CCCESD – REVIEW OF DEPARTMENTS, 2009

SIMON FRASER UNIVERSITY – DEPARTMENT OF EARTH SCIENCES

Over the past year, Earth Sciences at SFU has undergone a moderate increase in enrolment of both undergraduate and graduate students. We currently have >70 declared majors and approximately 50 graduate students. Our second-year field school had 27 students in it, 23 of which were declared majors. Our undergraduate program consists of two main streams, Geology and Environmental Geoscience, with approximately equal enrolments. Both streams meet the academic requirements for registration in our Provincial professional association, APEGBC.

We currently have 16 faculty which are spread rather evenly among instructional faculty, assistant professors, associate professors and professors. Earlier this year we lost one faculty position through an early retirement program. The program is designed to allow the university to downsize slightly in the face of financial pressures, and therefore we have not been given permission to hire a replacement. However, we expect to be given permission to hire a new bedrock-oriented geoscientist within three years.

Our biggest challenge this year, and last, was to remain in the Faculty of Science. With the opening of a new Faculty of Environment this fall, we have faced considerable pressure from the university brass to move into this new Faculty but have successfully resisted. The main reason for our preference to remain in Science is the likelihood that our program would be gradually be forced to emphasize our environmental side, upsetting the fine balance that we now enjoy between the traditional and environmental parts of our program. With so many of our graduates gaining employment in the mineral exploration and oil and gas sectors (as well as with environmental consulting firms) we felt that it was essential to remain in Science where we will be able to retain greater control over our academic direction.

UBC OKANAGAN 2009.

There have been no faculty changes at UBC Okanagan over the past year but Bert Mueller started work as our laser ablation ICP MS (LA ICP MS) technician in July. We are in the final stages of submitting a NSERC industrial research chair proposal. Should this proposal be successful the person will head up the new Fipke Laser Ablation lab. The department presently has 8 bodies in it but some are cross-listed with biology and geography for an effective body count of 5.5. Two faculty (Greenough and Wei) were on sabbatical but we have faced challenges replacing those that leave. Greenough's fall courses were cancelled and moved to the winter (2010) in hopes that we will find a replacement.

The Canadian Journal of Earth Sciences office at UBC Okanagan, with the support of the GAC and help of NRC Press, saw the first awarding of the CJES Best Paper Award. Construction of our new ~3000 square foot LA ICP MS lab supported by Charles Fipke, was finished (finally) in October. Instrument installation (Photon Machines EXCIMER laser, Thermo Element XR ICP MS, Thermo X-Series ICP MS, and Thermo iCAP ICP OES) will be completed on November 20, 2009. We have a BCKDF application in to garner operating funds for the facility. We hosted the Cordilleran-section GSA Meeting at UBC Okanagan between May 7 and May 9.

The EESc degree program regulations received an overhaul during the year and we offered Environmental Sciences (EESc 101) for the first time last year. Overall first-year enrolments increased by about 70 percent, and enrolment in Introductory Earth Sciences (Geology = EESc 111) was not substantially impacted. We graduated 8 students from the EESc program and 2 from the FWSc program in the summer of 2009. There were 60 declared majors in the 2nd, 3rd and 4th years of our EESc program (as of May, 2009) and 10 majors in FWSc. The EESc and FWSC "clubs" have over 100 students signed up as members this fall (2009) indicating that our majors for this year exceed 100. These numbers suggest a nearly 10-fold increase in undergraduate majors over the past five years! We presently have 15 students enrolled in graduate programs and two completed their degrees over the previous 12 months.

MOUNT ROYAL UNIVERSITY, CALGARY, DEPT EARTH SCIENCES

In September 2009 the Government of Alberta renamed our institution as 'Mount Royal University' and in late October AUCC announced that Mount Royal University had become its 95th member institution. The change from college to university had started in the mid 1980s!

50 qualified students from the first year of the General Science program applied to enter the Geology major program and 25 were admitted with a GPA range of 2.6-3.8. We now have 8FT faculty (5 geologists and 3 geographers), 10 PT faculty and one Instructional Assistant. We have initial approval this year for four new FT positions and one additional Instructional Assistant but recent budget constraints may reduce these numbers.

The first budget cuts in many years are being planned for 2010-11 and 2011-12 Other current issues include manpower to teach upper level lab courses and field schools without graduate student TAs and lack of research facilities, space and equipment.

UNIVERSITY OF CALGARY

The Department of Geoscience at the University of Calgary is one of the largest Earth Science departments in Canada, with 39 full-time academic staff, 17 support staff, 24 adjunct professors and approximately 45 full-time research staff funded through external grants. With more than 500 undergraduate majors

and 180 current graduate students, the Department trains approximately 15% of geoscience highly qualified personnel (HQP) nationally. Renaming of the department in 2007, from Geology and Geophysics to Geoscience, represents an important and particularly visible change. The new name is more inclusive, reflecting the breadth of multi-disciplinary teaching and research that occurs within our academic unit. The department's mission is to be an internationally recognized top-tier research department in Energy Geoscience, with complementary strengths in solid Earth processes, subsurface imaging, environmental and arctic studies, while providing comprehensive student-centred programs recognized for excellence world-wide.

Three new faculty appointments have been made in the past year. In January 2009, Dr. Bernhard Guest was appointed as an Assistant Professor in Structural Geology. Bernard is fundamentally a field geologist interested in the broad range of crustal processes involved in creating and destroying continents. He is particularly interested in studying the link between records of deformation preserved in orogens and basins, versus deformational processes that can be observed with modern geodetic networks. In July, Dr. Chris Clarkson was appointed at the rank of Full Professor as the inaugural EnCana Chair in Unconventional Gas Research. Chris has significant industry experience, and his work focuses on the physics of gas storage and transport in coalbed methane and shale reservoirs and the application of production data analysis/reservoir simulation to optimize gas recovery and well performance. He is currently Distinguished Lecturer for the Society of Petroleum Engineers (SPE). In September 2009, Dr. Kris Innanen was appointed as Associate Professor in Applied Geophysics. Kris specializes in signal processing and inversion techniques, applicable to seismic exploration and reservoir characterization.

Construction is currently taking place on a new campus building, called the "Energy, Environment and Experiential Learning" building. When complete in 2010, the EEEL building will house new teaching facilities including a state-of-the-art core laboratory and a digital microscopy laboratory. The department is engaged in discussions with the Geological Survey of Canada to promote closer links, and will be prominent in the UofC's new downtown campus building set to open in Fall 2010.

DEPARTMENT OF GEOLOGICAL SCIENCES, UNIVERSITY OF SASKATCHEWAN - Kevin Ansdell

- Kyle Larson (PhD, Queen's 2009) joined us in May as new Assistant Professor in Tectonics
- Faculty complement now consists of 2 Canada Research Chairs, 2 endowed research chairs, and 12 regular faculty (Acting Associate VP Research, 9 Full Professors, 1 Associate Professor, 1 Assistant Professor), 1 Term Assistant Professor, 4 active Emeritus Professors, and 10 Adjunct Faculty (4 very active)
- Undergraduate programs in Geology, Geophysics, and Environmental Earth Sciences meet new CGSB requirements, which APEGS follows, whereas Paleobiology does not.
- 45 B.Sc. graduates in Spring and Fall convocation, up from 29 in 2008, including 5 in Geophysics and 1 in Paleobiology,
- However, we now have over 200 declared majors in the department, up from 76 in 2006, which is causing a strain on resources, particularly in labs (e.g., 2009-10 Term 1 Mineralogy – 90 students for the 3rd year in a row), and field schools. The Dept wrote a position paper to the College and we have hired a new ASPA Lab Demonstrator and we hope to convert the Term to Tenure-Track. Department permission required for all courses, which is an administrative challenge.

TABLE 1. Total 3cu enrolment in geoscience courses in Dept. Geol Sci

	01/02	02/03	03/04	04/05	05/06	06/07	07/08	08/09
1st yr	**998**	**975**	**1025**	**1161**	**1216**	**1273**	**1268**	**1346**
2nd yr	289	311	321	389	461	553	659	647
3rd/4th yr	363	294	292	308	312	394	453	453
Total senior	**652**	**605**	**613**	**697**	**773**	**947**	**1112**	**1100**
Major					87	85	144	207

Senior level are 2nd, 3rd and 4th yr courses. Most 3rd and 4th yr courses offered in alternate years.

- Graduate student population steady, 37 graduate students, including 13 PhD and 17 women.
- Research funding over the last year has brought in $2.59 million to the Department from NSERC, CIHR, SSHRC, NSF, European Science Foundation, Canadian Foundation for Climate and Atmospheric Science, Sask. Government, and industry (Cameco, SK Potash Producers, Talisman, and through NSERC-CRD).
- The ***Ore Gangue Alumni Fund*** was established by alumni in Calgary, with the aim of funding student scholarships. ***Shell Canada***, ***Cameco*** and ***Areva*** provide support for entrance and continuing scholarships, field schools, and conference attendance. New undergraduate scholarships funded by ***Michaelangelo Memorials***, and ***CanAlaska Uranium Ltd***.
- Ore Gangue undergraduate society celebrated 75 years in March 2009. 150 alumni attended, and Catriona LeMay Doan (speed skater, and sister of Ore Gangue ex-President) was guest speaker.
- Budget reduction – 3% in 2009-2010 from non-salary budget, being used to support the salary of new ASPA Lab Demonstrator. 2% expected in both 2010-11, and 2011-12.

DEPARTMENT OF GEOLOGY, UNIVERSITY OF REGINA, 2008-2009

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 of Geology has 8 tenured and tenure track faculty members: 3 full professors, 4 Associate professors, and one Lecturer. Our programs have been assisted by two fulltime Geology Lab Instructors and 7 adjunct professors.

Our student numbers remained high in 2009. We had over 100 Geology majors joint Geol/Geog BSc students. Most of our 2nd, 3rd and 4th year classes were at or over capacity. The Department had 16 graduate students: 15 Masters and 1 PhD. In addition, we hosted 1 PDF and 6 visiting scientists in 2009.

We are in the final approval stage to formalize a PhD program. The Department has received approval to develop a one year course-based MSc program in Petroleum Geology. The Department is developing 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".

The department organized the first international geological field trip to Colombia for senior students in February 2009. Four 3rd and 4th year Geology majors participated in a students' exchange program with the Oil and Gas University of Ivano-Frankivsk in the Ukraine in May 2009.

2009 statistic numbers:

1) Total number of undergraduate in Geology and joint Geol/Geog 123, an increase of 11 percent compared to year 2008.

2) Numbers in 2nd, 3rd and 4th year; 2nd year: 24; 3rd year: 30; 4th year: 26

3) Number of completed undergraduate, Masters, and PhD theses in 2009. Undergrad: 15; Masters:15; PhD: 1

DEPARTMENT OF GEOLOGICAL SCIENCES, UNIVERSITY OF MANITOBA

1. **Personnel.** No major changes of personnel in the last year. Ian Ferguson took over as Head on July 1st after Bill Last was Acting Head for a year.
2. **Student numbers**. Enrolment in Fall Term undergraduate courses increased 66% relative to 2008-2009. The change was driven by a 200% increase in first-year course enrolment but there were also increases in senior courses, causing us to require additional laboratory sections and/or microscope resources. The increases are almost entirely in the Geology program and numbers in the Geophysics program remain low. The number of students in our graduate programs remains small but stable and we are examining methods for increasing the numbers.

   The increase in first-year enrolment is attributed to rebranding of the first year courses, removal of a Dynamic Earth prerequisite from the other first year courses so that they could be taken in any order, and addition of a written component to Natural Disasters and Global Change so that it satisfied a university undergraduate writing requirement.
3. **Program Reviews.** In 2008 our graduate program underwent full review. The outcome was positive for the program and yielded several valuable recommendations including reduction of mid-degree examination requirements in the Ph.D. program and raising the national profile of our more junior faculty members. An internal review of the undergraduate programs in the Department commenced last month and will lead to a full review next year.
4. **Laboratories.** Additions to the Department's analytical laboratories over the last two years include stable isotope facilities established by A. Bekker.
5. **Financial challenges.** The University is facing major financial challenge driven by problems with its pension funds, economic downturn, and other factors. Academic units have been asked to find 5% "flexibility" in their budgets. The University has initiated two projects aimed at eliminating overlap in service provision and academic resources. We anticipate significant challenges in maintaining our present numbers of staff if departures or retirements occur.
6. **Centenary.** The Department of Geological Sciences, the oldest geoscience department in western Canada, is celebrating its centenary in 2010. We have a number of events and projects planned including a reunion weekend, invited lectures, and a special session at GeoCanada 2010. We also plan to develop several physical displays: a mosaic map of the geology of Manitoba, a history wall, and, over the longer term, a geoscape park.

LAKEHEAD UNIVERSITY, DEPARTMENT OF GEOLOGY

The Department has experienced continuing strong enrollment in our programs. Current numbers are as follows:

Geology	63
Environmental Studies (Earth Science)	14
Water Resource Science	31
M.Sc. Geology	13

With our small faculty complement of six and one and one-half on sabbatical, we find ourselves to be very busy. We have a sessional appointment for one and one-half full courses and one technician who is entirely occupied in support of teaching and research. The university currently has a hiring freeze for academic appointments, although we hope that future retirements will be replaced, even if faculty numbers are not increased.

The university administration perceives that there is a financial crisis pending and, in the wake of this, has put forward a strategic plan that many

faculty members find has some disturbing features, especially restrictions on class size. This aspect of the plan is damaging to relatively small departments whose upper-division courses generally do not attract outside enrollment and have small numbers. Such courses must be justified as necessary for completion of programs, apparently annually.

On a happier note, most of our students found summer work in spite of the recession, and last year's graduates have either found employment or have continued with graduate work.

UNIVERSITY OF WINDSOR – DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES

Iain Samson is Acting Head for the 2009-2010 academic year as Ihsan Al-Aasm is on sabbatical. The department's faculty and staff complement is stable for the moment. However, the University has a deficit and is cutting budgets by ~3.5 % last year, this year, and next year. Enrolments in Geology are down, but in Environmental Science are up. Graduate student numbers are stable. The department is consolidating its programs into two: Environmental Science and Geology. Because the environmental science program is run out of earth and environmental sciences, the environmental science program has a strong geoscience component, and this program is likely to be our focus for the foreseeable future. We survived the first round of the new NSERC model - nobody lost their grant and one increased substantially.

UNIVERSITY OF WESTERN ONTARIO, DEPARTMENT OF EARTH SCIENCES

In the wake of the world wide economic crisis in late 2008, Western announced major shortfalls in "non-endowed investments". The University responded rapidly, announcing major budget cuts for all units. Significant staff layoffs University-wide followed in the spring of 2009. The Department of Earth Sciences had a 5% budget cut assessed; this was primarily absorbed by giving up our open position in Igneous Petrology, and moving one staff position onto research funds. The crunch is not over - we are currently being asked to model a further 5% cut, and further staff reductions are in the cards. Beyond these unanticipated cuts, we have a UFA, a CRC Tier II position and an IRC position all reaching the end of their terms. These positions will add an additional unsustainable load on the department budget by 2012.

On the positive side, the Department:

- Increased graduate student enrollment from 66 to 95
- Had a steady undergraduate enrollment close to 80
- Introduced new Honours Degree programs for Professional Registration
- Introduced new Accelerated (Course-based) MSc programs in both Geology and Geophysics
- Appointed Burns Cheadle to the Bill Bell Chair in Petroleum Geology
- Is in the process of appointing the Robert W. Hodder Chair in Economic Geology
- Appointed John Armstrong of Stornoway Diamonds to the one-year Richard W. Hutchinson Visting Industry Professor
- Received $300k in funding for our Field Studies program

Our department now numbers 24 full-time faculty, with research themes in Earth and Planetary Science, Resource Geology, Earth and Climate Evolution, and Tectonic Processes and Natural Hazards.

DEPARTMENT OF EARTH AND ENVIRONMENTAL SCIENCES, UNIVERSITY OF WATERLOO

Alan Morgan (Quaternary geology) and Jim Sloan (Atmospheric Chemistry) retired this year. Despite losing two professors this year, we hope to gain three more shortly. We are moving forward with an NSERC IRC in Applied Tectonics and are searching for a candidate for an NSERC IRC in Contaminant Hydrogeology. Should we be successful with an application for a Canada Excellence Research Chair in Ecohydrology, the department will serve as home base to the chair holder. We are most fortunate to have the opportunity for these three research chairs given the tight fiscal position of the university this past year.

Enrollments in our undergraduate courses continue to climb to record numbers. Our China "2 + 2 program" drew 18 international students, in addition to the other Earth Sciences students coming in this year. Graduate enrollments have remained steady (around 115) with Earth and Environmental Sciences maintaining the highest graduate student to professor ratio in the Faculty of Science. Geological Engineering continues to meet its target of 19 freshmen.

A new Dual Credit Advanced Standing agreement was signed with the Waterloo Regional School Board. Our Year 1 Earth Sciences course has been aligned with the Grade 12 Earth and Space Science course. We hope this collaboration will expose students to the geosciences and lead to them pursuing the geosciences in unversity.

UNIVERSITY OF GUELPH

Earth Science at Guelph focuses on the Earth's surface and the physical and chemical processes that modify it. Our Earth science programs have been offered through the department of Land Resource Science and the department of Geography. This past summer, the department of Land Resource Science merged with the department of Environmental Biology to form a new School of Environmental Science. We are currently reviewing our undergraduate and graduate programs in light of this new merger, campus wide curriculum reform initiatives and the continued reduction of faculty in Geography and Land Resource Science through retirement, secondments and various leaves. We do not anticipate any new hires in the foreseeable future so that we will have to lose

several of our geology courses. We hope to continue to offer an undergraduate program in Environmental Science that allows students to qualify as professional geoscientists, though a small number of courses may need to be taken elsewhere. On a positive note, two new faculty have joined us since we last reported – Christina Blodeau (biogeochemistry) is a new Tier II CRC based in the School of Environmental Sciences and James Irving (Geophysics) is a Junior NSERC Industrial Chair (Jan 2010) based out of the School of Engineering. Other developments include a move to a new building in 2010. Our graduate and undergraduate enrollment have been relatively steady to slightly increasing.

BROCK UNIVERSITY, DEPARTMENT OF EARTH SCIENCES

We presently have a faculty complement of nine, and six staff positions, but two faculty are in administrative positions (Profs. Rick Cheel and Greg Finn) and another (Dr. Dale Hess) is covering temporarily for one of these positions (Prof. Greg Finn). One of our faculty (Prof. Keith Tinkler) retired this year, and we hired a new tenure-stream assistant professor (Dr Mariek Schmidt, an igneous petrologist and volcanologist from the Smithsonian Institution) to start in 2010. Her tenure-stream appointment was delayed for budgetary reasons, and she has been hired as a post-doc in the interim.

Departmental enrollments in undergraduate majors are slightly up from last year (80 in 2008, and 83 in 2009), and have more than doubled in the past ten years. Our graduate numbers have risen from three Master's students in 2005 to 19 in 2008, although numbers have declined to 15 in the past year owing to the funding squeeze.

Our Faculty of Math & Science received a 4.5% cut to its budget last year, mostly absorbed through staff/faculty retirements and by increasing revenue streams. We face further cuts of ca. 5% this year, and our Department may lose several staff positions to retirement over the next 2–3 years. It will be another difficult year.

A Faculty Association initiative last year to include some aspects of unscheduled teaching (e.g. graduate teaching and supervision) as part of teaching workload have not borne much fruit owing to budgetary constraints. Nonetheless, seven of our nine faculty remain research active, two having had their NSERC discovery grants renewed in the past year. Prof. Uwe Brand continues as a Brock University Chancellor's Chair in Research Excellence.

SCHOOL OF GEOGRAPHY & EARTH SCIENCE, McMASTER UNIVERSITY

Faculty/staffing:

The School of Geography & Earth Sciences (SGES) has made one new tenure-track appointment at the assistant professor level – Dr. Sang-Tae Kim, a geochemist currently working as a post-doctoral fellow at the University of Maryland. We are also hoping to convert Dr. Ulrich Riller's Contractually Limited Appointment (CLA) position to tenure-track and to hire a cold-region hydrologist during this academic year. The establishment of the Centre for Climate Change, spearheaded by Dr. Altaf Arain, is in the final stages of approval by the Board of Governors. Dr. Carolyn Eyles is the recipient of a 2009 3M National Teaching Fellowship.

Undergraduate matters:

The total number of students taught in SGES courses during the 2008-9 academic session was 11967, maintaining levels of enrolment attained since 2006/7. Approximately 33% of the students were enrolled in service courses offered to the university community by SGES. 8096 of the students were registered in core, program courses and of these, 1492 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 89 students in this program at Level I (an increase of 15 from last year). Students may then select one of the three Honours B.Sc. programs offered in Levels II through IV: Honours Earth & Environmental Sciences (64 students in total); Honours Biology & Environmental Sciences (23 students in total); Honours Environmental Sciences (18 students in total). The latter two programs were newly introduced in 2008-9. We also offer a 3-year B.Sc. in Environmental Sciences with a current enrolment of 40 students. In total we have 144 students registered in B.Sc. programs (Level II and above), an increase of 50 students from the previous year. We will introduce a new Honours B.Sc. program in Geography & Environmental Sciences in 2009-10.

Graduate matters:

Graduate enrolments in SGES have increased substantially over the past few years and we now have 36 Ph.D, 22 M.Sc., and 13 M.A. students (total 71). Approximately 50% of our graduate students are supported by external (NSERC, SSHRC, OGS) scholarships.

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 will address the issue of teaching loads. In November, Dr. Dennis P. Lettenmaier of the University of Washington will present the 2nd Annual Woo Water Lecture "Drought Characterization and Prediction: New Approaches to an Old Problem".

UNIVERSITY OF TORONTO

The Dept. of Geology currently has 22 faculty in its graduate school, whose members have appointments and undergraduate teaching responsibilities on three campuses: St. George (16 faculty), University of Toronto Mississauga (3) and University of Toronto Scarborough (3). We also have 7 faculty cross

appointed to our graduate department from other units (Civil Engineering, Geography, Physics, Royal Ontario Museum) plus several status only/adjunct faculty (3).

Undergraduate enrolments in the Dept. of Geology have been growing steadily over the last five years. Program enrolments are currently at ~140 students up from 44 in 2005. In 2009 we will teach ~1700 students in undergraduate courses, with service teaching making up 80% 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 professional M.Sc. program in Environmental Science at the Scarborough campus launched four years ago has been very successful and currently has an enrolment of ~75 students.

Since 2008 we have hired 3 new faculty members: Bridget Bergquist (2008, Stable/Radiogenic Isotope Geochemistry); Lindsay Schoenbohm (2009, UTM, Tectonic Geomorphology); Maria Dittrich (2009, UTSC, Biogeochemistry). Through start up, NSERC and CFI funding sources these individuals are adding new research laboratories: a GIS lab (UTM), a biogeochemistry lab (UTSC), and a multicollector ICPMS and environmental geochemistry lab (St. George).

Before last year's financial crisis, the UofT already had a major budget shortfall and had begun to implement draconian base budget and one time only cuts. Its endowments took a major hit in 2008/09 that resulted in additional pressures at all levels, including not awarding many student scholarships. At the department level this has resulted in significant reductions in resources for teaching and research support, putting additional pressure on faculty grants.

CARLETON UNIVERSITY – DEPT. OF EARTH SCIENCES

For the first time in over 10 years, we have an increase in our faculty numbers. We are pleased to welcome a new faculty member, Fred Gaidies, who joins the department as an assistant professor of mineralogy. Our faculty complement is now 10.5.

Our undergraduate enrolment continues to grow, and we now have 130 undergraduate students in our programs, up nearly 20% from last year. The number of graduate students has also increased slightly to 28. We are at the limit of our resources (teaching and administrative staff, space, teaching equipment), and have had to restrict enrolment in our second and upper year courses. Next year, when our current 30 first-year students move on to second year and we see the usual transfers (10 - 15) in from other programs, should be quite interesting. We have held our overall course enrolment stable at about 2400 by capping the size of service courses; this action being needed in view of the growth in program enrolment.

We have now completed a major revision of our curriculum to ensure our programs remain consistent with the academic requirements for professional accreditation, and will be introducing the first two years of the new curriculum next fall. Along with the changes to our Honours and Majors programs we are introducing a new Concentration in Resource Economics, and have formulated a Minor in Business as well, both in response to feedback from our alumni.

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.

McGILL UNIVERSITY

We are in a hiring phase, having recruited three professors in sedimentary geology during the past year. We hope to hire two additional faculty in the coming months. Our undergraduate student numbers are stable at 15-20 students/year. We actively recruit undergraduate students from local CEGEPs and have close working relationships with the geology faculty at the various CEGEPs. Our new BSc Earth System Science program, which is joint with the Departments of Geography and Atmospheric and Oceanic Sciences, is developing nicely. We have a new NSERC CREATE training program in Astrobiology. Problems include (a) an old building which limits modern science and (b) replacing our aging electron microprobe (not sexy enough for CFI).

UNIVERSITÉ LAVAL

Rene Therrien became department chair in September 2008. We have recently hired two faculty members : Professor John Molson, who started in September 2008 and holds a Canada Research Chair Tier II in hydrogeology, and Professor Jean-Michel Lemieux who started in September 2009 and specializes in continental-scale hydrogeology. With these new additions, the Department now has 12 faculty members, which we feel is the strict minimum required to offer quality programs. The current financial situation at the Faculty and University levels, however, means that very few positions will be created in the next few years and we must therefore rely on research chairs (industrial or others) if we want to increase our number of faculty members. We have a few proposals on the way.

We offer joint MSc and PhD programs with INRS-Eau-Terre-Environnement (INRS-ETE) and both programs were formally evaluated in the first half of 2009. The evaluation was overall positive but we really should increase the exposure of our programs, which cover a wide spectrum of areas in the geosciences and are potentially very attractive for students. Maintaining coordination between different institutions is also a challenge.

Student enrolment at the undergraduate level remains stable, with a total of about 110 students in our two programs (Geology and Geological Engineering). Graduate enrolment is a cause of concern but, with the addition of new Faculty

members, we are optimistic that it will increase. Research funding has increased in the last year, and all our Faculty members except one hold NSERC discovery grants.

UNIVERSITÉ DU QUÉBEC À CHICOUTIMI, SCIENCES DE LA TERRE

Sciences de la Terre is a sector of the Applied Sciences Department at UQAC and as such we do not have a chair, but two directors of teaching programs: MSc and PhD - Michael Higgins; BSc and B.Ing. - Jacques Carignan. In our sector we have nine full-time faculty, two professionals and a technician. Our annual intake of ~15 BSc students is split between our programs in geology and geological engineering. We have about 20 MSc and 15 PhD students, with research dominantly in hard rock geology, geotechnics and hydrogeology. Most of our international students are from France, followed by Africa.

Alain Rouleau has just received a major grant to examine groundwater supplies in the Saguenay region. He has engaged two research associates (Romain Chesney and Julien Walter) and has started to build a team of graduate students. Sarah-Jane Barnes holds a CRC senior chair in magmatic ore deposits. She has added a research associate to her team (Phillippe Pagé) and will soon add another PDF. Damien Gaboury is expanding his studies in economic geology to West Africa, in association with a major industrial partner. Real Daigneault continues to direct CONSOREM, the mineral exploration research consortium that we share with UQAM. Wulf Mueller continues his research in volcanology and is the North American editor of Precambrian Research. Ed Sawyer has published two books on migmatites. Michael Higgins works on the petrology of active volcanoes and plutonic rocks in Chile and Canada. Paul Bedard is very active in geostandards analysis. Pierre Cousineau is director of the Applied Sciences department. We are collaborating in a civil engineering program that will see three new positions. We have just hired the first, Jean-Francois Noel, who will start in January 2010. We are also crossing our fingers for a new endowed chair in 2010.

UNIVERSITY OF NEW BRUNSWICK

1. Hired a metamorphic petrologist (Chris McFarlane) as backfill for John Spray (CRC)
2. John Spray's group recieved funding for and installed a new FEG-SEM
3. Hired a new Chief Technician
4. Construction of new class rooms, graduate student offices and museum as part of the Quartermain Center for Earth Science funded by a 1 million dollar donation from Bob Quartermain of Silver Standard Resources.
5. University wide hiring freeze imposed. No guaranteed replacement of retirements / resignations - at best replacements will be 6 month term positions. This situation is likely to continue for at least one more year.
6. Chris McFarlane, Dave Lentz and Cliff Shaw raise funds from CFI, NB innovation fund and industry for purchase and installation of LA-ICPMS. Installation expected by summer 2010.
7. UNB engaged in a major strategic planning exercise at behest of our new President. The plan is likely to include significant reallocation of resources and amalgamation of departments / faculties. Too early yet to know how this will affect geology.

ACADIA UNIVERSITY - EARTH AND ENVIRONMENTAL SCIENCE

The department continues to offer BSc programs in geology (53 majors), environmental geoscience (3 majors), and environmental science (50 majors), and MSc degrees in geology (10 students) and in applied geomatics (3 students). The latter degree is offered in collaboration with the Nova Scotia Centre of Geographic Sciences, part of the NS Community College system. We have 13 students doing BSc honours theses this year, 7 in Geology, 4 in ENVS, and 2 in collaboration with faculty in Physics and Chemistry. We are currently the third largest department out of 9 in the Faculty of Pure and Applied Science at Acadia (after biology and psychology). Our service courses (Natural Hazards and Oceanography) have a combined enrolment of about 500 students. Overall enrolment at Acadia stabilized in 2008-2009, and increased slightly in 2009-2010, but the financial situation across campus continues to be very tight.

The department was fortunate to receive a donation from the estate of the late James P. Nowlan, an Acadia geology graduate of 1928 (at the age of 18, perhaps the youngest graduate in the university's history). Dr. Nowlan had a distinguished career in the mining industry, and was NS Deputy Minister of Mines from 1958 until his retirement in 1973. He served as GAC president in 1964-1965 and died in 1986. We decided to use the money to purchase 17 new Leica transmitted light petrographic microscopes to replace the aging Nikon microscopes that have been the workhorses of the department for 30 years. The new microscopes were installed in early September, and a ceremony to mark the refurbished facility was held on October 16th in combination with other Acadia University "Homecoming" events.

Our environmental science program is one of three such programs selected for review in the spring of 2010 by ECO (Environmental Careers Organization) Canada. The review will be coincident with the regular Acadia University Senate review of the program.

Since the Fall of 2008, we have taken advantage of our excellent thin- and polished-section preparation facility by soliciting work from external users in a formal way. This venture has been highly successful, with fees from external users (representing other universities, government, and industry) covering more than one day a week of salary and thus enabling our technician to work full-time (5 days/week instead of 4). Pricing is competitive and feedback on the quality

has been very positive. Submissions are welcome ($20/thin section and $32/polished section).
Sandra M. Barr, Acting Head, E&ES

DALHOUSIE UNIVERSITY, EARTH SCIENCES

Following on our report last year, our Faculty complement has increased by 1 to 12, and we continue with 4 Senior Instructors. In December, we will see the retirement of our longest-serving Senior Instructor, and we are in the midst of the process to replace him, but only as a 6 month term replacement at the moment; we are hopeful that the Faculty of Science will approve a permanent replacement by next summer.

Student numbers are down very slightly from last year – 1025 students in 1st year Earth Sciences and Geography classes; 2nd year enrolments are similar to last year – approx 35. This fall, 10 students are registered in the Honours programme, which is little below average. We face greater competition for students with the new Sustainability Programme, as well as new general interest 1st year classes to be offered by other Science departments starting next fall.

The economic situation has affected the employment picture in the natural resources sector somewhat. Petroleum recruiting is down slightly from other years, but there are still summer jobs coming although permanent hires are down a bit.

GEOLOGY DEPARTMENT, SAINT MARY'S UNIVERSITY

Not many marking things for the Department of Geology at SMU this year. Completion of our newly renovated Science Building took place last year, and the adjacent Atrium is still under construction, although partly in use already. This new facility will diminish the existing problems of space, which are already minimal at SMU (we have offices the size of gymnasiums…). In terms of faculty, we are presently negotiating to increase our allotment by one half position through the hiring of a cross-appointment with our Environmental Studies Program. We are hoping to hire a hydrogeologist or an environmental geochemist to widen our faculty expertise. You will know next year if that worked out or not. In terms of enrollment, we have been experiencing a substantial decrease over the last two or three years in our introductory courses, and we are working on fixing that problem, but this has not been translating into a decrease of our number of majors. In fact, ironically, the latter increased in parallel with this substantial decrease in the former, which we therefore regard as being related to scheduling conflicts with competing science courses. Finally, in terms of graduate enrollment, 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.

DEPT OF EARTH SCIENCES, ST. FRANCIS XAVIER UNIVERSITY

The Department of Earth Sciences has 7 permanent faculty: one CRC Associate Professor, 4 full Professors, one Associate and one Assistant Professor. In addition there is one limited term appointment at the rank of Assistant Professor and a sessional Lecturer. All tenured and tenure-track faculty in our department hold NSERC Discovery Grants.

Dr. David Risk (PhD Dalhousie) joined our department in July 2008 as a new tenure track position in Environmental Sciences. Dr. Risk's area of research is in Biogeochemistry with a strong emphasis in methods development and instrumentation. Dr. Alvaro Montenegro (PhD Florida State University) joined our department in August 2009. Dr. Montenegro is a Physical Oceanographer whose research includes Earth system modeling, impacts of climate change and climate variability. Dr. Gurpreet Matharoo (PhD J. Nehru University, New Delhi, India) and Dr. Amanda Diochon (PhD Dalhousie University) have joined the department as Research Associates working on dynamical downscaling and land surface modeling, and soil carbon biogeochemistry respectively. Dr. Jörg Maletz has joined our department as James Chair Professor to work with Dr. Michael Melchin on the evolution of early hemichordates.

The new Environmental Sciences Program (ESP) has been operating now for a full year. Most of our faculty actively participated in the development of this program and continue to participate in the Biogeochemistry and Environmental Physics degree streams offered. The ESP is intended to prepare students for graduate school in areas not traditionally supported in our institution. Dr. Lisa Kellman a CRC in Environmental Sciences and a department member is the coordinator of this new program.

Our faculty level of service to the international scientific community remains high with several faculty holding editorial responsibilities in journals such as GSA Bulletin (Murphy), GroundWater (AE-Ferguson), J. Geophysical Research (AE-Beltrami). Mike Melchin serves as Chair of the International Subcommission on Silurian Stratigraphy. Grant Ferguson is current President of the International Association of Hydrogeologists– Canadian National Chapter.

Graduate studies at the MSc level continues to be actively promoted in our department and all our faculty supervise and support graduate students at the MSc.(13) and PhD (5) levels.

MEMORIAL UNIVERSITY OF NEWFOUNDLAND

Earth Sciences Dept., News & Developments 2008-09

- Students: Undergraduate student enrollment, Fall 2009

(1) Overall totals for all undergraduate courses offered by our department was up by 2.5 % over the Fall 2008 semester (total course registration of 785). Total course registration is up 28.9% over Fall 2007.

(2) Our total number of undergraduate majors is 171 students. This is an increase of 3% over Fall 2008, and an increase of 46.2% over Fall 2007.
(3) We have approximately 60 students in second year, approximately 62 in third year, and approximately 49 in fourth year.

Graduate student enrollment, Fall 2009: we have a total of 77 graduate students (73 registered this semester, with 4 on leave). This is an increase of 11.6% over 2008, and an increase of 30.5% over 2007.

(1) In the Fall 2009 semester, 67.5% of our graduate students are M.Sc. and 32.5% are PhDs (52 M.Sc. students and 25 Ph.Ds).
(2) In the Fall 2008semester, 63.8% of our graduate students were MSc and 36.2% were PhDs (44 M.Sc. students and 25 PhDs).
(3) In the Fall 2007 semester, 69.5% of our graduate students were MSc and 30.5% were PhDs (41 M.Sc. students and 18 Ph.Ds).

- Revision of Ph.D. comprehensive examination and thesis proposal processes.
- Faculty interests and research

31 current faculty members ([including 4 emeritus] and one Honorary Research Professor and two University Research professors), 4 CRC Chairs, three Tier II, one Tier I.

New hires (2008-present):

Dr. Joe Macquaker, Petroleum Geology

Dr. Penny Morrill, Environmental Geochemistry

Dr. Colin Farquharson, Exploration and Environmental Geophysics

One search close to completion in hydrogeology (failed in 2008, reopened 2009)

Altius Chair in Mineral Deposits (support from MUN, Altius, Vale CVRD, and Newfoundland & Labrador Research and Development Corporation) to be matched for NSERC A-IRC)

• Institutional support for infrastructure:

$80K for teaching equipment (microscopes & computers) (with commitment for an additional $80K in 09-10), and minor renovations for classroom reconfiguration ($120K).