

From the Departments – November 2007

University of Victoria

Construction is underway on a new Science Building that will see all SEOS facilities (currently dispersed over seven locations on campus) brought together in one building that will also include new classrooms and teaching labs. Occupancy is planned for the summer of 2008.

In 2007 we began offering a new Ocean Sciences Minor, which can be taken in combination with a degree in any discipline. The minor is based on an intensive summer of classes and field/laboratory experience, with third-year courses in geological, chemical, physical, and biological oceanography (the first three represent new courses). Students must also take first our first-year solid-earth and ocean/atmosphere courses, and chose two senior electives. Several days of ship-based sample and data collection are an important component of the program that is very popular with the students. Our first summer operated at close to the maximum capacity of 24 students.

New faculty members in the past two years include Kim Juniper (Marine Ecosystems, joint appointment with Biology Dept), Jody Klymak (Physical Oceanography, joint with Physics Dept), and Roberta Hamme (Chemical Oceanography). We have also filled new staff positions of Senior Laboratory Instructor–Ocean Sciences Minor and Marine/Field Operations Manager. Nonetheless, lack of University technical support for our research and graduate programs remains a challenge.

Over the past two years, the number of students in our first-year courses is up significantly from previous years, and is up generally in our core second through fourth year courses. However, the enrollment in our third-year “outreach” courses designed for non-science students has decreased significantly over the past 5 years. The net result has been a slight decrease in enrollment.

Earth and Ocean Sciences, UBC- 2006-2007. (Paul Smith)

>6,000 students are enrolled in our courses, 340 undergraduate students in our programs, and graduate enrolment reached 167. EOS is now responsible for administering the Environmental Sciences Program.

The Earth Systems Science Building (ESSB)

A fundraising campaign, led by Ross Beaty, is underway in the private and public sectors with the aim of raising \$75 million for a new building. *Goldcorp* has publicly announced a donation of \$5 million towards the project and there are many more major donations in the pipeline.

New Research Faculty Hiring

We hired two Assistant Professors- economic geologist Ken Hickey and CR Chair holder Christian Schoof who is a glaciologist.

The Carl Wieman Science Education Initiative

The Nobel Laureate, Carl Wieman, has joined UBC to catalyze a revolution in undergraduate science teaching. The aim is to optimize both teaching effectiveness and the curriculum. Using well-defined learning goals and the quantitative assessment of goal achievement, Carl also intends to use modern technology to shrink large classes by making them interactive through computer response systems. Teaching will be further enhanced by the development of interactive computer models. EOS is a Phase 1 Department which involves a 5-year program and a budget of \$2 million. We have hired 3 new lecturers to assist with the initiative.

Outreach

The downtown *Pacific Mineral Museum* has now been moved to EOS-UBC and merged with the former *Geological Sciences Museum* to form the *Pacific Museum of the Earth*. A major step forward was taken in February 2007 when Ross Beaty (Pan American Silver), Stephen Toope (President of UBC) and Paul Smith (Head of EOS) officially opened the “Vault.” This facility securely displays precious minerals in a setting that maximizes their stunning beauty. We hope this will help inspire schoolchildren and the general public alike, raising awareness of the earth sciences. The ceremony also included the official opening of the *EOS Teachers’ Resource Centre* which will provide classroom and teaching aids to UBC’s student teachers and to teachers already teaching in the school system.

The EOS Learning Centre

We have converted our former reading room into the *EOS Learning Centre*, at the cost of about \$0.3 million. It will provide our students with study space, access to learning technologies, a computer lab, tutor support, course materials access, and a seminar room for practicing presentations.

Simon Fraser University

The Department of Earth Sciences at Simon Fraser University, has been growing steadily since its inception in 1995. Our most recent faculty addition is Dr. Shahin Dashtgard who started in January, 2007. He will be developing petroleum geology courses and adding to our strengths in sedimentary geology and ichnology. We will be adding a laboratory instructor in 2008, which will bring our faculty complement to seventeen. About a third of our regular faculty applied for Discovery Grants from NSERC this fall.

UBC Okanagan Department Report

Programs and Courses

- The Freshwater Science B.Sc. Degree Program has been revised. It is more “flexible” though no longer requires mineralogy.
- The Earth and Environmental Sciences (EESc) B.Sc. Program will be revised in January.
- Mineralogy and Optical Petrology may be merged into a single course. Comments or course outlines for people who have already done this would be helpful.
- We now have a Ph.D. Degree in Environmental Science. We plan to modify the degree this winter to an Environmental and Earth Science Ph.D. for obvious reasons.
- We will have new teaching lab space in the Fipke Centre building. There will be a small (10% ?) increase in our total teaching space (4500²ft.).

Student Numbers

- Enrolment in EESc courses has jumped. We have 15+ (?) graduating this Spring.
- First year numbers continue to climb but are ¼ of first-year Chemistry.

Faculty and Other Hires

- Dr. Craig Nichol, a contaminant hydrologist has a tenure-track appointment as of 2006.
- There will be an advertisement for a LA ICP MS Technician in the coming weeks.
- We anticipate advertising for a Senior Industrial Research Chair (NSERC) in Applied Mineralogy/Geochemistry. If this moves ahead it reflects Dr. Charles Fipke’s help.

Research

- The Fipke Centre for Innovative Research will open in June, 2008. There will be a new LA ICP MS lab in the building. We are shopping for two ICP MS’s and a laser. This reflects a \$1,000,000.00 donation from Dr. Fipke specifically for this equipment. UBC provides a technician for five years.

Upcoming Events and Developments

- The Canadian Journal of Earth Sciences Office moves to UBC Okanagan on Jan. 1, 2008.
- Dr. Robert Young is organizing the Cordilleran section GSA meeting to take place at UBC-O in May 2009.

University of Calgary

The past year has been a period of remarkable growth and change at the University of Calgary. The Department of Geology and Geophysics at the University of Calgary was renamed the Department of Geoscience as of July 1, 2007, to reflect its broad range of disciplines, including hydrology and environmental geology. With more than 400 majors, the department has the largest undergraduate geoscience enrollment in Canada, and has added 11 new faculty positions including appointment of an external Head (David Eaton). Last year, it created Canada’s only undergraduate geoscience program with a focus on petroleum geology. Further growth is planned, and the Department of Geoscience is currently seeking three new faculty positions: Associate/Full Professor in petroleum geoscience, an assistant professor in mineralogy and an instructor. More information can be found on the web page at www.ucalgary.ca/geoscience.

Mount Royal College, Calgary

The BSc proposal with majors in General Science, Geology, Health Sciences and Cell and Molecular Biology was submitted to the Campus Alberta Quality Council (CAQC) earlier this year and the CAQC Evaluation Team visited MRC in late October. Initial reports have been positive and the review team has recommended that the proposal be approved provided various conditions are met.

- The Alberta government will have to consider the report and decide on implementation and funding issues.
- We may be offering the new degrees commencing in September 2008 or 2009.
- An Earth Science (Geography, Geology, and Archaeology) major has been proposed for the next round of submissions.
- Enrolments continue at record levels in our second year courses.

University of Alberta

The Department of Earth and Atmospheric Sciences currently has 47 full time academic staff, 4 faculty lecturers, 31 support staff, 4 research Associates, 16 Post-Doctoral Fellows and 126 graduate students. Over the past two years we have recruited 7 new academic staff (Collins (Human Geography), Croitoru (GIS), Douglas (Palaeolimnology, Director of Canadian Circumpolar Institute), Haas (Sea Ice Geophysics, Alberta Ingenuity Scholar), Herrle (Micropaleontology, Tier 2 CRC), Summers (Human Geography), and Sutherland (Environmental Fluid Dynamics)), 3 Faculty Service Officers (Dey-Nuttall (Canadian Circumpolar Institute), Matveev (Electron Microprobe), and Stern (Canadian Centre for Isotopic Microanalysis), 2 Faculty Lecturers (Patrick (Human Geography) and Szejwach (Atmospheric Sciences) and 1 member of support staff. We have also had 5 retirements (Chatterton, Hodgson, Jackson, Lozowski and Rains). We are currently advertising for 4 new appointments in Integrated Petroleum Geoscience (jointly with the Geophysics group in Physics) and 1 position in Invertebrate Paleontology.

We currently teach undergraduate degree programs (Honors and Specialization) in Geology, Paleontology, Environmental Earth Science, and Atmospheric Science and an Arts major in Human Geography. Proposals for a course-based M.Sc program in Integrated Petroleum Geoscience and a B.A. in Planning are under development.

Thomas Stachel was successful with a major CFI application to set up an ion probe facility at the University of Alberta, and Richard Stern has been recruited from Australia to manage the facility.

Brian Jones and Larry Heaman were elected Fellows of the Royal Society of Canada. Brian Chatterton won the Billings Medal, Paleo Division, Geological Association of Canada; Rob Creaser was elected a Distinguished Fellow of the GAC; Jeremy Richards won the WW Hutchison Medal from the GAC; John England's NSERC Northern Research Chair was renewed until 2012; Duane Froese received the J Ross Mackay Award, Canadian Geomorphology Research Group; Murray Gingras and George Pemberton won the Medal of Merit from the CSPG; Ben Rostron was elected a Fellow of the GSA; Arturo Sanchez-Azofeifa won the Faculty of Science Research Award; John Wilson was elected a Fellow of the Canadian Society of Agricultural and Forest Meteorology.

Geological Sciences, University of Saskatchewan

- Search still ongoing for Crustal Tectonics/Geodynamics, selection of candidates to start very soon, but has been difficult to attract applicants
- Faculty complement consists of 2 Canada Research Chairs, 2 endowed research chairs, Associate Dean of Science, 7 Full Professors, 3 Associate Professors, 1 Term Assistant Professor, 4 active Emeritus Professors
- Undergraduate programs in Geology, Geophysics, Environmental Earth Sciences meet CGSB requirements, which APEGS now follows
- Increase in enrolment in 2nd year (e.g., 2007-08 Term 1 Mineralogy – 90 students) is causing a strain on resources, particularly in labs

- 28 B.Sc. graduates in 2007, including 4 in Geophysics and 2 in Paleobiology, all of whom are employed (19 in minerals, 5 in petroleum, 2 in grad school, 1 in environmental, and 1 university lab research assistant). Graduation rate has been consistent at about 25 for a number of years
- 38 graduate students, including 16 PhD. There are 16 female graduate students (7 PhD and 9 MSc). It is very difficult to attract Canadian students into core geoscience research areas, and many graduate students do not have a Geology BSc degree meaning that finding enough lab teaching assistants is difficult. 15 of the graduate students are in Environmental Science research areas, namely hydrogeology and aqueous geochemistry, metals in biosystems, and paleoenvironmental and climate change
- All faculty except one have NSERC Discovery grants, as well as the Term Assistant Professor and two Adjunct Faculty. Total research funding about \$3M.

Department of Geology, University of Regina

Accomplishments, Highlights and Needs 2006,2007

1. The Department trains Geology students at undergraduate (BSc & BSc Honours) and graduate (MSc & PhD) levels. Students completing our geology degree are eligible to apply for professional accreditation with the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS).
2. Student numbers continue to grow from 30 in 2003 to 101 declared Geology majors in 2007. In addition, there are 36 joint Geol/Geog BSc students, and minors in related fields some of whom are taking our new Joint Geology/Geography degree for BSc students who want professional accreditation with APEGS in the area of Environmental Geosciences.
3. On average the Department has had at least 2 to 4 undergraduate theses, 1 Postdoctoral fellow, 25 Masters and 3 PhD students enrolled our program.
4. We maintained our undergraduate offerings assisted by two fulltime Geology Lab Instructors. Our lecture component was aided by a 3 year term position covering the secondment of one tenured faculty member and the retirement of another. Our 7 adjunct professors continue to play an important role in teaching undergraduate and graduate courses, supervision of undergraduate and graduate theses.
5. In 2006/2007, the 7 faculty members in the Dept. of Geology collectively held 4 NSERC Discovery grants, 2 CFI grants, 2 equipment grants and numerous other grants, contracts and support in kind from government and industry, such as SIR and GSC.
6. Over the last 6 years the department has developed 3 state of the art research labs, the "Geofluids Characterization and Modeling Laboratory," "Geomodeling and GIS Laboratory," and the "Faculty of Science Scanning Electron Microscope Laboratory."
7. We continue to hold 2 field courses each year one to the Rockies & Dinosaur Provincial Park and one to the Precambrian Shield. We were awarded an ISOF new initiatives grant to aid in the development of an international geological field trip to Colombia for senior students. Individual courses continue to offer field trips to sites around Saskatchewan, including a trip to a uranium mine near Points North, Sask.
8. The D.M. Kent Club of Geology student society continues to grow and was very active holding eleven events this past year. They have their own GSS web page and newsletter and are established student chapters in the GAC, APEGS and both the Canadian and American Association of Petroleum Geologists.
9. We have had a succession of visiting scientists from China with as many as 3 at any one time.
10. The Department enjoyed many seminars this year from students, faculty and visitors from government (SIR, GSC, NWT) and industry (NEXEN, Shell, SINOPEC) and other universities (Can and International).
11. We continued public outreach, recruitment and retention through our departmental poster publicizing the Graduate Program in Geology, public presentations, labs and field trips for local school groups, conducted by faculty and graduate students. We hosted a meet and greet at the CSPG conference in Calgary in May. We are actively recruiting needed graduate students.

12. The department requires new tenured faculty to cover growing enrolment and to offset secondments, sabbaticals and retirements. Half of our courses were taught by sessional lecturers last year alone. Immediate concerns are the lack of teaching space and materials for our expanding class sizes. We continue to upgrade the optics and petrology labs to better meet the needs of students and faculty, cognizant of the requirements for professional accreditation and demands from industry, but we are desperately seeking funds to replace our 60 year old second hand optical microscopes.

Department of Geological Sciences, University of Manitoba

The Department of Geological Sciences is going through a phase of renewal with the arrival of three new faculty members in the past 2 years: Andrey Bekker, Assistant Professor in Stable Isotope Geochemistry; Alfredo Camacho, Assistant Professor in Tectonics; and Mostafa Fayek, Associate Professor and Canada Research Chair (Tier II) in Environmental and Isotope Geochemistry. Recent CFI awards will add the following instrumentation to our crystallography/mineralogy and geochemistry facilities: single-crystal X-ray diffractometer with charge-coupled device detector; X-ray microdiffractometer; laser-Raman microprobe; point-source Mossbauer spectrometer; femtosecond laser for LA-ICP-mass spectrometer. A broad-band portable seismometer array, also funded by CFI, was deployed in Manitoba this past summer. Frank Hawthorne, Distinguished Professor, was invested into the Order of Canada in 2006 in recognition of his achievements in mineralogy and crystallography.

The Department currently has 85 students enrolled in the Major and Honours programs in Geology and Geophysics, which is a 30% increase from two years ago. A 3-year General degree in Geological Sciences became available in September 2007. We have 9 M.Sc. students and 6 Ph.D. students, and continue to have difficulty attracting good graduate students. Enrolment in the introductory geology courses has declined dramatically (66% decrease in 2006-2007 from the previous year) because the Department is now part of the Clayton H. Riddell Faculty of Environment, Earth, and Resources and our courses are not regarded as "Science" courses by the Faculty of Arts, Faculty of Science and University I. The Department will be making changes to the introductory courses to make them more accessible but the University has been unwilling so far to help us address this problem.

The Clayton H. Riddell Faculty of Environment, Earth, and Resources with Norman Halden as Interim Dean is slowly recovering from a very difficult start-up phase. Budget and space shortages continue to plague the Faculty but appropriate steps are finally being taken by the Faculty's administration to try to deal with these problems. The search for a new Dean has just been initiated.

University of Windsor, Department of Earth and Environmental Sciences

- The department celebrated this fall the 40th anniversary of its establishment
- The undergraduate programs in the department went through rigorous external and internal review as part of the mandated 7-year review cycle. The overall opinion is that the department is delivering good quality programs. However, there were some suggestions to trim some programs and focus in some area to attract more majors. The administration at the University is putting a lot of pressure on us to focus our programs on either earth science or environmental science (from the current structure of 5 programs) and to work on attracting more majors. The department is at the present time heavily involved in discussions to reorganize all undergraduate programs into perhaps two programs; an earth science and an environmental science program.
- The graduate enrolment is healthy and most of our PhD students receive various scholarships; both internal and external. However, the University decided to raise the fees for international students by 40%, which will affect greatly enrolment in all science in engineering programs as the international students represent a good portion of our enrolment.
- Our current complement is 13 faculty, including an Associate Dean of Science and Great Lakes Institute for Environmental Research Director. We have a new cross appointment in environmental ecology and isotopes from the Great Lakes Institute for Environmental Research. I do not anticipate any addition for the foreseeable future unless we see a big boost in our majors.

University of Waterloo:

This is the 50th Anniversary of the University of Waterloo. The department organized a number of activities to mark the occasion: sponsored public lectures, added an anniversary rock to the Peter Russell Rock Garden, and opened a Geo-Time Hiking Trail on the west side of the city (brainchild of Alan Morgan).

The department changed its name to the Department of Earth and Environmental Sciences to better reflect the nature of its activities and the desire to broaden scope into the water and atmospheric areas in future. Barry Warner (Quaternary paleoecology/wetlands ecology) and Jim Sloan (atmospheric chemistry) joined as full-time members of the department this year.

A major fund-raising drive is on to establish the Robert Farvolden Endowed Research Chair in Groundwater. This will bring the total to 4 Research Chairs in the Department adding to 2 CRCs (Ed Sudicky, David Blowes), and one University Research Chair (Sherry Schiff). Ed Sudicky, Emil Frind, and Shaun Frape all won major groundwater awards. The total number of full-time faculty=23.5. Annual research funding is over \$8M.

Total UG enrollment=135 majors including Geological Engineering. Undergraduate enrollment remains a challenge. As we modify environmental science components of our programs, we hope it will increase UG enrollments. Grad enrollment=125 and remains stable.

University of Guelph

Earth Science at Guelph focuses on the earth's surface and the processes -both human and natural-that modify it. The department of Land Resource Science consists of 17 faculty with a unique mix of disciplinary expertise. Our core strength in soil science is complemented by expertise in environmental geology and meteorology. The Geography department also contributes to undergraduate and graduate Earth and Environmental science programs on campus. It includes 19 faculty; of which 6 are physical geographers and 2 are GIS and remote sensing faculty. We also have faculty focused on surface and groundwater hydrology within the School of Engineering.

We are currently experiencing significant faculty resource pressures with recent and upcoming retirements in both departments. Beth Parker (hydrogeology) was recently appointed as an NSERC Industrial Research Chair in the School of Engineering with adjunct professor status in Land Resource Science. John Lindsay (GIS and remote sensing) will join the Geography Department in January 2008. Land Resource Science is currently selecting candidates for a junior CRC faculty position in Environmental Geology or Boundary Layer Meteorology. The search for a new Dean of the college that includes Land Resource Science is almost complete. Future developments include a potential move to a new building for Land Resource Science in 2008, a potential restructuring of Environmental Science programs on campus with the arrival of the new Dean and continued efforts to replace retiring faculty in both Geography and Land Resource Science.

McMaster University

Overview: School of Geography and Earth Sciences, McMaster University, Hamilton
Carolyn H. Eyles (on behalf of Pavlos Kanaroglou, Interim Director)

Current status: The School of Geography & Earth Sciences (SGES) consists of 26 full-time faculty members (of which 14 are Science faculty and 12 are Social Science faculty). SGES offers a B.Sc. Honours Earth & Environmental Sciences program (EES) with specialist streams (newly named as Aqueous Environmental Geochemistry, Earth Sciences, Environmental Hydrology & Climate). The EES Co-op option has been phased out and an internship program has been introduced. The Honours EES programs graduate approximately 25 students per year. Our graduate student numbers have increased substantially over the past year and we now have 30 PhD, 19 MSc and 17MA students.

Recent events: The Faculty of Science are introducing a 'direct entry' system and students will now elect to enter Life Sciences I, Physical Sciences I, Mathematics and Statistics I or Environmental Earth Sciences I. We are not sure how this will affect entry into our programs but there seems to be considerable interest from Grade 12 students who are attracted by the 'environment' label! There are a number of curriculum changes we are introducing this year

(2008 -) including slight changes to the structure and content of the Honours B.Sc. Earth & Environmental Sciences (EES) program to create more distinctive specialist streams. Most students following this program will fulfill the academic requirements for APGO certification. We are introducing a new Honours B.Sc program in Environmental Sciences that is less constrained than the EES program and we will offer a combined Honors Program in Biology and Environmental Sciences jointly with the Biology Department. All of our Geo courses will be re-labeled as Geography, Environmental Science or Earth Science (and cross-listed where appropriate) to make the content of the courses more obvious to undergraduates.

Future issues: We hired a new Assistant Teaching Professor (Maureen Hadden) who will be starting in January and we hope to start a search for an isotope geochemist to replace Darren Grocke. We are currently writing a new 'Strategic Directions' document for the School and will hold a School retreat in early December to discuss undergraduate teaching issues. We will also be undertaking a search process for a new Director as Pavlos Kanaroglou is serving as Interim Director for only one year.

Brock University, Department of Earth Sciences

The Department has seen rising enrollments that have doubled in the last ten years. However, our Faculty complement has dropped over the same period by 1, and this last summer we have had our strength diminished further by the transfer of one faculty to an administrative position, and another to part-time administrative duties. Although some courses are still taught by these individuals, it amounts to a serious reduction in faculty interacting productively with the student body. In the near future we anticipate two retirements. On the bright side our graduate student intake exceeded our expectations, with six new students being admitted in September, and further additions anticipated, one each in January and May. This causes strains on accommodation (Brock space being at 25% the provincial standard) and teaching (no effective reduction in load for graduate teaching until the new agreement next July (we hope). Thanks to last year's presentation by Dr Grieve, we have one graduate funded through GSC. Dr Martin Head was successful with a \$73K NSERC equipment grant, for a palynological research microscope (Leica) equipped for fluorescence and vitrinite reflectance. This will be the only such equipment in central Canada, and the student starting in January will be working with it. Next year Dr Head will be reporting to you – as he has just been appointed Chair, as of July 2008.

University of Toronto - Geology

The Dept. of Geology currently has 20 faculty in its graduate school, whose members have appointments and undergraduate teaching responsibilities on three campuses: St. George (15 faculty), University of Toronto Mississauga (3) and University of Toronto Scarborough (2). We also have 7 faculty cross appointed to our graduate department from other units (Civil Engineering, Geography, Royal Ontario Museum) plus several status only/adjunct faculty (4). Efforts in Earth Science research and education at the UofT remain highly fragmented; in addition to activity in the Dept. of Geology, Earth Science related faculty are present in the Departments of Physics (atmospheric physics and geophysics), Chemistry (atmospheric and environmental chemistry), Geography (physical geography) and Civil Engineering (rock mechanics and mining engineering). In the Faculty of Arts and Science alone there are 54 faculty members across 4 departments and 3 campuses supervising ~170 graduate students. On the St. George (downtown) campus there are 37 faculty across 4 departments delivering Earth science-related undergraduate programs to approximately 320 students. Recognizing this, the faculty recently completed a review of efforts in Earth and Planetary Science research and education with a view to achieving better integration across departments.

Undergraduate enrolments in the Dept. of Geology have been growing steadily over the last three years. Program enrolments are currently at ~90 students up from 44 in 2005. In 2006 we taught ~2000 students in undergraduate course, with service teaching making up 85% of the total. Programs at the Mississauga and Scarborough campuses have seen similar increases in undergraduate enrolments. Graduate enrolments have maintained a steady number of ~45 despite efforts to increase under the Ontario graduate expansion initiative. A new professional M.Sc.

program in Environmental Science at the Scarborough campus launched two years ago has been very successful and currently has an enrolment of 60 students.

Since 2005 we have hired 4 new faculty members: Jorg Bollmann (2005, Paleo-oceanography), Rebecca Ghent (2006, Planetary Remote Sensing), Jochen Halfar (2006, Paleoclimatology) and Bridget Bergquist (2008, Stable/Radiogenic Isotope Geochemistry). Through start up, NSERC and CFI funding sources these individuals are adding new research laboratories: an environmental SEM and micropaleontology lab, a remote sensing lab, and a multicollector ICPMS and environmental geochemistry lab (pending).

York University – Geophysics

Our Geophysics program was cut off at the knees a year ago and we are still trying to sort out where we are going. Some form of Geophysics is necessary as it underpins the Geomatics/Geodesy program that we have.

Jack McConnell

Department of Geological Sciences and Geological Engineering, Queen's University

Budgetary Issues

The situation in the Department is strongly influenced by the general financial well-being of the University. Due to chronic under-funding of post-secondary education in Ontario, Queen's has been facing ongoing budget cuts for many years. Until now, the Faculty of which we are a part has insulated Departments from such cuts, mainly through the collapse of positions. Now, however, their ability to do this has ended and all Departments have been required to plan for a 5% budget cut (based on all expenditures, including salaries) next year. This will clearly have an impact on our operations, but the Department as a whole as worked collegially to come up with a plan that minimizes the impact on our core activities of education and research. In this regard, our efforts to raise donations from alumni and corporations will play a large part in maintaining the quality of the education that we offer. To date, we have created an endowment that sits at nearly \$1,000,000, the interest from which funds a substantial part of our field-trip and field-school program.

Staffing

Over the last two years, we have had two faculty members resign to pursue opportunities in the private sector. All such empty positions go into a central pool and Departments from across campus compete for them. To date, we have not been successful at gaining either of these positions back. We have, however, been given a three-year non-renewable (temporary fill-in) position in geophysics that covers one of the vacancies; the individual filling this position, Savka Dineva, began her appointment this fall. We will continue to work aggressively to obtain the two tenure-track positions from the university administration, but we are also pursuing external sources of revenue to fund at least one of them.

Collaboration with the Department of Mining Engineering

A new spirit of cooperation has developed between our Department and the Department of Mining Engineering. Tentative initial steps have been taken to facilitate a greater degree of integration of our two undergraduate programs, and a larger-scale vision has been created to capitalize on the exceptional breadth of expertise in the mineral-deposits sector that exists at Queen's. The Mining Department has hired two new faculty members, both of whom have geology degrees and research interests (sustainability of the mineral industry; mineral processing) that overlap with those in our Department. High-level support exists within the University for increased collaboration between our two departments and will probably help to insulate us from any future budget cuts.

Enrolments

Enrolment last year in our 2nd-year programs was up substantially from the preceding years, probably because of the perception that there is an abundance of jobs in the petroleum and mineral industries. It was surprising, therefore, that this year's 2nd-year class was smaller than last year, returning to numbers closer to those we have had for several years. A summary of current enrolments by program and year is provided below.

Degree Program	2 nd Year	3 rd Year	4 th Year	Total
Geol. Science	19	26	20	72
Geol. Engineering	25	31	25	81
Total	44	57	45	153

Graduate enrolment remains close to our traditional level, with 31 M.Sc. students and 29 Ph.D. students registered at the present time. We were not able to grow our graduate program, as requested by the Province and the University, but we appear not to have been adversely affected by the increased competition for graduate students.

We remain under pressure from our School of Graduate Studies to decrease the time-to-completion for both M.Sc. and Ph.D. students. The absence of discipline averages for time-to-completion makes it difficult for us to know whether we are anomalous, or not. Perhaps CCCESD could collect such statistics?

Earth Sciences – Carleton University

We've had some changes in faculty. Gail Atkinson resigned in December 2006 to take up a Canada Research Chair Tier 1 at the University of Western Ontario. She was replaced by Brian Cousens, effective last July, so our complement of faculty remains at 9.5.

Our undergraduate enrolment, on the other hand, continues to grow, and we now have just over 100 undergraduate students in our program, a 70% increase in the last 2 years. We are rapidly approaching the limit of our resources (teaching, space, staff). Our service course enrolment last year was about 1500 students. Graduate student numbers are steady in the mid 20's, but we hope to increase the number next year in response to the expansion of graduate enrolment being promoted by our provincial government.

University of Ottawa

The numbers of students in the first year Geology courses for Science-Engineering students remain very high, over 1250. We hoped that many would be attracted to Geology, but the number of students changing to Geology program is not significant yet. The total number of undergraduate students in Geology and Geology-Physics programs is 52, and that for Environmental Science program is 122. Forty five students are in graduate programs in Earth Sciences.

Dr. David **Schneider** took the Faculty position in Metamorphic Petrology, which was advertised in the fall of 2006. He arrived from Ohio as an Associate Professor in September, 2007. The nomination of Dr. Glenn **Milne** for a CRC II in Earth System Dynamics in December, 2006, was successful. He is arriving from Durham University in April, 2008. Both are totally new positions. Combined with Dr. Simone Dumas, a Science Lecturer that arrived in the fall of 2006, the Department has three new positions in the past 15 months. This resulted in a shortage of space.

Dr. Andre **Lalonde** was appointed as Dean of Science in the fall of 2007. The Faculty suggested the Department to advertise a five year replacement Professor position in Mineralogy. The Department proposed the University to create a tenure-track position. The University has signed an agreement with Health Canada in the spring of 2007. Under the agreement, Dr. Pat **Rusmussen**, Scientist at Health Canada and an Adjunct Professor of the Department, is moving to the Department together with her analytical equipment and two technicians.

The Faculty created a “floating” position in Environmental Science in the spring of 2007. A successful candidate of a “floating position” selects his/her base department. An ecotoxicologist filled the position, but left in less than 6 weeks. The position will be advertised again.

In June, 2007, Husky Energy Graduate Fellowships in Sedimentary and Petroleum Geology was established with \$2 million endowment fund; \$1 million from Husky Energy and \$1 million from the University's Graduate Fellowship Program.

The University encourages the Department to have exchange programs with foreign universities. The Department started to look into having possible agreements with several universities.

University of Québec at Montréal (UQAM)-Department of Earth and Atmospheric Sciences

Last year was relatively uneventful, the student enrolment is the same compared to the academic year 2005-2006; around 220 undergraduate students and 90 postgraduate students.

The bachelor degree is being updated with 4 options (mineral resources, environmental geology, geophysics and meteorology). It is a significant development that reflects the areas of expertise of the faculty and hopefully it will be effective fall 2008. A new certificate in Energy is also planned for fall 2008.

The Department of Earth and Atmospheric Sciences at UQAM (Montréal) and UQAC (Chicoutimi) have changed the title and the content of their joint Ph.D. program. The former title Ressources Minérales was restrictive and it is changed to Earth and Atmospheric Sciences. The number of courses required is smaller and the approach is more multidisciplinary to reflect the different domains of research of the staff. The number of applications has risen significantly and it attracts students from physics, civil engineering, geography, archaeology, etc. The change will be officially effective January 2008.

Pierre Gauthier is our only recruit for 2007-2008. He comes from Environment Canada and was already an adjunct Professor in the department. His expertise in the new field of Data Assimilation and its applications in remote sensing, meteorology, numerical weather prediction and THORPEX are widely recognised and extensively funded. It contributes significantly to improve the quality of weather and environmental forecasting.

Alfred Jaouich, Head

Department of Earth & Planetary Sciences, McGill University

In collaboration with the Departments of Geography and Atmospheric and Oceanic Sciences, we have developed a B.Sc. Major program in Earth System Science (ESS). Having been approved by the McGill Senate in February 2005 and by the Ministry of Education of Quebec in the winter of 2007, the program has just commenced officially in the Fall of 2007. ESS courses were taught for the first time this past year (2006-2007), and they were uniformly met with a very enthusiastic response by students, professors, and the three departments alike. This initiative is an exciting, novel, integrated and holistic approach to tackle the complex and challenging global problems facing the Earth today. The core courses of the program allow a student to build links among diverse scientific disciplines. Modelling and synthesis are hallmarks of the program. A student's ESS experience finishes with a capstone course which allows the student to undertake advanced research projects under the supervision of one or more of the ESS faculty members.

To support this program, the consortia of departments has hired six new faculty members. The Department of Earth and Planetary Sciences recently hired two new faculty members, Professor Boswell Wing, CRC Tier II in isotopic geology, who started in January 2006 and Professor Jeffrey McKenzie, a groundwater hydrologist who started in July 2006. These professors are ably assisted by a new Faculty Lecturer, Dr. William Minarik, who is a specialist in earth science education and igneous geology.

A related development has been the creation of an exchange program, funded by Human Resources and Skills Development Canada (HRSDC), in the field of Earth Hazards. This program, the North American Earth Hazards Consortium (EHaz), involves six universities from Canada, the U.S.A. and Mexico; it began in the Fall of 2005 and is an initiative of our department, with contributions from the Departments of Geography and Atmospheric and Oceanic Sciences. This program provides outstanding opportunities for undergraduate and graduate students to gain a better understanding of and insight into natural hazards in a North American context. During the past two years, a series of unique classroom-based and field-based initiatives have taken place under this program. Students and professors from the six universities have used video conferencing software from Marratech (<http://www.marratech.com>) in two courses. Our department is a leader at McGill and also worldwide in the application of this technology. Coupled with the courses have been two thematic fieldtrips of two weeks each to western Canada and the USA. Thus, student participants get the opportunity to relate and interweave theoretical and field-based learning in Earth Hazards.

The Department of Earth and Planetary Sciences is growing its partnership in the GEOTOP-McGill-UQAM research center. The Centre provides "glue" for collaborative research

in earth sciences between McGill and UQAM. The centre supports EPS graduate students and analytical instrumentation. All our new faculty members are also new members of GEOTOP. Cross-fertilization in terms of projects, research grants, and publications is increasing, and the importance of GEOTOP to the Department, and vice-versa, will continue for the foreseeable future.

University of New Brunswick

Student numbers are up, the graduate program has grown, but is confined by space; a new CRC was appointed in impact studies, two new faculty positions were appointed (metamorphic petrology, 1st year instructor); the university has a policy of replacing one in five of faculty positions as they retire or resign. Reports of 100% employment for graduates helps to keep enrolment numbers high.

Acadia University Earth and Environmental Science

The Department of Geology and program in Environmental Science merged into a new department in July, resulting in an increase from 5.5 to 8.5 faculty positions, one of whom (Nelson O'Driscoll) is a newly appointed CRC in biogeochemistry. The department offers BSc programs in geology, environmental science and environmental geoscience and MSc degrees in geology and (newly instituted) applied geomatics in collaboration with the Nova Scotia Centre of Geographic Sciences.

Student numbers appear steady – a record small class will graduate this year, but a 20-year high number is entering the second year program. Significant enrolment decline across the university has led to much belt-tightening, which became a major issue in the recent faculty job action. We await fall-out from the resolution, but anticipate considerable difficulty replacing any departing faculty or staff.

Dalhousie University Earth Sciences (Martin Gibling)

Faculty numbers have stayed steady at 15 professors and instructors, with the retirement of Barrie Clarke in summer 2007 but the addition of Yana Fedortchouk with a UFA award. This substitution allows us to maintain our mineralogy and petrology programme – important for the mining industry. A spousal appointment in geochronology is also close to approval for 2009 – it is a Dalhousie policy to encourage such arrangements. I can say with considerable relief that we seem to have weathered 4 faculty retirements or resignations in 3 years, and have no retirements until 2011. In addition, Dalhousie is expected to phase out mandatory retirement by 2009, and several faculty members may opt to stay on beyond age 65.

Student numbers have remained steady overall, with about 960 students in our first-year geology and geography classes (persons in seats) and 35 students (mostly majors) in the 2nd year classes. The strong first-year numbers keep us competitive for scarce Faculty of Science resources. We continue to offer attractive follow-up elective classes at 2nd-year level (*Dinosaurs; Forensic and Medical Geology; Environmental and Resource Geology*). And we are building links with Environmental Programmes at Dalhousie – a separate unit in Science with a particular interest in GIS and remote sensing.

Employment possibilities have been the strongest that anyone can remember, with many petroleum and mining companies knocking on the door. It remains a challenge to encourage and liaise with the companies, as well as to get students to apply in time for industry's deadlines. Our formal linkage with Shell is in its second year: Shell donated \$200k over 3 years for Nova Scotia and Trinidad field programmes, summer student research, and equipment. A large bequest has enabled us to replace most of the 40-year old petrographic microscopes.

St. Mary's University

The Department of Geology at SMU welcomed Jarda Dostal in his new status as Professor Emeritus, and his replacement, Jacob Hanley (PhD U. of Toronto; post-doc in Zurich), who specializes in igneous and hydrothermal processes involved in the petrogenesis of economic deposits. He was successful in acquiring substantial NSERC funding in support of his prolific research program, and so was Jarda, resulting in a 20% increase of our research capacities.

Upgrade of the Science building is nearly completed, and we are now operating in better teaching and research labs than we were previously. In terms of enrollment, our Mineralogy course (entry door to our Geology major) went from ~15 over the past three years to 26 this year, which we interpret as a ~60% increase in enrollment. We believe that the tremendous success of our alumni in the job market over recent years is increasing the interest for Geology in the small community of Halifax, just through word of mouth.

St. Francis Xavier University

The department now has 6 tenured or tenure-track faculty, plus 2 term appointments, almost all with support from NSERC. Enrolment has doubled, with 90% in environmental science. The Environmental Science Research Centre is the largest such centre in the university, and includes graduate (MSc and PhD) students. The department is pushing for a stronger Masters program, with tuition waivers for all MSc students. It is also working on new programs in Environmental Science, Environmental Chemistry and Environmental Physics/Geophysics at the undergraduate level.

Memorial University of Newfoundland

Earth Sciences Dept., News & Developments 2007-08:

- Significant institutional support for infrastructure: \$240K for teaching equipment and minor renovations (with commitment for an additional \$80K in 08-09)
- Seven CREAT staff hires in Earth Sciences (EPMA, TIMS, & five in Land and Seabed Imaging), and reorganization of several laboratories into CREAT (ICPMS, stable isotopes, marine geology, CT tomography, and marine geology geophysics)
- >9% enrollment increase in geology and geophysics majors in 2007, ~130 2nd through 4th year.
- Revision of components undergraduate and graduate programs (e.g., Ph.D. comprehensive examination, B.Sc. Honours thesis)
- New faculty interests and research:
4 CRC Chairs, three Tier II, one Tier I.

New hires (2005-)

Dr. Duncan McIlroy, Canada Research Chair in Petroleum Geology

Dr. Susan Ziegler, Canada Research Chair in Environmental Science

Dr. Sam Bentley, Canada Research Chair in Seabed Processes and Seabed Imaging

Dr. John M. Hanchar, Head of Earth Sciences Department (7/2005-)

Dr. Graham Layne

- Faculty decreased from 34 to 30 in 2007. Three faculty searches currently underway: petroleum geology, applied geophysics, and environmental geochemistry. Fourth position in Hydrogeology awaiting final approval.