CCCESD – REVIEW OF DEPARTMENTS – 2010

Memorial University of Newfoundland Earth Sciences Dept.

Students: Undergraduate students (2nd to 4th year) majoring in Earth Sciences over the last 14 years (counted in fall semester) are shown below. The number of majors was at a high in 1998 (about a dozen years ago, related to Voisey's Bay?), steadily dropped to 2005, and has increased steadily - until this year. In Fall 2010 semester, we are **down 5% from last year** and about on par with two years ago. However we are up 89% over 2005 and 13% over our high of 1998.

The table also includes a compilation of the number of undergraduate students registered in undergraduate Earth Science courses over the last nine years. This number includes students registered in first year and service courses (i.e. "bums in seats"). The number reflects the number of registrants in our total undergraduate course offering. The numbers refer to the number of registrants in the fall semester of each year following the add/drop deadline in September. These numbers show a steady decrease in total undergraduate enrolment from 2002, bottoming out in 2006. There was a steady increase from 2007 on – until this year. This Fall 2010 semester we have a **decrease of 14.5% from last year** in total undergraduate registration. However, we are still up about 20% over 2005/2006. Note that the overall enrolment at MUN has declined over the past few years. That decline has been more obvious across the university but less so in Earth Sciences (given the career options in Newfoundland and Labrador and elsewhere in Canada for geoscientists).

Year	# majors	% change	# registrants	% change	# grad students	
2010	163		671		93	
2009	172	-5%	785	-14.5%	70	+33%
2008	165	-1%	766	-12.4%	67	+39%
2007	112		609	+10.2%	56	+66%
2006	98		554	+21.2%	55	+69%
2005	86	+89%	562	+19.4%	60	+55%
2004	100		648		57	+63%
2003	97		748		49	
2002	126		793	-15%	49	
2001	128				42	+122%
2000	141				38	+145%
1999	131				30	+210%
1998	144	+13%			33	+182%
1997	124				45	

% change is the 2010 value in relation to that particular year

Graduate Students

The number of graduate students shows for the most part a steady increase over the last decade. This year we have 93 graduate students, which is an **increase of 33% over last year** in total graduate registration. This is in part due to new faculty hires over the last five years and the implementation (of the now defunct) SGS Entrance Fellowship Program. Of the 93 students, 26 students are Ph.D. (28%), 67 are M.Sc. students (72%).

Faculty interests and research

29 current faculty members ([including 4 emeritus] and one Honorary Research and two University Research professors), 3 CRC Chairs, 3 Tier II.

New hires (2009-present):

Dr. Tao Cheng, Hydrogeology

Dr. Stephen Piercey, NSERC Altius Associate Industrial Research Chair in Mineral Deposits. This Chair is supported by MUN, Altius, Vale, Research and Development Corporation of Newfoundland & Labrador, and NSERC (effective January 2011). Dr. Piercey was hired by MUN in December 2009 and the A-IRC was recently finalized with NSERC.

Institutional support for infrastructure

$80K for teaching equipment (microscopes & computers)

$140K for minor renovations for classroom reconfiguration and completion of all teaching laboratories to be "smart classrooms"

Challenges

- Problems with School of Graduate studies (SGS) with fellowship support over next few years: MUN SGS has reversed an aggressive positive stance on recruiting and funding new graduate students. The reversal may lead to a large new cost to be carried by the department, paying student salary previously paid by SGS.
- Problems with start up funds for new faculty given the mandate (for direct local economic relevance of all funded research) established by the Research and Development Corporation of Newfoundland & Labrador (the main source of start-up funds for all MUN faculty)
- Replacement of aging equipment given CFI and NSERC funding constraints.

St Francis Xavier University

The Department of Earth Sciences has 7 permanent faculty: one CRC-Associate Professor, five full professors, one Associate and one Assistant Professor. In addition there is one limited term appointments at the rank of Assistant Professor. All fulltime faculty in the department hold NSERC Discovery Grants.

Brendan Murphy was recently awarded a Killam Research Fellowship, "The

Origin of Pangea". He will take up the award in January 2011. As a result of this award, the department is in the process of hiring an additional assistant professor for a three year term to take on Dr. Murphy's teaching duties. Lisa Kellman had her Tier 2 Canada Research Chair renewed for a second term in March 2010. Dr. Kellman's area of research in the second term of the CRC will focus on carbon and nitrogen storage processes in soils, greenhouse gas exchanges from soils, and the response of these systems to global climate change.

Our faculty level of service to the international scientific community remains high with several faculty taking up editorial responsibilities in journals such as GSA Bulletin (Murphy), GroundWater (AE- Ferguson), J. Geophysical Research (AE- Beltrami). Michael Melchin is currently the chair of the International Commission on Stratigraphy's subcomission on Silurian Stratigraphy. Grant Ferguson is currently the president of both the Atlantic Geoscience Society and the International Association of Hydrogeologists Canadian National Chapter. Both Michael Melchin and Alan Anderson currently sit on NSERC review committees.

Graduate studies at the M.Sc. level has been actively promoted in our department in the last few years and all our permanent faculty support currently support graduate students. Further growth will occur over the next several years due to a successful application to NSERCs CREATE program, "Training strategies to meet the challenges imposed by a changing climate: Preparing for societal impacts and adaptation" in collaboration with researchers at Acadia University, Memorial University and UQAM.

Undergraduate enrolment at St. Francis Xavier remains relatively steady. Numbers have dropped in our introductory course during the past five years. However, enrolment in two courses not open two Earth sciences majors on health issues related to the Earth sciences have approximately balanced this decrease. Enrolment in other second year and higher courses have remained relatively constant, with the exception of courses in geochemistry and hydrology, which were flagged as core courses in our new Environmental Sciences degree.

Geology Department, Saint Mary's University

The construction of an Atrium adjacent to the Science Building has recently enhanced life at SMU. This new facility is diminishing the existing problems of space, which were already minimal at SMU. In terms of faculty, we have not been successful at our attempts to increase our allotment by one half position through the hiring of a cross-appointment with our Environmental Studies Program. We still push to hire a hydrogeologist or environmental geochemist to widen our faculty expertise.

In terms of undergraduate enrolment, we have been experiencing a substantial decrease over the last three or four years in our introductory courses, which is starting to translate as a decrease in our number of majors, and we are working on fixing that problem.

In terms of graduate enrolment, the current drop in the job market has allowed the retention of our best students for the first time in years. Therefore, if this trend is general across the field (and I suspect it is), employers will be able to fetch from a better trained cohort of students when the job market picks-up again.

Regarding the concerns over NSERC's recent policy changes, one well-established and productive researcher in our department of five (i.e., 20% of our full-time effectives) was denied renewal of his Discovery Grant.

Earth and Environmental Science, Acadia University

Rob Raeside returned to the head's office after 3½ years as acting dean (and 3½ years of acting chairs in the dept), during which the department expanded from offering degrees only in Geology to include degrees also in Environmental Science, Environmental Geoscience and Applied Geomatics. The resulting complexity, and more than doubling of student numbers, has resulted in significant scheduling and advising issues. This is compounded by the increasing numbers of students transferring from 2-year programs elsewhere (now over half the Geology majors), all of which require individual admission assessment and programming. Enrolments in Geology are up, in Environmental Science are stable.

A major activity this summer and fall has been the review of the Environmental Science program both for accreditation via ECO.ca and the internal Senate-driven process. Preparation of the internal self-study was an interesting exercise, involving a cross-disciplinary committee led by Earth & Environmental Science, but including Biology, Chemistry and Engineering, and attempting a combined internal/external review as a pilot was also frustrating. However, the results appear worthwhile and we anticipate the final report next week.

University of New Brunswick

- LA-ICPMS facility with Resonetics 193nm Excimer laser ablation system coupled to an Agilent 7700x quadrupole ICP-MS opened in Oct. 2010.
- New teaching and office facilities opened as part of the Quartermain Center for Earth Sciences.
- Museum associated with the Quartermain Center opening in Jan. 2011.

- Undergraduate enrolment is stable but lower than we would like at 52. Working on a series of recruitment initiatives with local school districts.
- Graduate enrolment is also stable at 32.
- Budget cuts continue as the university tries to deal with its structural deficit; in year 2 of 3 of a series of extensive cuts. Last year Science fared better than most other faculties – we hope the same will be true this year.
- As part of last year's budget process Science tried to institute a program of lab fees. This was rejected by the provincial government. We will try again this year.
- A hiring freeze is in place throughout UNB for at least the next two years.
- New provincial government has yet to bring down a budget or make any pronouncements on higher education; they remain an unknown quantity.

Université Laval

There has been no personnel change in the department and we remain at 12 faculty members. Student enrolment in our two undergraduate programs, geology and geological engineering, has remained stable with about 100-110 students currently enrolled. The number of students is approximate because last year our administration switched to a new management software, Banner, for the whole university and exact numbers have been difficult to get ever since. Geological engineering remains the most popular undergraduate program with about three quarters of all undergraduate students. In the coming year, we will have to conduct a formal evaluation of our geology program, which is a requirement for all programs at Laval. We have also started to evaluate, and revise, our geological engineering program in preparation for the upcoming changes in the accreditation criteria of the Canadian Engineering Accreditation Board.

At the graduate level, increased funding coming from several new projects has allowed faculty in the department to recruit several new students at the MSc and PhD levels, which is very good news because our number of graduate students had been low in the last few years, which was of course noticed by our Faculty administrators. We are also very proud that one of our PhD students, Leandro Sanchez, has been awarded a prestigious Vanier Canada Graduate Scholarships in May 2010. Among the new projects that have started in the past year, a few ones involve several faculty members and therefore foster collaboration within the department. One group of professors has started investigating mineral carbonation in ultramafic mine waste, in the context of CO2 sequestration. Another group of hydrogeology professors has been awarded two major projects from the Quebec Ministry of the Environment for regional hydrogeological mapping. The two projects will receive funding of about 2 million dollars over the next 3 years and will involve several research associates, graduate students and undergraduate students.

Of note in the past year has been the more frequent presence of several of our faculty members in the local media (newspapers, radio, television). Professors from the department have often been asked to comment on current events that involve geosciences. Among topics covered were : the Haiti earthquake, oil, gas and mineral exploration including controversial exploration projects for uranium on the Quebec North Shore and shale gas in the St-Lawrence Lowlands, asbestos mining, landslides, groundwater resources and even the rescue of the Chilean miners this Fall. Although the media coverage is often related to tragic events, we think that the increased presence of geoscientists in the media might raise their profile and convey to the public the notion that geoscientists are involved in several topics of high societal, economical and environmental relevance, as opposed to not really know what geoscientists do. That in turn might attract more students to our programs.

McGill University, Montreal

John Stix stepped down as Chair following a very successful term, and was replaced by Andrew Hynes. The Department of Earth and Planetary Sciences at McGill has undergone significant rejuvenation over the past few years. We now have 4 Assistant Professors from a full complement of 14 professors. We have been helped enormously by a very significant donation from Bob Wares and Osisko Mining Corporation, which has permitted the endowment of two Osisko-Wares Faculty Scholar positions whose expressed intent is to strengthen the Department's activities in ore-deposits research. We have hired for these positions, and the new hires, together with a spousal hire in geophysics, will bring our faculty complement to 17 by the start of 2012. Our undergraduate enrolments are stable, at ca. 20 students per year, and we have 50 in-residence graduate students. The Earth-System Science undergraduate program, shared among our Department, the Department of Geography and the Department of Atmospheric and Oceanic Sciences has 5 or 6 students in each year.

Carleton University – Department of Earth Sciences

We have 120 undergraduate students in our programs, slightly less than last year because of a computer problem during admission. We are at the limit of our resources - space, teaching and administrative staff, teaching equipment. Physical space for graduate student offices, storage of collections, etc. has become our main problem.

The number of graduate students increased steeply this year with 15 new M.Sc. and 4 new Ph.D. candidates, bringing the total graduate students to 43.

This year, we are introducing the two first years of a new curriculum which puts an emphasis on Earth systems. We are introducing a new Concentration in Resource Economics and a new Minor in Business as well, both in response to feedback from our alumni. Our programs are consistent with the academic requirements for professional accreditation (P.Geo).

Our faculty complement is 10.5. There is likely to be one or two retirements in the near future.

On the research front, all faculty members continue to be active. Most faculty have NSERC funding, and those who do not have been very successful in obtaining funds from other sources.

University of Ottawa

Enrolment:

Undergraduate	GEO	GEO (minor)	EVS
Year 1	31	2	66
Year 2	49	13	69
Year 3	45	10	59
Year 4	60	15	83
Total	185	40	277

Graduate: 51, PDF: 7

Staff: 14 regular full-time professors, 21 adjuncts, and 14 support staff. **Tony Fowler** retired in 2010 and we are presently looking for an igneous petrologist to replace him. We are also looking for a structural geologist to replace **Keith Benn**, who officially left us last February.

Canadian Accelerator Mass Spectrometry Facility: Last year, the U of O applied to CFI's Leading Edge Fund to build a Canadian AMS Facility under the leadership of **Ian Clark**. The application was successful leading to the largest CFI project at the U of O, $21M. The proposal featured an AMS and a series of geochemistry and isotope support labs. Equipment includes:

- New stable Isotope Mass Spec for the G.G. Hatch Lab
- Noble gas Mass Spec for our MAPL Noble Gas Lab
- Electron Microprobe
- Element II magnetic sector ICPMS
- $2M's worth of AMS technology moving from Isotrace
- New radio carbon and radio iodine prep lab

As a result of this application and another successful CFI in photonics, the U of O is planning a new science building to house the CIF projects. Construction should begin in 2010.

Concerns: Space: Enrolment is up and we suffer space shortages at all levels. NSERC funding: continues to be a major problem to some faculty members.

Queen's University, Dept Geological Sciences & Geological Engineering

The Good News:

Undergraduate enrolments continue to rise. In 2nd year, 48 students are registered in our Geological Engineering program, and 40 students in a GEOL concentrator of some type. This is in part due to the revised attractiveness of both programs – in the case of Engineering to remove options, strengthen the core set of courses offered, and provide more technical electives; in the case of Science to ensure that the more intensive programs will meet P.Geo. academic requirements.

Field Education. The Field Education Fund, started 6 years ago by our Geology Council, is now at over $1.5 million. This endowed fund is an essential component of our ability to continue to offer high quality field experiences, and is also a signal to the University Administration that our alumni / employers value the field education component of our program highly. Due to the continuing success of recruitment efforts, we have had to make changes to the field program to add more options in upper years, to try to keep each trip to a maximum capacity of one large coach bus.

Job placement for graduates. Approximately 95% of the 2010 graduates, who were actively seeking employment last year, were offered a job before graduation.

NSERC success. To date, our Department members have all been awarded NSERC Discovery Grant renewals, and all have increased their award significantly. The last hire in our Department was just over 4 years ago, so we do not have any first-time applicants. One member received the added bonus of a Discovery Accelerator Supplement in the last competition.

CFI success. The additional of a new microprobe and an Environmental SEM to the QFIR laboratory facilities is well underway, and is expected to be fully staffed and operational by the new year.

The Bad News:

Number of Full-Time Faculty members is even lower than last year. With 13.8 full time faculty members, once sabbatical leaves and course release for administrative duties / secondments, leaves us with the equivalent of 10.8 teaching members each year.

Domestic graduate student enrolments remain an ongoing challenge with respect to the Reaching Higher program. While we have equal numbers of domestic students as in 2005 (the target year), the balance between M.Sc. and Ph.D. students (who are funded at a higher level) is very different. Therefore, while overall the total number of graduate students has increased, overall in our department, we are now being assigned a budget cut associated with this program.

Lack of replacement of faculty members. The Faculty of Arts and Science has adopted a policy to collapse positions vacated by resignation or retirement to meet the budget cuts. This has ongoing and expected future impacts on the Department, in terms of breadth of subjects covered, and in terms of the FTE number.

Declining funding for TAs. The on-going budget cuts are rapidly eroding TA budgets across the Faculty. The recent vote for unionization of TAs and TFs is expected to stabilize the budget allocation for TA activities.

University of Toronto

As a response to a five year plan submitted by the Department of Geology to the Faculty of Arts and Science (FAS), the Dean recommended that a new department ("Department of Earth Sciences"?) be formed. This would be made of the present Dept. of Geology and members of physical geography and geophysics (from the Departments of Geography and Physics, respectively) who decide to move to the new department. As such, there will be an upcoming growth of the Earth sciences unit by an uncertain number of faculty appointments (up to nine) and some reorganisation of especially our undergraduate program. The FAS planning exercise contained a number of similar amalgamation proposals--some more contentious than others--for which a primary motivation was probably cost savings. (The FAS is struggling with significant financial difficulties, such as a current structural deficit of ~$22M.) Nevertheless, we see the addition of appointments from other departments to a re-constituted Earth sciences unit as a positive outcome.

Our faculty complement remains unchanged from last year except for the departure of Sandy Cruden. His position won't be replaced--owing to the FAS budgetary issues and a somewhat complicated agreement that brought him from UTMississauga to the downtown U. of T. campus several years ago. This leaves for the graduate Dept. of Geology 15 faculty on the St. George campus, 3 at UTM , and 3 at UTScarborough. In addition there are 8 cross appointed faculty from physics, engineering, geography and the Royal Ontario Museum. Replacement of any retirements is uncertain (unlikely?) over the next 4-5 years as the FAS addresses its financial issues.

Undergraduate enrolments continue to rise. Our program enrolments for 2010-2011 are 159--more than triple the amount from 2005 (44 students). We've accommodated the increase despite the same total TA budget from FAS; this has resulted in difficulties with courses with lab components and especially our field schools. Our distribution/"service" teaching remains significant--approximately 1400 students in various first and second year courses. This has been fairly steady as we've reached the course caps associated with room assignments, etc.

Graduate enrolments are fairly steady at about 40 (~75% of which are Ph.D.; the others M.Sc. and M.A.Sc.). Recent fund-raising efforts in the department have been successful in bringing a number of internal graduate scholarships to the department. For example, we were able to provide $211k this year in scholarships from these endowed funds (not including endowed OGSST's). As a result, the RA component of support for grad students--the only component of student funding that supervisors are required to pay--was reduced to ~$7500 for all graduate programs in the department.

Department Earth & Environmental Sciences, University of Waterloo

We have had another year of changes to our roster of Faculty members. Bob Linnen left in July to take up the Hodder Chair in Economic Geology at the University of Western Ontario. Jim Barker (Contaminant Hydrogeology) will retire January 2011. Phillipe van Cappellan from Georgia Tech will be joining the Department in June as a Canada Excellence Research Chair in Ecohydrology.

We launched our new Environmental Science (Geoscience Specialization) program in September. Enrolments in our Earth Sciences and Geological Engineering undergraduate programs have been steadily rising. We have seen around 60% increase which is great news. Grad enrolments continue to remain steady.

Dave Rudolph (Hydrogeology) was recognized with the National Ground Water Association’s 2010 M. King Hubbert Award for major science contributions to the knowledge of groundwater.

Our alumni have been generous to our Earth Sciences Museum this year. They have donated funds to establish the Reimer Family Mineral Gallery, the opening of which was celebrated in September. Early in the new year, we will begin construction of an interactive mining tunnel and display aimed at mineral exploration, exploitation, and rehabilitation. Peter Russell continues his activities for visitors and group tours and these new displays are great new attractions.

It has been a year of frozen budgets. We continue to be “encouraged” to grow our enrolments. All in all, despite budget challenges, it has been a good year.

School of Geography & Earth Science, McMaster University, Hamilton
***Faculty/staffing*:** The School is in process of hiring a cold region hydrology faculty member at assistant or associate level starting July 2011. Interviews will be completed by first week of November. School has also hired a tenure-track geochemistry faculty member – Dr. Sang-Tae Kim at the assistant professor level who joined School in January 2010. We are also hoping to convert Dr. Ulrich Riller's Contractually Limited Appointment (CLA) position to tenure-track. The McMaster Centre for Climate Change, spearheaded by Dr. Altaf Arain, was established on November 2009. Dr. Carolyn Eyles received 2009 3M National Teaching Fellowship. Dr. Pavlos Kanaroglou is in third year of his 5-year tenure as the Director of School. On October 20th, 2010, McMaster University celebrated a donation of $1M to SGES from Mrs. Susan Cunningham, Senior Vice President, Exploration, Noble Energy Inc., to be used towards the establishment of an Endowed Chair in Earth Sciences. Dr. Luc Bernier and Dr. Mike Mercier, both working as CLAs has been recommended to be appointed as teaching professor starting of July 1, 2011.
Undergraduate matters: The total number of students taught in SGES courses during the 2009-10 academic session was 11402, a 5% reduction from the previous year. Approximately 30% were enrolled in service courses offered to the university community by SGES. 7930 were registered in core, program courses and of these, 1398 students were registered in the three Level I Environmental/Earth Science courses (1A03, 1B03, 1G03).

Students now have the option of entering the Environmental & Earth Science program at Level I (previously all McMaster science students entered an undifferentiated Science I program). We currently have 105 students in this program at Level I (an increase of 16 from last year). Students may then select one of the three Honours B.Sc. programs offered in Levels II through IV: Earth & Environmental Sciences (57 students), Biology & Environmental Sciences (27 students), Environmental Sciences (40 students in total). The latter two programs were introduced in 2008-9. We also offer a 3-year B.Sc. in Environmental Sciences with a current enrolment of 48 students.

In total we have 174 students registered in B.Sc. programs (Level II and above), an increase of 30 students from the previous year. We have also introduced a new Honours B.Sc. program in Geography & Environmental Sciences in 2009-10; it is expected to grow within the next five years to an overall enrolment of 45-50 students.
Graduate matters: SGES has 77 full-time (39 PhD, 22 M.Sc., 19 M.A.) and 10 part-time graduate students. Approximately 50% of are supported by external (NSERC, SSHERC, OGS) scholarships. In 2011, we will introduce 7 new core courses to streamline graduate course offerings. Core course(s) will be mandatory for graduate students enrolled that particular stream.

- Advanced Methods in Sedimentology and Stratigraphic Analysis
- Hard Rocks
- Adv. Env'tal Geochemistry
- Health Geographies
- Advanced Hydrology
- Spatial Analysis
- Social Geographies

Two new graduate courses were introduced: Advanced Structural (Dr. Riller), Numerical Modelling in Global Climatology (Dr. Baker).
SGES Activities: The SGES annual retreat in 2008 created a document outlining specific procedures for the handling of CPM – these procedures were put into practice early in 2009. The 2009 retreat addressed teaching loads and graduate course offerings. Policies and Procedures document was revised following retreat discussions/ recommendations and posted on-line at SGES web page. We hired a new teaching support technician (Alyson Brown) in September 2010.

Brock University, Department of Earth Sciences. by Martin J. Head, Professor and Chair
We presently have a faculty complement of 10, and five staff positions. Two faculty are in administrative positions (Profs. Rick Cheel and Greg Finn) and another (Dr. Dale Hess) is an ILTA covering temporarily for one of these positions (Prof. Greg Finn). Dr Mariek Schmidt, an igneous petrologist and volcanologist from the Smithsonian Institution, has been appointed this year as a tenure-stream assistant professor. She joined us last year as a post-doc, her tenure-stream position having been delayed by one year for budgetary reasons.

We have lost two technical support positions, one to retirement and another to long-term disability. At least one of these two positions will not be replaced.

Departmental enrolments in undergraduate majors are slightly down from last year (84 in 2009, and 80 so far in 2010) but have nonetheless more than doubled in the past 12 years. Graduate numbers have risen from three Master's students in 2005 to 19 in 2008, although numbers have declined to 10 in the past year owing to the funding shortfall.

Our Faculty of Mathematics and Science received a 2% cut to its budget this year, mostly absorbed through staff/faculty retirements and by increasing revenue streams. This adds to 4.5% cuts last year. We do not know if there will be cuts next year.

Eight of our 10 faculty members remain research active, with five holding NSERC discovery grants. Two faculty members are up for renewal this year. Prof. Uwe Brand continues as a Brock University Chancellor's Chair in Research Excellence for a third (final) year. This is also Martin Head's final year as Chair, after which he will begin a six-month sabbatical.

Earth Sciences Department, University of Western Ontario

This past year saw some budget stability after massive cuts in 2009-10, and 2010-11. We are asked to model 3% "Initial Budgetary Adjustments" every year. Any growth comes from external funding. Technical staff complement has been severely reduced, most of our staff members are now on soft money. Research productivity is very high, with significant CFI funding in place, and 4 CRC/IRC positions. Graduate student enrolment is at record highs, with 106 registered students (more than 4 per faculty member). Undergraduate enrolment is steady at approximately 80 students in years 2, 3 and 4. Efforts to grow our undergraduate enrolment are difficult due to the prominence of medical sciences at Western - almost all science students at Western are there to try to become doctors!

Two new programs are well underway - our undergraduate program for professional registration is now taking students, and our Accelerated MSc options in Geophysics and in Geology are in their second year with 10 students. Further work has been done to streamline these programs and make them as accessible as possible. By September 2011 a new Dual Law / Masters Degree in Geology/Geophysics will be taking students.

Development and External Relations continue to play a large role in the Department, with the appointment recently of two named chairs in Petroleum Geology and in Economic Geology.

Faculty Complement*:* 24 full-time faculty, all but one tenured or tenure-track
2 CRC's (one Tier 1, one Tier 2), 2 IRC's, 2 named Chairs; 1 Active CRC search (Stable Isotope Geoscience)
Recent hires: Burns Cheadle (Bell Chair in Petroleum Geology)
Bob Linnen (Hodder Chair in Economic Geology)
Gord Osinski (IRC in Planetary Geoscience)

Staff**:** 3 Admin. (Admin Officer, Finance Officer, Academic Coordinator)
5 technical staff (Machinist, 2 Electronics Tech, Thin Section Tech, LSIS Lab manager)
11 Further staff supported on research funding
10 PDFs and/or Research Associates

Research**:** Earth & Planetary Systems; Resource Geoscience; Tectonic Processes & Natural Hazards; Earth Evolution: Surface, Life and Climate

Students**:** Graduate Enrolment 106 (up from 55 in 2007-08); Undergraduate enrolment approximately 80

Budget**:** 2009-10 6.5% cut; 2010-11 5% cut; (cuts achieved through collapse of one open position plus planned retirements) 2011-12 New budget cycle, anticipated normal 3% "Initial Budgetary Adjustment"

Lakehead University Department of Geology

At Lakehead, the department has three undergraduate programs - Geology, Environmental Science (Earth Science) and Water Resource Science - with more than 100 majors. Our M.Sc. Geology program currently has 17 students. We have six regular faculty, although one is on three-quarters workload, and sessional lecturers for two courses. We have one full-time and one half-time technician and share an administrative assistant with Physics.

Lakehead has a new president as of July 1st, who has so far not made major changes. Administration continues to plead poverty, although enrolment projections have been exceeded in the past two years. Hence, a one week shut-down was held last December, and a 6% funding decrease was imposed on each faculty. Fortunately, there was a minimal loss from Geology in view of our large and increased enrolment.

Large enrolment increases in courses above first year are placing a strain on faculty and facilities, and we are hopeful of maintaining if not increasing our faculty complement even under possible continuing financial pressures. In spite of heavy teaching loads, the department is maintaining significant research output. Four faculty members, as well as an emeritus professor, hold NSERC Discovery Grants, and various research projects are supported by industry.

Department of Geological Sciences, University of Manitoba

1. Personnel. We have two faculty members retiring in 2010, in the areas of geomorphology-climate change and environmental geochemistry. There is to be no immediate direct replacement of these faculty and their associated salary lines formed a significant component of funding cuts to the Faculty and Department.

We have been fortunate to be able to address the situation through other programs. The Faculty of Environment, Earth, and Resources, of which Geological Sciences is a unit, was awarded a CERC in Arctic Geomicrobiology and Climate Change. Three new faculty members are being recruited to support the CERC program with expertise in Arctic System Sciences and with emphasis on how sea ice relates to areas of geomicrobiology, low temperature isotope systematics, biogeochemistry, physical oceanography or biological oceanography. The chair and/or one or more of the faculty members will hold appointments in the Department of Geological Sciences. The Department will also receive a junior chair in Watershed Hydrology to be funded initially for five years by the Province of Manitoba as part of a commitment to restore the health of Lake Winnipeg.

2. Student numbers. Undergraduate student numbers remain high, particularly in the Geology programs. We are close to a cap defined by two lab sessions per course, in courses involving microscope work, geophysical equipment etc. The

number of students in our graduate program remains small but stable and we are continuing to examine methods for increasing the numbers.

3. Centenary. The Department of Geological Sciences, the oldest geoscience department in western Canada, is celebrating its centenary in 2010. We have had a number of events including a reunion weekend in August, invited lectures, and a special session at GeoCanada 2010. We have also raised funds for a mosaic map of the geology of Manitoba and for a Department history wall that was unveiled at the reunion weekend.

4. Other events. The Department has started work on hosting the 2013 GAC-MAC meeting.

Department of Geology, University of Regina

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).

The Department has 7 faculty members, including 3 full professors, 3 associate professors, and one assistant professor. Our programs have been assisted by two fulltime Geology Lab Instructors and 7 adjunct professors.

Our student numbers remained high in 2009 with total of 108 Geology undergraduate majors. Most of our 2nd, 3rd and 4th year classes were at capacity or overloaded. The Department had 16 graduate students: 15 Masters and 1 PhD. In addition, we hosted 1 PDF and 6 visiting scientists in 2009.

The PhD program in Geology has been approved in 2010. The Department is in process to develop a one year course-based MSc program in Petroleum Geology. The Department also offers a co-op and internship program for Geology majors.

The department supports 3 research labs: the "Geofluids Characterization and Modeling Laboratory", the "Geomodeling and GIS Laboratory" and the "Scanning Electron Microscope Laboratory".

University of Saskatchewan

We filled a vacancy last year in structural geology/tectonics and another offer is currently waiting for the Provosts signature. This will bring our complement to 16.

We continue to experience difficulty with overcrowding. This is a problem in second year classes and especially with the field school that students do between 2nd and 3rd year. We have limited all second year classes to the number of seats in the assigned room and most of them are full. We have limited the field school to twenty people. As it is now offered only once a year, this means our future convocation will be twenty per year plus the few who find a field school elsewhere. For advice, can other heads tell me how often their faculty are asked to do a field school and if there is any extra pay for doing a field school?

University of Calgary

- Enrolments in undergraduate and graduate programs in the Department of Geoscience continue to surge, with nearly 200 graduate students and just over 500 undergraduate majors currently registered.
- There have been no new faculty appointments in the past year, but the Department has recently been allocated a tier II CRC in "Arctic Basin Dynamics". A faculty search is currently underway.
- On March 26, 2010 the University of Calgary signed a Memorandum of Understanding with NRCan to create the "Calgary Geoscience Research Centre", a joint initiative of the Department of Geoscience and GSC Calgary. The Institute for Sustainable Energy, Environment and Economy (ISEEE) and the Arctic Institute of North America are also partners.
- In late 2010, Carbon Management Canada (www.carbonmanagement.ca/) was formed as a "national network of university, industry and government partners … pursuing innovative ways to develop the technologies, people and policies to reduce carbon emissions by 40% of the nation's 2050 reduction targets." CMC is hosted in the Department of Geoscience.
- In April 2010 a new Geoscience Chapter was created within the University of Calgary's Alumni Association. The Chapter has been very active in helping to sponsor student events, such as the 3rd and 4th year networking dinner on October 20, 2010.
- The University of Calgary's new downtown campus building is opening in Fall 2010. The Department of Geoscience is holding an Open House and Current Research Symposium at the downtown campus on November 25, 2010.
- Construction is nearly complete on a new campus building, called the "Energy, Environment and Experiential Learning" building. The EEEL building will house new teaching facilities including a state-of-the-art core laboratory and a digital microscopy laboratory.

Simon Fraser University, Department of Earth Sciences, October, 2010

This year, the department operated in a steady and positive manner with several promotions, awards and renewals. We had two promotions to Associate Professor (Gwenn Flowers, Dan Gibson) and one to Professor (Dan Marshall). Both of our CRCs (John Clague, Natural Hazards, tier 1; Gwenn Flowers,

Glaciology, tier 2) were renewed by NSERC, and our Endowed Chair in Resource Geoscience and Geotechnics (Doug Stead) was also renewed by the university. Ten of our faculty and graduate students won significant awards, including Dan Marshall (Howard Street Robinson Lecturership from the GAC), Gwenn Flowers (Young Scientist award from the CGU), and Derek Thorkelson and co-authors (Barlow Memorial Medal from the CIM). Diana Allen was appointed Co-chair of the Geosciences Evaluation Group (NSERC). The only negative surprise came from NSERC, which decided not to fund one of our very good younger faculty (first renewal); we are anticipating a positive result in the current competition.

This was our first year after the opening of SFU's new Faculty of Environment, which is fundamentally the Department of Geography combined with the School of Resource and Environmental Management (a graduate program). Our department opted not to join the new faculty and instead to remain in the Faculty of Science. We are in the process of some joint programming (Water Science) with the Faculty of Environment, and anticipate the approval of a Joint Major with the Department of Chemistry.

We are preparing for a seven-year review that will take place in the spring. The review involves (a) constructing a document that summarizes our department's position and achievements, (b) an independent review by a panel of three senior faculty from non-BC universities, and (c) adoption of an action plan based on the review, and dialogue between the university and department. We consider our department to be very healthy, although we would like to increase our undergraduate enrolment which currently sits at ~70 students.

Earth and Environmental Sciences, UBC Okanagan

It was a remarkable year for EESc at UBC Okanagan. Construction of the Laser Ablation – Inductively-Coupled Plasma – Mass Spectrometry lab donated by Dr. Charles Fipke, was finally (mostly) finished in November, 2009. The lab contains two ICP-MSs and a state-of-the-art EXCIMER laser system. Our new technician (Bert Mueller) worked with facilities and the instrument manufacturer's to eliminate installation and construction bugs over the following 9 months. We are up and running with at least one paper being prepared for publication (metals in insect urine) and perhaps 10 projects underway. We are looking for collaborators (and/or their graduate students) with established research productivity, who are interested in utilizing the facility and foresee 20+ projects moving through the lab by the fall of 2011. Fees, at least for now, will be very reasonable as we attempt to establish the capabilities of the lab. Impressed with the progress, Dr. Fipke made another ~$500,000.00 instrument contribution this month and there is talk of even more equipment for FiLTER (Fipke Laboratory for Trace Element Research) in the near future. His goal is create the best micro-analytical geochemical laboratory in Canada.

Undergraduate enrolment is about 75 students in 2nd, 3rd and 4th years, but we presently have 20 students in graduate studies, and had 18 graduates (undergraduate and graduate) in May. This teaching load is being carried by 8 bodies, two with departmental cross-appointments and two with partial teaching loads (due to being research chairs) for an effective teaching compliment of only 5.5 people. Grant applications could increase the research technician count to two, but we are hoping that based on the remarkable productivity of the "department" based on bums-in-seats, undergraduate graduates, number of graduate students, research donations, research publications, etc. we will finally get to add a scientist (and teaching lab space) to the department. Demand for "geology" courses that permit APEGBC registration, and inquiries from our major supporter for students to work on ore deposit topics, indicate that a new person would have economic geology and petrology strengths. That said we remain committed to the Earth and Environmental direction and philosophy of the department.

UBC-Vancouver:

The Department of Earth and Ocean Sciences at UBC Vancouver has approximately 45 full time faculty, 50 postdocs and research associates, 170 graduate students, and 400 majors and honours undergraduate students. Number of faculty, postdocs, research associates and graduate students have not changed significantly in the past year or two. The one recent faculty addition is Eldad Haber who was hired into the $2M NSERC Industrial Research Chair in Computational Geosciences. Industry sponsors for the IRC were Barrick, Newmont, Teck, Vale, and Xstrata. Undergraduate majors/honours student numbers are up about 10% this year. Of our seven undergraduate programs, two (Geological Engineering and Environmental Sciences) are at capacity and are limiting intake. The other five programs (Atmospheric Science, Earth and Ocean Sciences, Geological Sciences, Geophysics, Oceanography) can accommodate growth. The biggest changes to our undergraduate programs in the past year were the re-instatement of majors programs in Oceanography and Geophysics, which have been Honours-only programs in recent years. The Majors programs were re-introduced to increase the profile and attract more students into these programs. These changes are in part a response to the change in budget model at UBC-Vancouver which now allocates budgets at the Faculty level on the basis of undergraduate and graduate student enrolment and research grant intake.

In the past year, total annual research funding has hit $10Mill for the first time in the history of the Department. Fundraising for the new Earth Systems

Science Building is about 85% towards the goal of $75 Million. Commencement of construction, coincident with a major renovation in the Biosciences complex, necessitated that approximately half of the labs and faculty in EOS be moved to temporary space. The former EOS East building was demolished in June and construction of the new ESSB commenced in July. Occupation of the ESSB is scheduled for mid 2012. At that time EOS will be housed in a single three-building complex consisting of the new building plus the existing EOS Main and EOS South buildings. The ESSB will also the Department of Statistics, the Pacific Institute of Math, and Office of the Dean of Science, and three lecture theatres. The Pacific Museum of the Earth will expand into the new building while retaining its footprint in the EOS Main building. Linkages with the Beaty Biodiversity Museum will further enhance the visibility of the museum. Construction will begin in January 2011 for a CFI-funded $7.5 Million expansion of the Pacific Centre for Isotopic and Geochemical Research, including an interface with the Pacific Museum of the Earth.

School of Earth and Ocean Sciences, University of Victoria

The School of Earth and Ocean Sciences is an interdisciplinary unit with research pillars in the solid earth, oceanography and climate/atmospheric science. Our faculty complement has remained steady in the past two years, with 22 faculty, seven of whom are jointly appointed. We are currently interviewing for a faculty position in Earth System Evolution (vacant position). Our funding has been steady for the past few years, but we are unfortunately entering into a budget reduction period, likely at 5% over the next three years.

Our undergraduate enrollments continue to increase, up ~22% over the past two years. This increase reflects in part a new course in Natural Hazards aimed at non-science majors. The increased enrollment, while great from the VP's perspective, is posing challenges for field training, as the logistics of leading fieldtrips for courses with large numbers are not easy. These numbers also pose a challenge for offering field school – there's only so much room in the field area. The School is also challenged as the proportion of faculty who are able to teach field-based classes is small. Our graduate student enrollment is also up ~15% (80 students), with growth in all areas of our department, especially geology and oceanography. A continuing challenge faced by the School is the limited technical support provided by the University.