

**REPORT OF THE ACADEMIC REVIEW PANEL ON
THE FACULTY OF MEDICINE GRADUATE STUDIES PROGRAMS
Memorial University of Newfoundland**

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Introduction

The Faculty of Medicine's Graduate Programs consist of eight separate areas of research concentration:

- Clinical Epidemiology
- Community Health and Humanities
- Human Genetics
- Cancer Research
- Cardiovascular and Renal Physiology
- Immunology and Infectious Diseases
- Neuroscience
- Applied Health Services Research

Each area of concentration has a Program Coordinator, while all programs combined are the responsibility of the Associate Dean for Graduate Programs and Research (Dr. P. Moody-Corbett). In addition, there are three Associate Deans: for Clinical Research, the Division of Community Health and Humanities, and the Division of Basic Medical Sciences. There is also a Discipline Chair for Genetics. Together, the Associate Deans (except for Clinical Research) and Program Coordinators sit on a Graduate Studies Advisory Committee for the Faculty of Medicine, which has responsibility for approval of new courses, student admissions, funding, awards and program issues.

Each program varies in size, in terms of number of faculty and graduate students, and issues. Most of the programs have doctoral students as well as master's students. There are relatively few post-doctoral fellows. All programs were described in the Self-Study Report for the Faculty, and all were considered in this Academic Program Review.

Members of the Academic Program Review Panel met with Dr. Eddy Campbell (VP-Academic), Dr. Chet Jablonski (Dean of Graduate Studies), and Dr. James Rourke (Dean of Medicine) on the morning of November 20th. General and specific issues the Review Panel might consider were discussed. Over the two days of the Review (November 20th-21st, 2006), we toured the facilities relevant to the graduate programs in the Faculty of Medicine, and met with:

- The Associate Dean, Graduate Programs and Research
- The Program Coordinators from all eight programs and Discipline Chair, Genetics
- Faculty members
- The three Associate Deans
- Administrative staff
- Graduate students

We would like to thank Ms. Robyn Saunders of Memorial University's Centre for Institutional Analysis and Planning for coordinating the schedule and accommodating requests for additional documents and meetings.

Issues and Recommendations

Overall, the programs function well, and both faculty and students were enthusiastic about, and proud of, their respective programs. Some issues identified were relevant to all programs, while other issues were more relevant to some than others. The overall organizational structure, which was somewhat difficult to grasp since it is different from that of other faculties, appeared to be accepted by all with only one recommendation for changing sign-off of admissions. Everyone we spoke to was very complementary about the Associate Dean and the Office of Research and Graduate Studies. This report summarizes the key issues identified from the review of the Self-Study Report and discussions, with recommendations for follow-up.

Space

Everyone identified limited space as a major concern. Students in some programs have no designated space and therefore work in the library or at home rather than the department, whereas students in other programs have one space in the lab for all activities. The current situation was said to not pose a threat to lab safety, but other implications were identified: there is reduced student-to-student interaction and reduced student-faculty interaction when students are not in the same physical area. There is also disruption in workflow and ability to concentrate when one must resettle a space from one activity to another, or move to a different location. Furthermore, future program growth is severely constrained when there is inadequate space for current faculty, students and research activities.

Recommendation 1: The current Space Committee should reassess and reallocate existing space. It should be noted that this would address the space problem only to a limited extent and only on a short-term basis.

Recommendation 2: The University should find new space. The real solution to the space problem lies with creating new space, whether additional wings/floors or a new building.

Time to Completion

The Self-Study report shows an average time to completion of 4+ years for the M.Sc. degree, and 5+ years for the Ph.D. degree. There was general consensus of the Review Panel and faculty members that 5 years was a reasonable expectation for the Ph.D. degree, but that times to completion for the M.Sc. degree were high, with 2 – 2.5 years being a reasonable timeframe for completion of the M.Sc. degree.

Most programs in the Faculty of Medicine agreed that 4 years was too long for the M.Sc. degree, and reported their times to completion as being much shorter than that. Completion times were not available by program. The one exception was the Clinical Epidemiology program, members of which felt that 4+ years for the completion of a M.Sc. degree was justifiable because of the unique demographic their students represent. Many Clinical Epidemiology students are residents or physicians with an interest in clinical research. Clinical Epidemiology faculty reported that

their students would often complete the required course work and research, but delay in the writing of their thesis due to other more pressing time commitments. As a result, these students remain enrolled and artificially inflate the time to completion statistics for the Faculty of Medicine.

Recommendation 3: To more accurately portray time to completion rates for the graduate program in medicine, statistics should be reported on a program-by-program basis for the time being.

Specific solutions to address the issue were discussed with Clinical Epidemiology, including the idea of a publication-based M.Sc., which is an acceptable format within the School of Graduate Studies. This option has potential for reducing times to completion in the Clinical Epidemiology program.

Recommendation 4: Clinical Epidemiology faculty should review the possibility of acceptance of a publication to a peer-reviewed journal in lieu of a thesis, and promote this option where applicable to students.

The majority of faculty agreed that 2-2.5 years was a reasonable timeframe for completion of a M.Sc. but could identify situations where completion might take longer such as problems with experiments, student-supervisor problems in terms of delays in feedback, or poor writing skills. There were some questions raised as to whether students and supervisors may be developing projects that are inappropriate in size for a M.Sc. thesis. The conceptual and decision-making processes of transition from M.Sc. to PhD were unclear. Some programs have more courses than others, which may also affect progress as students have less time to work on thesis research when taking courses. Currently, there are no guidelines in place to outline reasonable expectations of what is required to complete a satisfactory thesis, nor have programs' courses been reviewed to assess their impact (positive and negative).

Recommendation 5: Each program should review its time to completion, requirements for degree completion, and potential sources of problems if time to completion is in fact a problem. Actions to address any problems identified would then be implemented on a program-by-program basis, but would have an overall impact on reducing, to the norm, the average time to completion for graduate studies in the Faculty of Medicine.

Recommendation 6: Guidelines should be developed, or at least expectations clarified, by faculty members to describe the amount and type of work that represents a reasonable standard for the completion of both the M.Sc. and PhD. degrees.

Recommendation 7: Guidelines should be developed, or at least expectations clarified, by faculty members to formalize the transition from M.Sc. to PhD in terms of scope of project and timing of decision.

Loss of Graduate Students to the MD Program

A number of students are failing to complete their graduate degrees following acceptance to the MD program, though the exact number is unclear. Several programs reported especially high attrition rates, and this clearly frustrated faculty members. We were told of students who had made commitments to their supervisor that they would complete their graduate degree and who then applied to the MD program without even informing their supervisor. Many felt that allowing students to abandon one program prematurely for another program in the same faculty presented an ethical dilemma: students should have options, but faculty members invest significant time and resources in training their students with the expectation of adding a productive researcher to the lab. If the thesis and research is left incomplete, such investment by graduate supervisors has in essence been wasted.

We see two possible solutions. One possible solution discussed with faculty was requiring students to complete their graduate degree first, and to defer admission if accepted into the MD program until the graduate degree has been completed. Throughout Canada, most medical schools routinely require graduate students to complete their program of study before enrolling in the MD program. Below is a sample of text taken from two Canadian medical school websites.

- Dalhousie University medical school website states: “Graduate students must complete and submit their thesis prior to starting medical school and thus graduate students should not apply until there is a firm end point established to their graduate work”.
- Queens University medical school website states: “Applicants must have completed their graduate degree by August 1 prior to commencement of medical school”.

The second possible solution is to allow students to complete their medical and graduate degrees as a joint program. At present, there are only two students in the joint MD-Ph.D. program, and both faculty and students suggested the current system is not facilitating completion of the graduate degree. Description of this program suggests that no active steps are being taken to identify problems and solutions related to this program.

Recommendation 8: Graduate students should be required to successfully complete their graduate degrees or successfully transition to a joint MD/M.Sc. or MD/Ph.D. program before being granted admission to the MD program. The Faculty of Medicine should implement policies to facilitate this.

Recommendation 9: The MD-Ph.D. program should be assessed in terms of strengths and limitations, and either action taken to develop it to its potential or dropped as an option.

Funding

There are two quite different traditions of graduate student research and training operative within the Faculty of Medicine. The “bench science” tradition involves the student joining with the supervisor to become part of her/his research group and to pursue a research project of direct and immediate relevance to the supervisor’s overall research program. Supervision is close and continuous and both the student and supervisor jointly author publications. The “non-bench

science” tradition usually involves the graduate student identifying a research project (often with little input from the supervisor) that may bear little relationship to the supervisor’s research program. Contact between student and supervisor is less frequent than in the bench science model and the student may publish the work as sole author. This model of graduate student research is employed by a number of faculty members, particularly in the Division of Community Health and Humanities.

At present, full-time graduate students are guaranteed a minimum stipend of \$12,000 *per annum*. This may come from a combination of funds from the School of Graduate Studies (SGS), Faculty of Medicine and the supervisor’s research grant. The guarantee of \$12,000 *per annum* is based on partial funding from the Office of Research and Graduate Studies and partial support from the supervisor. A total of three students, per supervisor, can receive financial support from the Office of Research and Graduate Studies. Although many students are paid more than this minimum there are certainly full-time students who only receive \$12,000.

The figure of \$12,000 has not been increased for many years and is much too low. We appreciate that raising the minimum stipend may present a difficulty for supervisors who follow the non-bench science model. These faculty members often receive rather small grants that may not be at all related to a particular student’s research project. Nevertheless, the living and other expenses are just as costly for a student following the humanities model as they are for one following the bench science model. To a degree, we anticipate that part of the increased stipends will be met from an imminent increase in the value of the SGS graduate fellowships. Additional monies may be forthcoming from the SGS. We understand that SGS fellowships awarded to graduate students in the Faculty of Arts are higher than those awarded to students in other disciplines because of the difficulties in funding students who follow the non-bench science model.

Recommendation 10: The Dean of Graduate Studies should wish to look at the situation in the Division of Community Health and Humanities to determine whether an accommodation for funding similar to that used in the Faculty of Arts is justified.

Recommendation 11: Minimum stipends for full-time graduate students should be raised to \$15,000 per annum.

CIHR’s “Grants and Awards Guide” specifies, unambiguously, “a minimum stipend of \$17,850 *per annum* for a graduate student paid in whole or in part from a CIHR grant”. Some supervisors honour this obligation to the letter but we were informed that some students were not being paid the amount to which they are entitled (and which the grantee is obligated to pay). This is not acceptable. It is an offence both against the granting agency and against the student. Furthermore, it undermines the Graduate Student Research Integrity Program (GRIP), which is jointly completed by student and supervisor and deals with the ethical conduct of research, by indicating that mandatory obligations may be ignored.

Recommendation 12: When graduate student stipends are paid from granting agencies that specify a minimum stipend, that stipend must be honoured.

We heard a great deal about the length of time during which graduate students are eligible for support from the university (SGS plus Faculty of Medicine). At present, they are supported, from the SGS baseline, for a period of two years for a master's student and four years for a doctoral student. Extensions are available, from the Office of Research and Graduate Studies, for one semester for M.Sc. students and two semesters for Ph.D. students. We see little reason for extending the master's stipend beyond two years, especially since individual hardship cases are dealt with by the Faculty's Office of Research and Graduate Studies, on an *ad hoc* basis, which may allow for some extensions, e.g. for an additional term. As previously discussed, times to completion, and reasons for prolonged time to completion, should be assessed and addressed at the level of the program such that master's programs are designed so that they may be completed and written up within two years.

There is certainly more of a case to be made for extending the funding period for doctoral students as the median time for completion of a Ph.D. degree in Canada is about five years and Ph.D. students in their fifth year are particularly productive. Extension of funding for one student will have implications for the total number of students funded unless the overall monies available are increased. It is entirely appropriate for a supervisor to pay the full stipend from her/his research grant. SGS may also identify other options as they explore this issue throughout the university.

Recommendation 13: The Faculty of Medicine and the School of Graduate Studies should explore advantages and disadvantages of different funding solutions related to extension of funding and source of that extended funding.

There was some discussion, especially with respect to the Community Health and Humanities program, as to whether students are enrolled in the graduate program part-time but are actually completing their degree on a full-time schedule. By permitting students to enroll in this fashion, faculty members are dodging the responsibility to pay graduate students the required graduate stipend.

Recommendation 14: All graduate students completing their program on a full time basis must enroll as such, and be supported accordingly.

Travel funding was also discussed with faculty and students. Advantages were identified for students attending and presenting at conferences in terms of their networking and increasing visibility of Memorial University and the Faculty of Medicine. Funding is available but limited; data were not available as to whether students were able to present at least one conference per program, or the source(s) of the funds for those able to do so. Students had a number of complaints about the difficulties obtaining an advance of funds prior to travel and slowness of receiving reimbursement.

Recommendation 15: Funds for student travel to conferences for the purpose of presenting their research should be increased.

Recommendation 16: Procedures for obtaining travel advances and reimbursement should be reviewed and revised as necessary to facilitate students having the necessary funds as quickly as possible.

Indicators of Quality

A recurring theme in our discussions with administrators and students alike is the perception of excellence of programs, of faculty, of students and the graduates of programs in the Health Sciences. Students are very loyal to the Institution (despite their specific, often passionate specific complaints) and program directors are proud of the excellent applicants they receive, many of whom cannot, for reason of size/space limitations, be accepted. They also mention prominent examples of graduates who have been well received as post-docs in elite institutions internationally. The resources being invested in graduate programs by the institution and the deep commitment to the Graduate Studies aspect of her diverse portfolio by the Associate Dean for Research and Graduate Studies would also justify a strong return on investment.

External /National Awards: While there is no reason to doubt the basis for pride in the academic vigor of their graduate programs, the supporting evidence is largely anecdotal. An objective comparative measure, such as the number of students obtaining nationally vetted studentships, shows a remarkably low number; a table listing externally funded graduate students listed two to three students per year enrolled between 2002 and 2005 who received nationally vetted funding. By way of comparison, the Faculty of Medicine at the University of Manitoba, in another so-called “have not” province, currently received 35 nationally vetted studentships for a graduate student population of 330. At the University of Manitoba, there is no “baseline” funding for studentships.

In exploring this aspect with students and faculty members, it appeared that application for national funding was (with some exceptions) not emphasized. Students did not see major impact in their bottom line relating to their source of funding and faculty members saw their main responsibility as meeting the \$12,000 minimum with a \$6,000 baseline contribution from central sources. There is, thus, little evidence of a culture of demonstrated excellence *vis a vis* external competitive funding. The resulting academic impact includes, beyond the direct economic benefit, the lack of a critical competitive honour/award in the student’s CV for career development, an important external recognition of the excellence of programs and a potentially important basis for internal recognition of role-model excellence.

An additional, complementary element that might be considered is the application for a CIHR STIHR grant. The size of the Faculty of Medicine at Memorial University is certainly adequate to support such an initiative and the range of complementary expertise and cohesive organizational structure would predict the award of at least one such grant within the Faculty. This could have real benefit to programs directly and enhance collegial interactions.

Local and Travel Awards: At the local level, we were advised of several awards of excellence, including Dean of Medicine Fellowships and Faculty-wide awards. The number of these awards, however, appears relatively small in comparison with the array of excellence to be promoted. The Faculty of Medicine has an appropriately broad program for promoting student travel to

attend scientific meetings and for them to gain that necessary exposure. Additional financial elements could be included as a component of awards of research excellence to enhance the experience of the most deserving students.

Research Day: We were also advised that the Faculty of Medicine hosts an annual research/poster day, featuring presentations by graduate students of their research and a distinguished speaker. The student presenters, however, do not present within the context of a judged competition, despite calls for such an added educational experience/recognition feature. The reason given for the lack of formal (judged) presentation was lack of resources in the Associate Dean’s (Research and Graduate Studies) office.

Teaching experience: We were informed that Teaching Assistantships are limited, and (as is common in medical schools) teaching opportunities within the Faculty of Medicine are few. Thus, beyond learning to present a seminar well, the incentive to learn how to “teach” is minimal. Teaching is, however, a central element in the range of capabilities that serve career development (indeed, it is often the “edge” for landing the first academic job). The institutional capacity to deliver these programs is adequate in this respect, but needs to be promoted to graduate students as a complement to the knowledge and research expertise they are acquiring within the core of their programs.

In sum, there exists comparatively strong institutional (Dean of Graduate Studies and Dean of Medicine) support for graduate studies. The provision of \$6,000 for a first student, per supervisor, from University-derived resources represents a tremendous recognition of the importance of graduate students within the research mandate of the Faculty of Medicine. Supervisors do not seem to appreciate the generosity of this baseline funding to their research programs; in other institutions, a greater portion of funding comes from supervisor’s grant funding and external sources. Rather than encouraging increased internal support from Memorial University sources, there should be more incentives toward recruiting excellent, national-funding competitive students and emphasis on applying for such studentships.

The combination of financial support for baseline student funding, pride in excellence of programs and inadequacy of space for graduate students, would appear to provide an environmental incentive to focusing resources strategically towards excellence and the view of these reviewers is that the graduate programs in the Faculty of Medicine would be well served by further refinement of efforts with this objective.

Recommendation 17: A strategic plan for the recruitment, promotion, documentation, recognition, exposure and reward of excellence should be developed and implemented, including

- a) Increased incentives to obtaining nationally vetted studentships***
- b) Application for a CIHR STIHR grant***
- c) Strategic re-direction of some existing funds for recognition of excellence***
- d) Implementing travel supplements with awards of research excellence***
- e) Systematic documentation of relevant measures of student excellence and tracking of graduates’ careers***

- f) Judging/rewarding excellence at the annual Research Day (this could be a responsibility of the Program Chairs, collectively)*
- g) That the value of awards be enhanced through their presentation at a high-profile/well-attended event within the Faculty of Medicine*
- h) That the teaching competence of graduate students be encouraged and recognized*

Recommendation 18: The Office of the Associate Dean (Research and Graduate Studies) should be resourced adequately to support the additional work envisioned in these recommendations.

Program Evaluation

A number of issues arose with respect to supervision of graduate students; it was noted that there is considerable variation in supervision throughout the Faculty of Medicine. Unanswered questions included where both faculty and students learn expectations and strategies for being a good supervisor, defining expectations for supervision (for both faculty member and student), qualifications for being a supervisor, and how quality of supervision is assessed. Other universities, for example, require that a faculty member be a member of a Faculty of Graduate Studies or its equivalent, and thus be assessed as meeting certain criteria, before being able to be a supervisor. Facilitating new faculty members was identified as another area for future exploration, although the main emphasis related to obtaining graduate students.

Recommendation 19: Supervision expectations and professional development should be assessed, and identified issues addressed, within the Faculty of Medicine (overall and by program) and SGS.

Students noted that there is considerable variability in the quality of courses. Courses have rarely been evaluated, given the small number of students in a given class. It was unclear if the programs of courses are meeting students' needs or are given in a manner that promotes excellence in learning or acquisition of the required knowledge and skills. Few Ph.D. programs, for example, require higher-level courses, and graduate and medical students take some courses jointly, with the emphasis being geared towards the needs of the latter. Suggestions were made regarding specific courses that might be offered if faculty and/or resources were available for doing so; these included a statistics course for the basic medical sciences students and a lab techniques course. In addition, suggestions were made to explore sharing visiting speaker programs, so students could expand beyond their specialty.

Recommendation 20: Courses should be evaluated both on an individual basis and in terms of the overall program of learning. Different strategies may need to be explored to ensure useful evaluation data is obtained.

Communication and Administrative Issues

Regarding the usefulness of the Faculty of Medicine website in accessing information relevant to student progress, programs and other forms of support, students mentioned that the website was not updated regularly and current information was difficult to obtain. The importance of a current, well designed website to promotion of opportunities, recruitment, efficiency of access to information and pride in programs can hardly be overstated.

Recommendation 21: The website should be updated and become a strategic tool in the recruitment and retention of excellence.

Two administration issues were identified, other than travel funding procedures and the website previously discussed. One issue is that current procedures related to admissions result in frequent “bottlenecks” and delays in getting information and offers of acceptance to students. Admissions do not seem to be processed in batches in many of the programs, and the eight program coordinators are all required to sign off on all admissions even though decision-making for entry is primarily concentrated at the level of the program. Many questioned whether the latter was necessary.

Recommendation 22: The Faculty of Medicine should reassess its policies and procedures related to signing off on admissions, and other possible reasons for delays, and identify strategies to address them.

The second administrative issue related to difficulties associated with having separate members for thesis vs. examining vs. comprehensive exam committees. While the rationale is understood for separating advisors from examiners, there is only a small pool of experts to draw from in developing such committees. Other universities rely more on the external examiner(s), rather than all committee members, being different to ensure some objectivity. The current system of attempting to create an artificial distance between supervisor and examining committee does not meaningfully address the conflict-of-interest issue but does introduce real and unnecessary barriers to optimal supervision and examination of graduate students.

Recommendation 23: The Faculty of Medicine should explore the advantages and disadvantages of different ways of structuring student-related committees, and revise its policies and procedures accordingly.

Conclusion

Graduate students are the cornerstones of much of the research carried out in the Faculty of Medicine. Graduate students are widely recognized as the primary agents by which research programs are completed. They are also very good value for money. They are paid much less than either postdoctoral fellows or research assistants, often work at night and on weekends, and have a considerable personal investment in the success of the research. Although they are on a fairly steep learning curve in their first year, graduate students are widely seen as the most cost-

effective means of carrying out research. The Review Panel's discussions with faculty members and students support the conclusion that graduate students are valued in the Faculty of Medicine.

Summary of Recommendations

Overall, the programs are functioning well. Space and funding levels are concerns for everyone, whereas other issues identified were often program-specific and will require program-level assessment of contributing factors and solutions. A total of 23 specific recommendations have been made, directed to strengthening both programs and work/study environments in the Faculty of Medicine.

There recommendations are:

- 1) *The current Space Committee should reassess and reallocate existing space. It should be noted that this would address the space problem only to a limited extent and only on a short-term basis.*
- 2) *The University should find new space. The real solution to the space problem lies with creating new space, whether additional wings/floors or a new building.*
- 3) *To more accurately portray time to completion rates for the graduate program in medicine, statistics should be reported on a program-by-program basis for the time being.*
- 4) *Clinical Epidemiology faculty should review the possibility of acceptance of a publication to a peer-reviewed journal in lieu of a thesis, and promote this option where applicable to students.*
- 5) *Each program should review its time to completion, requirements for degree completion, and potential sources of problems if time to completion is in fact a problem. Actions to address any problems identified would then be implemented on a program-by-program basis, but would have an overall impact on reducing, to the norm, the average time to completion for graduate studies in the Faculty of Medicine.*
- 6) *Guidelines should be developed, or at least expectations clarified, by faculty members to describe the amount and type of work that represents a reasonable standard for the completion of both the M.Sc. and PhD. degrees.*
- 7) *Guidelines should be developed, or at least expectations clarified, by faculty members to formalize the transition from M.Sc. to PhD in terms of scope of project and timing of decision.*
- 8) *Graduate students should be required to successfully complete their graduate degrees or successfully transition to a joint MD/M.Sc. or MD/PhD program before being granted*

admission to the MD program. The Faculty of Medicine should implement policies to facilitate this.

- 9) *The MD-PhD program should be assessed in terms of strengths and limitations, and either action taken to develop it to its potential or dropped as an option.*
- 10) *The Dean of Graduate Studies should wish to look at the situation in the Division of Community Health and Humanities to determine whether an accommodation for funding similar to that used in the Faculty of Arts is justified.*
- 11) *Minimum stipends for full-time graduate students should be raised to \$15,000 per annum.*
- 12) *When graduate student stipends are paid from granting agencies that specify a minimum stipend, that stipend must be honoured.*
- 13) *The Faculty of Medicine and the School of Graduate Studies should explore advantages and disadvantages of different funding solutions related to extension of funding and source of that extended funding.*
- 14) *All graduate students completing their program on a full time basis must enroll as such, and be supported accordingly.*
- 15) *Funds for student travel to conferences for the purpose of presenting their research should be increased.*
- 16) *Procedures for obtaining travel advances and reimbursement should be reviewed and revised as necessary to facilitate students having the necessary funds as quickly as possible.*
- 17) *A strategic plan for the recruitment, promotion, documentation, recognition, exposure and reward of excellence should be developed and implemented, including*
 - a. *Increased incentives to obtaining nationally vetted studentships*
 - b. *Application for a CIHR STIHR grant*
 - c. *Strategic re-direction of some existing funds for recognition of excellence*
 - d. *Implementing travel supplements with awards of research excellence*
 - e. *Systematic documentation of relevant measures of student excellence and tracking of graduates' careers*
 - f. *Judging/rewarding excellence at the annual Research Day (this could be a responsibility of the Program Chairs, collectively)*
 - g. *That the value of awards be enhanced through their presentation at a high-profile/well-attended event within the Faculty of Medicine*
 - h. *That the teaching competence of graduate students be encouraged and recognized*
- 18) *The Office of the Associate Dean (Research and Graduate Studies) should be resourced adequately to support the additional work envisioned in these recommendations.*

- 19) *Supervision expectations and professional development should be assessed, and identified issues addressed, within the Faculty of Medicine (overall and by program) and SGS.*
- 20) *Courses should be evaluated both on an individual basis and in terms of the overall program of learning. Different strategies may need to be explored to ensure useful evaluation data is obtained.*
- 21) *The website should be updated and become a strategic tool in the recruitment and retention of excellence.*
- 22) *The Faculty of Medicine should reassess its policies and procedures related to signing off on admissions, and other possible reasons for delays, and identify strategies to address them.*
- 23) *The Faculty of Medicine should explore the advantages and disadvantages of different ways of structuring student-related committees, and revise its policies and procedures accordingly.*