

Department of Physics and Physical Oceanography to the
Academic Program Review

Action Plan

November 12, 2004

Introduction

Included below are the recommendations of the External Review Committee, together with a summary of the Department's response and the proposed action associated with each of the recommendations.

Recommendations of the External Review Committee with Departmental Response and Proposed Action

Recommendation 3(i): *We encourage the Department to develop a format, independent from the existing course evaluations, in which students can provide feedback on the overall structure of the undergraduate program.*

Response to 3(i): *The Department, through the undergraduate studies committee, will consult with the students at the beginning of the Fall semester and put in place a formal and regular consultation process.*

ACTION:

The Department will initiate a process in the Fall semester of 2004 whereby the Head and Undergraduate Studies Committee will meet annually with Physics Majors in each of the Fall and Winter semesters.

Responsibility: Head of Department

Recommendation 3(ii): *We encourage the Department to devote sufficient personnel support, probably in the form of senior undergraduate students, to maintain the Help Centre and the computer-based laboratories at their current level of accessibility.*

Response to 3(ii): *The Department will discuss with the Dean the need to have the students support services adequately resourced. The Department will continue to explore ways in which it can make more innovative and effective use of its resources to maintain the quality of help provided to our first year students.*

ACTION:

1. The computers in the Microcomputer Physics Laboratory (MPL) in C2039 have been upgraded.
2. The Department, in collaboration with the Instructional Development Office, organized a number of workshops for Graduate Teaching Assistants involved in our introductory Physics courses over the summer. Further workshops are planned for the Fall and Winter semesters of academic year 2004/2005.
3. The Department intends to maintain accessibility in the Help Centre and MPL by making more extensive use of undergraduate and graduate students.

Responsibility: Head of Department

Recommendation 3(iii): *We encourage the Department to continue its ongoing evaluation of the content of first-year courses in order to avoid unnecessary duplication of material and to provide the best foundation for subsequent courses.*

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Response to 3(iii): *The Department is currently undertaking a review of its first and second year courses. The proposed changes to these courses will address the issues identified by the Review Panel, in particular the introduction of a computational physics course at the second year level.*

ACTION:

The Department has significantly revised the calculus-based introductory physics courses with the replacement of Physics 1054 by Physics 1051. The revised course structure, combined with changes at the second year level, removes the duplication of material for students, in different streams, planning to major in physics.

Done

Recommendation 3(iv): *We encourage the Department to continue developing plans for a computational physics stream at the undergraduate level. During the planning exercise a solution to the student request for an introductory course in computational physics should become apparent, whatever the eventual decision on the computational physics stream.*

Response to 3(iv): *Resources permitting the Department intends to introduce a computational physics stream into its undergraduate programs by September 2005.*

ACTION:

The Department has introduced a new course Physics 2820, Computational Mechanics, that will be required for physics majors. This course will be taught for the first time in the Winter semester 2005. The Department intends to proceed with the introduction of a program in Computational Physics once the position for a Computational Physicist, replacing Dr. Whitmore, has been filled.

Responsibility: Head of Department

Recommendation 3(v): *As the Department considers its options for expanding its undergraduate and graduate course options, it should re-evaluate the number of courses required for the Honours BSc degree. Careful pruning of required courses may release faculty teaching resources for other uses without unduly degrading the quality of the Honours degree.*

Response to 3(v): *Once the proposed changes to our first and second year courses have been implemented and the impact of the revised high school curriculum has been assessed, then the Department will undertake a review of its majors and honours programs.*

ACTION:

No action at this time.

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Recommendation 4(i): *If the University's plan to increase the numbers of graduate students is to succeed, there is a clear obligation to inject significant new money into graduate support.*

Response to 4(i): *The action plan must address the need to increase substantially the level of support for graduate students provided by the University. This could be in the form of increased rates for graduate TA's or through an increase in the Department's SGS baseline allocation.*

ACTION:

1. The School of Graduate Studies (SGS) has significantly revised the way that Departments' SGS fellowship baselines are calculated. While this provides a mechanism whereby a Department's baseline funding may increase with graduate enrolment, this will not provide any significant increase in our Department's baseline in the foreseeable future.
2. A Committee established by the Office of the Dean of Science is reviewing the way in which funds for Graduate Teaching Assistantships (GTA's) are awarded to Departments as well as the hourly base rate that GTA's are paid. This committee has recommended that, within the Faculty of Science, GTA's base rates be increased from \$13.39 to \$15.39.
3. A Committee has been established by the Dean of the School of Graduate Studies to examine differential hourly rates for Graduate Teaching Assistants based on the responsibility and complexity of the tasks assigned to them. We are awaiting a response from the Dean of Graduate Studies regarding this initiative.

While these measures will provide additional financial support for graduate students, it will not result in the increases recommended by the External Review Committee. However it is hoped that these measures will provide a more equitable and rational distribution of resources based on projected enrolments in graduate programs, that will allow the Department to make more effective use of the limited amount of graduate student funding available. In addition it is hoped that the measures will also provide the foundations that will allow the administration to inject significant new money into graduate student support.

Responsibility: Dean of Science and Dean of Graduate Studies

Recommendation 4(ii): *The committee urges the Department to consider ways of delivering the required graduate courses in a timely and effective manner, which does not involve teaching common courses to both undergraduate and graduate students.*

Response to 4(ii): *As resources allow the Department will limit the practice of teaching common courses to both undergraduate and graduate students.*

ACTION:

This practice will be phased out as the number of regular tenured and tenure-track faculty in the Department increases, except in those cases where teaching a combined graduate/undergraduate course will be of obvious benefit to both the graduate and undergraduate students.

Responsibility: Head of Department

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Recommendation 4(iii): *The Department should investigate ways to improve the poor quality of office furnishings for graduate students. Good quality used furnishings are occasionally available as surplus from other areas of the University, and are routinely available at quite reasonable prices from the local private sector.*

Response to 4(iii): *The Department will take an inventory of the office furniture provided to our graduate students and as resources allow upgrade where necessary.*

ACTION:

All graduate students have been issued with new office chairs, while others items of office furniture in graduate student offices have been replaced upon request.

Done

Recommendation 4(iv): *The Department should arrange regular meetings, perhaps once or twice per academic year, with graduate students to discuss general issues related to all aspects of the graduate program. These meetings should involve at least those faculty members on the Graduate Studies Committee. The committee believes that such meetings would pay big dividends for relatively little effort.*

Response to 4(iv): *The Department, through the graduate studies committee, will consult with the graduate students at the beginning of the Fall semester and put in place a formal and regular consultation process.*

ACTION:

The Department will initiate a process in the Fall semester of 2004 whereby the Head and Graduate Studies Committee will meet annually with the Physics Graduate Students.

Responsibility: Head of Department

Recommendation 5(i): *The committee believes that physical oceanography is a logical research focus for the Department, and that a core complement of 5 faculty members in this area is appropriate. This view concurs with that of the current faculty members.*

Response 5 (i): *No further action is required on the part of the Department.*

ACTION:

None required.

Recommendation 5(ii): *The committee supports the Department's planned expansion into the area of photonics, but believes that appointment of a Tier I CRC plus a junior appointment,*

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rather than a Tier II CRC, is necessary to produce the desired research impact. This would bring the faculty complement to 20, which the committee feels is a reasonable number of faculty members for the Department.

Response to 5(ii): *The Department will cooperate with Faculty of Engineering to fill the Tier II CRCs in Photonics and ASIC design and pursue the possibility of establishing a critical mass in the area of photonics with the Faculty of Engineering.*

ACTION:

Dr. Q. Chen was awarded a Tier II CRC in Photonics. He will begin his appointment in December 2004. The Department is also participating in the search for the Tier II CRC in ASIC Design in the Faculty of Engineering.

Done

Recommendation 5(iii): *The committee strongly recommends that the University revise internal policies that limit career advancement for technical personnel and that impose unnecessary restriction on how faculty members may use their external research funds for employing students and technical assistants.*

Recommendation 6(i): *The University should place the highest priority on finding ways to reward rather than frustrate valued employees. The currently used Job Classification System appears in many ways to be a bureaucratic disaster that needs a complete overhaul. This will only happen if the highest levels of the University administration recognize the problem and commit themselves to fixing it*

Response to 5(iii) and 6(i): *The action plan for the Department should include a process that will address the problems and inequities regarding support personnel that are created by HR policies and the current job classification scheme.*

ACTION:

A number of information meetings between the Department of Human Resources and Department Heads in the Faculty of Science have been organized. These meetings have provided Heads a better understanding of the current job classification scheme. However, while the Department will continue to address inequities within the current framework, we nevertheless agree with the findings of the External Review Committee's assessment regarding the current job classification scheme. The Department, through the Dean of Science, will therefore continue to press for changes to make it more responsive to the needs of Departments in the Faculty of Science.

Responsibility: Head of Department and the Dean of Science.

Recommendation 5(iv): *The Department should, in consultation with the Dean of Science, find sufficient money to bring invited speakers on a regular basis. The committee feels that a budget*

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of \$10K to \$15K per annum would be adequate to ensure an active seminar series. The cost of bringing in speakers for this seminar series could be reduced by coordinating with other physics departments in Atlantic Canada.

Response to 5(iv): *The Department will request that \$15,000 be included in the Departmental budget on an ongoing basis to fund the travel expenses for visiting speakers.*

ACTION:

The Departmental Seminar Committee, has been provided with a budget of \$5,000 for academic year 2004/2005. These funds will be used to cost-share the expenses associated with bringing in visiting scientists with faculty and research groups. It is hoped to increase this amount in the years ahead as the Department's budgetary situation improves.

Responsibility: Head of Department

Recommendation 7(i): *The committee sees value in interdisciplinary programs, particularly at the graduate level. The Faculty of Science should carefully review the benefits of existing interdisciplinary programs, and take steps to remove any existing disincentives to faculty members' participation in such programs. This may involve a basic re-evaluation of the place of interdisciplinary programs vis-à-vis line departments within the Faculty.*

Response to 7(i): *The Department strongly supports establishing an interdisciplinary program in marine science and encourages the Faculty of Science to ensure that there exist incentives for departments to allocate adequate faculty resources to support these interdisciplinary programs.*

ACTION:

The Office of the Dean of Science has introduced a number of changes in the budget allocation process that will provide a more appropriate level of support for the interdisciplinary programs.

Recommendation 9(i): *The Department should work with the Department of Facilities Management to prioritize those renovations that would increase the functionality of research space.*

Response to 9(i): *The Department will work with the Department of Facilities Management to prepare a prioritized list of renovations together with cost estimates for these renovations. Once completed the Department will discuss with the Dean how the renovations may be implemented.*

ACTION:

In fiscal year 2004/2005 the Department has renovated several underutilized rooms within the Chemistry/Physics building as well as existing laboratory space to provide laboratory space for new faculty, office space for graduate students and equipment storage. Several other renovations are planned over the next three years as finances permit and the Department's needs evolve.

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The Department notes however that the cost of many of the functional, as opposed to cosmetic renovations, required to make more effective use of existing space have been downloaded to Departments as an expense from Facilities Management. This practice is unfair and must either cease or be adequately funded through Departmental budgets, if we are to properly and effectively manage our space.

Responsibility: Head of Department, Vice-President (Academic) and Vice-President (Administration and Finance)

Recommendation 9(ii): *The current and projected teaching workload, the level of research activity, and comparison with physics departments at comparable Canadian universities all suggest that a faculty complement of 20 is appropriate for the Department.*

Response to 9(ii): *The Department will ask the University to take immediate action to increase the Faculty complement to a minimum of 17 tenured or tenure track faculty by the September 2004. In addition the action plan for the Department in response to the Review Panel's report should include a roadmap that will allow the department to restore its faculty to complement to 20 tenured or tenure-track faculty within the next 3 years.*

ACTION:

Since September 2001 the Department hired has succeeded in filling six tenured track positions (Curnoe, Andrews, Poduska, Bourgault, Beaulieu and Demirov) with another faculty member joining the Department in March of 2005 (Yethiraj). In addition, the Department is currently trying to fill a position in computational physics to replace Dr. Whitmore and intends to submit a request to the Dean for permission to initiate a search to fill the vacancy created by Dr. de Bruyn's departure. If successful and assuming there are no further resignations this will bring to 17 the total number of regular tenured or tenured track faculty in the Department.

In addition to these regular faculty appointments, Dr. Qiying Chen was awarded a Tier II Canada Research Chair in Photonics and will join the Department in December 2004. The Department has also initiated a search to for a Tier I CRC in Climate Change Modelling.

These hires and the current and proposed searches provide a roadmap that will bring the Department's total faculty complement to 19, close to the 20 recommended by the External Review Panel. The Department will continue to seek to identify opportunities that will provide for additional hires in areas of strategic importance for the Department.

Responsibility: Head of Department

Recommendation 9(iii): *The University administration needs to monitor the effectiveness of their financial reporting systems to ensure that these systems are meeting the needs of the academic units as well as the needs of the administrative units.*

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Recommendation 9(iv): *The University should organize annual meetings with academic departments to exchange ideas on how all administrative functions of the University could be better executed.*

Recommendation 9(v) *The University should consider instituting regular reviews of all administrative units, equivalent to the Academic Program Review for academic units.*

Response to 9(iii), 9(iv) and 9(v): *The action plan for the Department to be drawn up by the Dean and Head of Department in response to the Review Panel's report should address the issues raised by the Review Panel regarding the administrative function of the University.*

ACTION:

The Dean of Science will inform the Vice President (Academic) and Vice President (Finance and Administration) of the comments and recommendations of the External Review Panel regarding the administrative function of the University, and will request a response to the recommendations. The Dean will communicate to the Department the response of the Vice Presidents to the recommendations of the External Review Committee.

Responsibility: Dean of Science

Recommendation 9(vi): *The Dean of Science should consult with other faculties at MUN and with colleagues elsewhere to see whether advantages might be had by centralization of the salary component of the budget.*

Response to 9(vi): *The action plan for the Department should include measures that would provide the Department with an earlier notification of at least the non-salary component of its budget.*

ACTION:

The Department is aware that the senior administration has taken measures to address this situation and no further action is required at this time.

Recommendation 9(vii): *The Faculty of Science should have a clearly stated procedure for submitting proposals for CRC and AIF funding. Everyone in the Faculty of Science should know where to find these procedures.*

Recommendation 9(viii): *The University should be more open in its internal evaluation of proposals for CRC and AIF funding, and should provide more detailed critiques of the proposals to the individuals who wrote them. Successful applications could be made available as templates for additional applications.*

Response to 9(vii) and 9(viii): *The Department agrees with the recommendation that the University should develop a clearly stated process for submitting proposals for CRC and AIF*

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funding, while at the same time providing more detailed feedback regarding the decisions made regarding them.

ACTION:

Prior to the last call of proposals for Canada Research Chairs, new procedures were adopted to provide for more coordinated and broadly based submissions from units within the Faculty of Science. Based on the proposals submitted under these new procedures the Department was given permission to fill a Tier I CRC in Climate Change Modelling. Given that the Memorial's allocation of Chairs under the CRC program is now complete, no further action is required.