



***Third Innovation Council Meeting
Department of Chemistry***

Minutes

Date: Friday, October 26, 2001, Donald Gordon Centre

Time: 8:00 am to 12:00 noon

The meeting began with a breakfast buffet at 7:15 a.m., was followed by business meetings and a "hardhat" luncheon and guided tour at Chernoff Hall. A Student Reception took place the evening prior.

Council Members in Attendance:

Dale Cameron (Micrologix)
Barry Robins (Davos), Chairman
Dinesh Vyas (Bristol Myers)
Darwin Wilson (Dow)
Robert Young (Merck Frosst)
Ron Zelonka (DuPont)

Queen's Members in Attendance:

Stan Brown (Queen's Head, Chemistry)
David Wardlaw (Queen's Acting Head, Chemistry)
Rick Boswell (Queen's Manager, Chemistry)
Doug Puffer (Queen's Faculty Development Officer)
Myrna Horton (Queen's Faculty Projects Assistant/Recorder)

New Council Members in Attendance:

Nick Darby (Dow)
Randy Gossen (Nexen)
Jamie Hallman (Fisher Scientific)
Kingsley Ward (Vimy Ridge Group)

Department Guests:

Alex Becke (Queen's Department of Chemistry)
Hugh Horton (Queen's Department of Chemistry)
Bob Lemieux (Queen's Department of Chemistry)
Ralph Whitney (Queen's Department of Chemistry)

Other Guests:

Jim Kelly (Queen's Director, Career Services)
Lindy Sutcliffe (Coordinator, Undergraduate Internship Program)

Absent Council Members:

Bruce Chernoff (Petrobank)
Ron Commander (Bayer)
Neal Matheson (Johnson & Johnson)
Ken Reucassel (International Group)
Sue Riddell Rose (Paramount)
Dave Thomas (AXYS)
Rastko Vukov (Rhodia)

Resigned: Bill Davidson (MDS)

For Info: Shirley Tilghman (Princeton U.)

General Session

Welcome & Introduction

Introductory remarks were made by David Wardlaw. He commented that the Student Reception of the evening before was well received and approximately 45 students attended. He introduced Jim Kelly, Director, Queen's Career Services who made the following presentation:

Internship Program - Jim Kelly, Director, Queen's Career Services

Jim provided a handout and presented overheads, highlighting the following:

- QUIP began in 1989 at the request of an employer
- by 1990, formal program was established by Queen's for managing solicitations of internships from additional employers to meet the needs of industry
- some 900 companies solicited
- currently 449 students have begun internships as of September 2001 - 15 have been Engineering Chemistry students and 2 have been Chemistry
- Benefits to students: increases ability to compete for students who want internship/co-op work terms; increases exposure to industry, expanding one's professional network; provides students with another means to fund their education; provides guidance for future course selections; allows exploration of a variety of career paths; provides a competitive edge on graduation - 50% have an offer from an employer; "Professional Internship" recognized as a credit
- Benefits to industry: acquisition of students with "experience"; reduced recruiting costs and training time with a 12-16 month internship; allows for involvement in longer term projects - evaluation done at 3-4 months followed by report at 16 month with institution

Discussion Points:

- must promote internship program through department more to increase numbers (Stan)
- formalize summer internship more - setting up interviews, making it easier for industry (Robert Young)
- allow academic credits and/or status for internships in Arts and Science degree programs similar to Applied Science (this will, among other things, prevent student loan payment requirement from kicking in after 6 months after last registration).

Undergraduate Curriculum - Hugh Horton

Hugh presented slides as follows:

- 480 students in the 4 Core Programs (80 in Chem., 100 in Eng. Chem, 160 in Biochem., 140 in Chem. Eng)
- 2050 students in the Service Teaching (850 in A&S 1st yr., 600 in Applied Sci. 1st yr., 600 in Life Sci. & Bio.)
- Challenges ("double co-hort", maintaining quality, aging curriculum, new CSC accreditation rules, aging equipment, student-faculty relations)
- Changes (move to Chernoff Hall, Undergrad. Liaison Ctte, Curriculum Reform)

Discussion Points

- Success of changing curriculum will be determined by surveys and monitoring QUEST scores (student feedback on teachers) , IDC interviews as well as student employment results
- changing research → Changing curriculum ?
- Have students more involved with research projects - awareness of Parteq (Barry)
- Mentor, give ownership, empower - attend company meetings (Dinesh)
- Donate new/used equipment (new to students) for charitable receipt (King Ward)

Graduate Studies - Bob Lemieux

Bob advised that the Ontario Council Graduate Studies' (OCGS) report included faculty CVs.

The following points were made from his slide presentation:

- Numbers of students - Chemistry graduate program was 2nd largest at Queen's in 2000/2001, taking in 21 new students for a total of 97 (48 M.Sc., 49 Ph.D.). The largest Queen's graduate program was Biology with 103 students.
- New research fields in 2001 report (vs. "old" fields in previous report 7 years ago) - Biological/Medicinal Chemistry, Computational/Theoretical Chemistry, Environmental/Analytical Chemistry and Materials Chemistry - consistent with Departmental Staffing Strategy and Queen's Strategic Plan for the CRC and CFI programs
- Revisions - 6 week modules, no longer 12-week, research progress reports, graduate research seminars, internal review of graduate thesis, comprehensive examination with research proposal (latter item not yet implemented)

Discussion Points:

- Research seminars manageable at approximately 2/mth since 1/2 of students go on to Ph.D
- Industry speakers presenting to Organic Chemistry - 2 speakers/week over 6 weeks

General Report/Budget & Staffing - David Wardlaw

Note: Refer to Stan Brown's Budget memo of October 24, 2001 addressed to Innovation Council Members.

David presented slides as follows:

- 3 year situation and tentative recruitment for faculty: current faculty complement is 21.5 +1; will be 23.5 +2 at July, 2003. Between Jan. 2002 and July 2003 will attempt to recruit new faculty via NSERC Industrial Chair, Tier I and Tier II CRC, Undergraduate Laboratory Coordinator (two positions), University Faculty Award position. Apart from UG Lab Coordinators all these 4 positions are externally funded. Unlikely that department will be successful in filling all 4 of these.
- 3 year forecast for university budget - 15-16% decrease (combination of inflation, flat government funding, and Queen's plan for enrolment changes over next 3 years). Positions vacated by retirement will be collapsed by Faculty of Arts & Science; department will thus lose 2 faculty positions. We need to do things differently! External funding is needed.

Discussion Points:

- A substantial portion of research overhead dollars of about \$125,000 is currently being used to partially fund undergraduate lab supplies, equipment and ongoing maintenance. We shouldn't be using research funds for undergraduate teaching but our options are limited at this time. (Dean's Equipment Fund of \$35,000 no longer available) (Rick Boswell)
- similar across the board picture at other universities - decreased sources of income (government and tuition) (King Ward)
- Queen's is lobbying to have Arts & Science tuition fees de-regulated to bring them in line with the actual costs of delivering all programs. This is a very complex issue for a public university to undertake and the senior administration are working hard to ensure that accessibility and excellence are not jeopardized. (Doug Puffer)
- Sponsorships - companies or individuals? (Randy Gossen)

Fund Raising - Doug Puffer

Doug took this opportunity to explain the "double co-hort". With the Ontario 5-year high school program being collapsed into 4 years by 2002/2003, both OAC (formerly Grade 13) and Grade 12 students will be graduating at the same time. This puts tremendous pressure on post-secondary institutions.

Following are highlights from Doug's presentation:

Chemistry Campaign Update

- Super-Build Program - one time donation from government will assist with buildings only; the \$200M Campaign for Queens will help address other infrastructure challenges
- \$27M from staff and faculty, \$3M from students at start of Campaign - now at \$198M
- Chemistry Project fundraising remains #1 priority of Campaign - Of \$20M goal, \$12.8M raised, \$7.2M to go.

Annual Giving

- ramping up Annual Giving - need support from Alumni
- The Davos Challenge letter (distributed at meeting) is example of how this might be done. Doug thanked Barry for his support in this way and advised of "spin-offs" from this letter. Some chemistry alumni have called to see how they might help: organizing class gifts, encouraging others to participate in challenge

Proposals

- The Bayer Special Lecture Series (Ron Commander) and Dow Seminar (Darwin Wilson) Series proposals have now been sent out.

Kresge Foundation

- Very prestigious – one of their prime objectives is to increase philanthropic involvement among donor constituents in higher education
- Support of "bricks and mortar" capital campaigns
- Current \$500,000 proposal to Stauffer Foundation has been accepted and qualifies Queen's to apply to Kresge Foundation. The Kresge Foundation is set up to help organizations fund the last 10% of a capital goal. This is often the most difficult portion of a fund raising goal. Kresge does this by offering a matching grant to all money that comes in during the final stage thereby creating a leveraging opportunity for new donors to the project. Once Kresge tells us that they have approved our application, Queen's will need to raise 1.1M within 18 months. Total \$2.2M - now would bring us to \$15M of \$20M Chemistry goal

Discussion Points:

- Proportion of grad students giving back to Queen's? 15% alumni donate in Canada compared to 60% in U.S.A.
- Ramping up Campaign using U.S. models - Advancement Department has grown to 110 people
- Must have meaningful involvement from Deans and Faculty, like in U.S.A, to provide meaningful links to potential donors
- Principles of fundraising - meaningful involvement leads to commitment
- With older equipment, difficult to compete and recruit students and faculty - must also be able to maintain equipment (Stan)

Breakout Sessions of Council Subcommittees and Reports

Two of the 3 Subcommittees met to set goals, tasks and timelines. The following points were discussed:

1. Equipment/Instrumentation

A list of equipment needs was provided.

The Status Quo

- Teaching labs - although new building, need newer equipment and maintenance thereof (Rick Boswell)
- Can't retain status quo - program will weaken, must be committed to strengthen - new curriculum excellence - so industry can recruit top notch students who are workplace ready (Doug)

The Vision

- be the acknowledged leader in undergraduate education among Canadian universities, recognized for innovative and integrated programs in Chemistry

Campaign for Teaching Equipment

- Annual Fund currently \$5,000 - can achieve upwards of \$60,000 with participation and letter like the Davos Challenge
- \$2.5M Endowment Fund will generate \$125,000 annual income in perpetuity
- this will increase spending on undergraduate lab courses to \$255,000 annually for supplies and equipment. Current level is around \$70,000

Campaign for Instrumentation

- Proposed for discussion
- \$2.5 M Endowment Fund
- 2 high tech positions

Instrumentation /Equipment

- One or both? Is \$5M realistic? Is \$2.5M realistic?
- Need equipment to facilitate new curriculum

Kresge Science Initiatives Fund

- Complex Formula (excerpts from Kresge Science Initiatives Fund attached)

Discussion Points:

- Seek equipment donations from Dupont Pharma and Bristol Myers Squibb merged operations, labs closing (Barry)
- Fisher Scientific will facilitate logistics of bringing used equipment from U.S. to Canada and facilitate CSA approvals as required (Jamie Hallman)
- Need new equipment to conduct the experiments created for the new curriculum
- Have great faculty and students - need equipment to meet Vision (Stan)
- Awards for Grad students are also not keeping up with increased enrolment (Bob Lemieux)
- Ron Zelonka identified 4 separate areas of needed money and resources, as follows:

	Current sources of Capital	Current sources of operating funds
Research Instrumentation Facilities	CFI, ORDCF, NSERC, other grants	Overhead on contracts, user fees, base budget
Undergraduate Teaching Laboratories	No source of capital (\$600,000 minimum needed for new undergraduate equipment and instrumentation)	small to nil amount available from current base budget of \$75,000 annual giving for equipment is circa \$5000

- We should be able to meet requirements of \$2.5M endowed fund - might fail to reach \$5M; this is a very big target
- there are more sources of revenue for research and major installations, current CFI application contains a provision for 2 Technical Staff for 5 years to operate major facilities
- decision made to support efforts needed to build endowed fund for undergraduate facilities

TARGETS:

- **Seek gifts for \$2.5 million endowment fund for equipment**
- **Income from proposed \$2.5M endowment will be approximately \$125,000 with growth to compensate for inflation**
- **Grow annual gifts to \$60,000 per year**
- **Maintain current base budget of \$75,000**
- **Seek minimum \$600,000 in capital gifts for equipment (Donations of listed equipment or cash)**
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- Doug Puffer to prepare a strategy document that will outline the requirements for a Kresge Foundation – Science Initiatives Program grant
- We all need to be committed to achieving 100% of the goal before starting down this road
- show application to officials of CFI. We may be able to make a case for their support as well (Jamie Hallman)
- Kresge will count gift-in-kind (new & upgraded used equipment) as long as it is on our list
- Kresge funds can be used for staffing needs as well

2. Student Relations

Dinesh asked Lindy Sutcliffe to report for the subcommittee. The following is her report:

"Essentially this group concentrated on non-curriculum issues that play a substantial role in student relations. Other departments, faculties and universities are working to develop summer, co-op or internship, and graduate employment opportunities. Students are becoming increasingly focused on what they might do with their education. With deregulation of tuition fees, providing avenues for students to finance their educations and gain work experience will become even more pressing.

Co-op programs at the Universities of Victoria, Laval and Sherbrooke, among others, were discussed. The merits of 4 month co-op programs (such as Waterloo) were considered. Robert Young commented that his company tends to employ from local universities in Quebec, and prefers 4 month positions. Queen's is not in a position to offer 4 month co-op type opportunities, because of our Fall-Winter course scheduling. In other disciplines we have managed to work around this. Many large employers (IBM, Nortel, Celestica, Bombardier)- hire both 4 month co-ops and full year interns, but getting the framework in place takes time and we have to convince employers. Other employers in the group thought that a one year program might suit their requirements.

The employers present in the group commented on their own particular needs for employing students, which varied widely. It was agreed that evening information sessions for students with employers and on-campus staff (Career Services) should be held annually, in both spring and fall. Fall sessions could concentrate on employment opportunities (summer, internship and graduate), while the spring session could concentrate on graduate level employment opportunities."

Discussion Points:

- promote Internship Program within Department - use Web page showing links to industry -profile alumni (need faculty liaison for intern program – David to assign in Dec./Jan.)
- provide information through Intranet and use Listserv of students (Stan)
- bring more awareness to Parseq and Canadian biotech start ups (Barry Robins)
- set-up an annual Chemistry Undergraduate Session with interns speaking about careers; possibly set-up Graduate Session too - match up interests of students with industry needs
- get a broader spectrum of companies on the student relations sub-committee, too concentrated on pharmaceuticals

3. Building Fund - see attached presentation

Council Tasks

- Doug to draft application to meet Kresge Foundation requirements - structure \$\$ for \$2.5 Endowment Fund - will circulate to subcommittee, then Council for approval
- Jamie to facilitate movement of donated equipment across border, and get CSA approval
- Dinesh to set-up an annual Chemistry Undergraduate Session
- Randy Gossen to book the Board of Trade for Thursday May 2, 2002 for the next meeting

Next Meeting Date

The next meeting of the Chemistry Council will be Thursday, May 2, 2002 at the Board of Trade in Toronto. Randy Gossen will make arrangements for the venue.

Note: November 1, 2002 is already set for the Fall meeting. The official opening of Chernoff Hall will tie in with Convocation. A very special science symposium and other celebrations are also planned for Saturday Nov 2, 2002

Adjournment

David Wardlaw concluded the meeting by presenting a slide that listed the "Priorities for the Department as identified at the QCIC/Departmental Retreat in May, 2001". It was noted progress has been made on some and others remain to be tackled .