

Action Plan
Department of Chemistry

The chemistry APR panel that visited the department made a total of 39 recommendations. The faculty, staff, and the chemistry graduate and undergraduate student societies reviewed this report. In developing their response to this document they prioritized the top 11 recommendations that specifically address 25 of the 39 recommendations. These form the main component of the action plan although responses to the remaining 14 recommendations are also included.

It is important to note that the department, Faculty of Science, and the Department of Health and Safety are already vigorously pursuing many of the recommendations associated with health and safety.

Priority 1: Labeling of chemicals and disposal of legacy chemicals (APR recommendations 37, 38 & 39)

As noted in the response by the department, this has been an ongoing issue that they have been pursuing for the past 10 years as financial resources become available. However, as acknowledged by the department, this addresses symptomatic issues while not focusing on the cause. For that reason they also propose developing and implementing departmental policy to prevent the future accumulation of legacy chemicals, and the establishment of a chemical inventory system at the university as a critical tool in implementing this recommendation.

During this APR, the Faculty of Science reviewed its procurement procedures and stores facilities. The main recommendation of that review is to centralize the Faculty of Science stores operations, with a new manager recruited who will be responsible for its operations (see Recommendation 2 for more information). At the same time, the Department of Health and Safety have taken responsibility for obtaining the software necessary to establish and maintain the inventory of chemicals throughout the university.

With these new resources in place, I expect the department to be able to completely address the legacy chemicals currently in inventory, and then move to a new culture that addresses issues associated with chemical as including both the acquisition and appropriate disposal of chemicals.

I understand that the chemical software inventory should be available this year. The central stores manager has been recruited and I hope that we will be able to begin construction of a centralized stores facility this year. If these two goals are complete, I then expect that we should have the full inventory of chemicals completed by 2012, allowing us to control the accumulation of additional chemical. Disposal of legacy chemicals will be limited by budget (either to the Faculty of Science or the Department of Health & Safety) but I anticipate that we will have legacy chemicals reduced to a manageable proportion of our inventory by 2014.

Priority 2: Addressing the physical sciences stores safety issue (APR Recommendation 28).

As noted above, the Faculty of Science conducted a review of procurement procedures and stores facilities and is in the process of acting upon those recommendations. Key among these are the construction of a new centralized stores facility that will allow all functions within the Faculty of Science to amalgamated into a single operation, and construct a facility that meets contemporary safety standards. Since that report was released last year, the Faculty of Science has sought a location that will accommodate those requirements. While negotiations and funding issues have yet to be concluded, the plan is to acquire the space used for two public computing laboratories on the second floor of the Chemistry Physics building. These will be amalgamated with the existing location for the Physical Science stores in the basement of the Chemistry Physics building. During the renovation of this space we expect to construct facilities that will address the key safety concerns associated with appropriate ventilation and temperature regulation.

Pending successful negotiation of the space agreement, the Faculty of Science will next be seeking funds for the construction of the centralized stores facility. If those funds are made available, it is possible to complete construction this year.

Priority 3: Appointment and training of a Safety Officer and implementation of other safety recommendations (the APR Report did not recommend the Safety Officer. Other safety recommendations excluding those discussed above are 34, 35, & 36).

Safety officers are the responsibility of the Department of Health and Safety and I expect departments to liaise with that office through their participation on building Health and Safety committees. Through their participation on these committees, they will directly address the other safety recommendations.

Priority 4: A new building or complete renovation of the current building including both research and teaching laboratories, security systems, and separation of student office and lab spaces. (Overall recommendation of APR report, and recommendations 1, 3, 4, 22, 23, 25, 28, 31).

The state of the physical infrastructure within the Faculty of Science, and in particular the Department of Chemistry have bedeviled previous administrations for decades. However, over the past 3 months the Faculty of Science has been working with a consultant on a plan for the construction of a new 300,000 ft² Science building and a complete renovation of the Chemistry Physics building. We currently estimate the cost of the project at approximately \$400M. Work on this project is ongoing but we expect to seek a request for proposals in the next few weeks, allowing us to submit a detailed proposal to government. Significant details are yet to be resolved but expect the functional planning for the project to be complete by August 31, 2011.

Priority 5: New ASM Hires (APR recommendation 20 & 21).

The Department has concluded its search for a computational chemist and that individual should be on staff for the next academic year. They have also begun a search for an analytical chemist. Bringing in additional faculty will hinge on space and budget availability and student enrolment. Note that in the absence of mandatory retirement, faculty are obligated to provide best efforts to provide six months notice of their intention to retire. Given the length of time to have the permission from the VPA to recruit a new faculty member, strike a search committee, advertise the position, review applicants, interview short-listed candidates, and successfully negotiate with the preferred candidate a longer notice of retirement (e.g., 12 months) is preferred to avoid periods of time when positions are left vacant.

Priority 6: The Department is encouraged to discuss with teaching assistants their role in the delivery of undergraduate courses (APR recommendation 12)

As recommended by the Chemistry Graduate Society, and noted by the Department, there is a need to make better use of the graduate students in their assigned teaching responsibilities. The Deputy Head (Graduate Studies & Research) will establish guidelines and procedures in consultation with the Chemistry Graduate Studies committee. These recommendations will then be presented for approval at a department meeting.

Priority 7: Conduct a thorough review of first-year courses and appoint a first year coordinator from amongst those faculty members teaching these courses. (APR recommendation 5).

The Department's response to this recommendation also provides the appropriate actions. These include appointing a 1st year coordinator position that is independent of the Deputy Head (Undergraduate Studies) with a one-course remission and a 3-year term. The responsibilities of this position will be to:

- a) Review first year courses
- b) Laboratory program development
- c) Review and approval, with an exam committee, all 1st year exams
- d) Review and approval, with the instructors, all 1st year marks
- e) Assignment, training, and evaluation of IA's and TA's for 1st year labs
- f) Redesign, renovation, and maintenance of 1st year labs
- g) Selection of text books in consultation with instructors
- h) Online and written assignments with tutors
- i) Lecture capture and clickers.

Priority 8: The Department should continue to develop its research plan as a living document and maintain its alignment with the University's strategic plan (APR recommendation 8).

This is a priority item at both the Department and the Faculty level. As noted in the departmental response, they will develop a research plan and revise it regularly in 3 year intervals. The Faculty of Science is also developing its research plan that is based upon departmental plans.

Priority 9: The Department needs to reevaluate the effectiveness of its help centers and expand the resources of these rooms (APR recommendation 24).

The departmental response noted that it will determine the level of use of these facilities in order to determine staffing needs and that additional resources will be provided pending this analysis. There are of course limitations to the actions that can be taken, including the availability of space and financial resources that can be used to provide additional staff.

Priority 10: The Department should attempt to maintain the computers in the computer room and push to obtain wireless internet throughout the entire Chemistry/Physics building in a timely manner. The Department should provide computers in the laboratories to improve communications, as well as help staff to better manage student enrollment and registration. (APR recommendations 29 & 30).

The department will conduct a review of the computer room use, and current status of the hardware, network, and software. Once the needs and requirements are determined, funding will be sought, presumably through the Classroom Teaching Infrastructure Development Fund. The latter recommendation was considered best implemented once labs are redesigned and that stockroom computers can be used in the interim.

Priority 11: Improve communications; improve communication with other departments to facilitate completion of the joint degree in four years (APR recommendation 6), review communication procedures to ensure they are operating in the most efficient manner possible (APR recommendation 16), and the University Administration should regularly review the way it disseminates relevant information to individual faculty and staff to help ensure that Departments can plan and make decisions in a fully informed way (APR recommendation 17).

The departmental response identified specific mechanisms to address recommendations 6 and 16 that includes specific changes to facilitate the completion of the Chemistry/Earth Sciences joint degree in four years, as well as regular consultation with other departments to further restrict joint programs to 120 credit hours. A number of mechanisms have also been identified to promote efficiency in communication procedures and include maintaining and using student email lists, improved computer access for staff to provide them with email access, broadcasting urgent messages by voicemail, providing more information on the Chemistry website, regular staff meetings, and an annual general meeting for all faculty, staff and students. From the university administration perspective, the Dean's office regularly distributes important information to departments to be distributed via the mechanisms previously described. Furthermore, we are updating our web systems to distribute information via the website and new video monitors currently installed in the Chemistry Physics building. We are also hoping to expand the web information system to a mobile version to make this information accessible to mobile computing devices via both wireless and cell phone networks.

Pending availability of funds, we would also like to expand the video system so that information is available in more locations.

APR RECOMMENDATIONS NOT IDENTIFIED AS PRIORITY ITEMS

2. Institute an annual budget line item for maintenance and operation of undergraduate teaching facilities.

Departments were requested to develop a 5-year plan for the maintenance, repair, and placement of undergraduate teaching equipment. This needs to form a part of the operating expenses for the Faculty of Science to prevent degradation of our teaching infrastructure.

7. Improve professor participation in the delivery of the laboratory component of courses to ensure connectivity with the lecture component.

As noted in the departmental response, this responsibility already exists. The department notes that requiring faculty to be formally responsible for all labs, particular for courses with multiple laboratory sections would be very time consuming. The department will develop procedures for review and revision of lab components.

9. The Department is encouraged to require a public defense of M.Sc. theses.

The Department agrees with this recommendation, but a change of this nature is the mandate of the School of Graduate Studies. The issue is currently before the Chemistry Graduate Studies Committee.

10. The Department should regularly review the completion statistics of M.Sc. and Ph.D. graduates.

The department will implement this recommendation.

11. The Department should consult with the graduate students to consider possible ways to increase attendance at graduate seminars. One possibility is to implement a mandatory non-credit course obligating students to attend all departmental seminars.

The department notes that this is already required in the program regulations in the calendar. Attendance at seminars will now be recorded and students warned if their attendance is not satisfactory. There will also be a review of the scheduling of seminars to avoid conflicts with graduate student TA responsibilities.

13. The Department should organize an annual orientation day for all new graduate students.

This is now being done by the Deputy Head (Graduate Studies and Research).

14. The Department should work with the School of Graduate Studies to develop career mentorship programs for graduate students to help them with

the preparation of curriculum vitae and application and with the preparation for an interview.

As noted, such services are already available in the Centre for Career Development. Furthermore, one career development officer, Stephanie Butt, is jointly appointed between the Centre and the Faculty of Science, with a specific responsibility for Science students. Better advertising for this service is required.

15. The Department should continue to develop its research plan as a living document and maintain its alignment with the University's strategic plan.

The department has identified that it will develop a research plan and revise it on a 3-year cycle.

18. The Department should increase faculty members' participation on University wide committees.

A lack of faculty participation in university service beyond departments is endemic to the university and an issue beyond the APR of the Chemistry department. I understand that the VPA office is considering this issue specific to participation on senate committees. A resolution of that issue will likely address the APR recommendation.

19. Before any staff members are replaced, a thorough review should be carried out in order to assess the proper number of staff members for a department of this size. This review should compare the number of staff members of various Chemistry Departments with similar student enrollments. This process should also attempt to assess the role of staff members in ensuring a high degree of quality of teaching.

The Chemistry department does have the largest number of support staff of any unit within the Faculty of Science. However, the appropriate comparison is to other Chemistry Departments in Canada. This review, in combination with an assessment of each individual's duties and responsibilities needs to be conducted to insure that any new staff positions are providing the maximum benefit to the department.

26. The University should reassess the method by which CFI matching funds are allocated.

Match funding is provided provincially through the Research Development Corporation and they develop their own criteria for CFI support. Internal funding is managed by the VP (Research) and I will defer to that office on allocation procedures.

27. The Department should provide better mentoring to new faculty members regarding existing and new funding opportunities.

Such a process currently exists on an informal basis but it is appropriate to assign at least one mentor to assist new faculty in establishing their research and teaching careers at Memorial.

32. The Department should provide a separate computer for each staff member.

The ability to implement this recommendation is constrained by the budget. Nevertheless, implementation of appropriate policies for maintaining chemical inventories as well as other regulations involving lab safety may require this equipment to be allocated to laboratories.

33. The University needs to be pro-active in ensuring that the liquid helium/nitrogen facility stays in continuous operation.

The Faculty of Science transferred control of the liquid helium/nitrogen facility to CREAT last year. This permitted the funding model of that unit to purchase new equipment that will provide both the Chemistry Department and the rest of the university with a more stable supply of this critical resource.