus research versus other activities (eg. 60/20/20 or 20/40/40, etc)

The role of graduate students in teaching is important and valuable. Firstly, it must be recognized that such roles and responsibilities will likely be department-specific. However, we envision that, in general, graduate students will act as teaching assistants and will have responsibilities such as teaching lab sections, marking, and the running of tutorials and/or seminars. We also expect that they may teach specific lectures in their areas of expertise as guest lecturers.

Recommendations:

- Concrete guidelines need to be established outlining the roles and responsibilities of graduate and undergraduate TA's
- Suggested guidelines to follow

University Circle Members:

Mary Forrest
Rebecca Tyson
Steve McNeil
Kerry Davie
Dale Donovan
Rosemary Capell
Blythe Nilson
Sandra Kenefick
Dave Murray
Laura Hooker

Appendix A: Proposed changes to student evaluations

Some of the questions in the current teaching evaluations deal with issues that are beyond the instructor's control, or are sufficiently vague or ambiguous that their responses convey no meaningful information. Worse, few (if any) of the questions directly assess the ability and knowledge of the instructor in a clear and meaningful way. This stands in contrast to teaching evaluation questions commonly used at both the university and college levels in British Columbia.

Questions of particular concern:

The Professor covers new ideas at a reasonable rate.

Often, particularly in first year courses, the course curriculum is dictated by factors far beyond the instructor, and so responses to this question in no way reflect a given instructor's ability to prepare or pace the material. Note also that a student who strongly feels that the course is proceeding too slowly and a student who strongly feels that it proceeds too quickly will provide an identical response, so that poor ratings offer no real feedback.

The Professor has increased my interest in the subject of the course.

What of the student who was already highly interested when s/he got there? What of the professor whose teaching assignment always includes an inherently less exciting (but important and necessary) course?

Questions like #12 and #17 are vague to the point that few people would agree on exactly what they are asking. What is a clear explanation of "expectations" on an exam? A list of learning objectives? An itemized list of sections from the textbook to be covered? The actual exam questions? "You need to know everything I told you in lecture"? "I expect one third of you will fail"?

Overall, our current questions address important issues only superficially or tangentially, and never touch on matters of substance. For example:

The questions ask whether the course *outline* was clearly presented, but not whether the actual course material was presented in such a fashion.

The questions ask whether the professor answers questions *clearly*, but not whether the answers are actually correct, or indeed whether the professor has any demonstrated knowledge in the subject whatsoever.

The questions ask whether the professor was *available* for consultation outside of class, but not whether s/he was in any way helpful during these consultations.

The questions ask whether the exams are fairly *marked*, but not whether the exam itself is fair. Since an individual student generally will not see other students' exams, how are they to judge whether they were treated unfairly? Neither do the questions ask whether the exams and assignments actually helped the student learn anything.

Possible replacement questions, used at other institutions:

The instructor presented material in an interesting way.
The instructor stimulated students to think.
The instructor appeared to know this subject well.
The instructor encouraged questions from the class.
The instructor explained abstract ideas clearly.
The instructor was enthusiastic about this subject.
The instructor was helpful outside of class.
Overall I would rate this instructor as effective.