

CCCESD – REVIEW OF DEPARTMENTS – 2019

UNIVERSITY OF VICTORIA, School of Earth and Ocean Sciences

Undergraduate Program/Course Changes

Year	2017	2018	2019
100-level enrolment	739	767	867
200-level enrolment	306	313	270
300-level enrolment	445	403	433
400-level enrolment	233	208	151
Undergraduate enrolment (total)	1723	1691	1721
Undergraduate degrees granted	51	45	35
Graduate enrolment (MSc/PhD)	19/24	18/26	20/31
Graduate degrees granted (MSc/PhD)	11/4	10/6	7/5

Undergraduate Program/Course Changes

We are starting a new combined program in Chemistry and Ocean Sciences, and extensively revised our existing combined program in Ocean-Atmosphere Physics to simplify entry for upper-level students. We have struck two departmental committees, one carrying out an in-depth review of our core Earth Sciences program, and the other considering the development of a Climate Sciences program (joint with Geography). We have added a new Ocean Sciences Field School (EOS 401) to run in late April, involving 5 days at the Bamfield Marine Sciences Centre and 7 days at UVic—this will be a capstone course in our Ocean Sciences Minor and combined Oceans Programs with Chemistry and Physics.

Faculty/Staff Changes

SEOS currently has 18 faculty members, although accounting for cross-appointments and secondments results in ~14 FTE positions. We also have a limited-term faculty appointment, 3 office staff, 3 senior lab instructors, a Geochemical Lab Manager, and a Scientific Assistant.

Hansi Singh joined our faculty in July, 2019, as a tenure-track Assistant Professor with research interests in coupled ocean-atmosphere climate dynamics, and Blake Dyer will join in November, 2019, with research in Earth history, sedimentology and carbonate geochemistry. Professor Vera Pospelova left in August, 2019, and a replacement search is currently underway for an Assistant Professor in Paleobiology/Paleoceanography. When filled we will have hired 6 new faculty members in 4 years, a significant rejuvenation.

In staff changes, Karina Giesbrecht replaced Sarah Thornton as senior lab instructor overseeing our oceans and geochemistry courses.

Challenges

Despite a large number of recent faculty hires, all were replacement hires and our faculty contingent has not recovered from significant cuts in past years—covering our broad undergraduate program in Earth, Ocean and Atmospheric sciences remains a challenge.

UVic leadership is in a transition period with the President, Vice President Academic, Vice President Research, and Dean of Science either replaced within the last year or to be replaced in the coming year.

A tragic logging-road bus accident during a Biology-course field trip killed two students and injured many more, including Earth Sciences students. An independent inquiry will look into causes and make recommendations for future field-trip procedures at the university.

Stan Dosso

SIMON FRASER UNIVERSITY, Earth Sciences

Faculty and Staff

We have 20 faculty members consisting of 2 Assistant Professors, 1 Associate Professor, and 13 full Professors, 1 Teaching Professor, 2 Senior Lecturers, and 1 Lecturer. We also have 22 adjunct faculty, 2 Associate Members, and 2 Professor Emeriti. Our staff consists of three office staff responsible for all administrative activities, 1 Senior Technician, and a Resource Specialist.

New additions

We were successful in our search to replace our Resource Specialist, and Elilan Ganesathas started in April 2019. We have a new, part time, Limited 3-year Term Lecturer to teach SCI 192, a course aimed at introducing science, including Earth Sciences, to teachers (K-8).

Jessica Pilarczyk, our new Assistant professor in Natural Hazards, is now at the University and is teaching her first course.

Starting a search to replace Doug Stead our professor in Resources and geological engineering. He will retire on December 31, 2020. This is an endowed Chair with significant funding. The job advertisement will be sent out soon and we hope to have the person in place for January 2021.

Enrollments

Our undergraduate enrollments have dropped slightly again and we now have 70 majors. We have canceled two courses this term because of low enrollments. Our undergraduates mainly take one of two streams, Geology or Environmental Geoscience, both of which lead to Professional Registration with the Engineers and Geoscientists of British Columbia. We are working on outreach with local high schools and especially the school councillors to increase our numbers. We are hopeful that new Faculty of Science initiatives in Ecology and potentially in Coastal Sciences that will include required Earth Sciences courses will allow us to flip some of these students to Earth Sciences majors.

Our Graduate program has seen an increase with 48 students representing 21 PhD and 27 MSc.

25th Anniversary

2020 will be the 25th anniversary of the Earth Science Department and we will be having a series of Alumni Speakers scheduled for the spring semester. We

are also planning several events which would include an alumni functions associated with Roundup in Vancouver and GeoConvention in Calgary.

Notable Awards:

-Doug Stead- John B Stirling Award (Engineering Institute of Canada)

-John Clague - 2019 Canadian Professional Geoscientist Award

News:

In the process of putting together a CFI application entitled “The Canadian Natural Hazards facility and Knowledge Portal”. The ask is for \$7.4 million and as we are requesting significant space, we are hoping that this will alleviate some of our ongoing space concerns. Although this is centred on building capacity in the Centre for Natural Hazards Research, the equipment we are asking for includes an Electron microprobe (EMP), Raman and Fourier transform infrared (FTIR) scanning microscopes, and a microCT core scanner which will benefit the entire Department. This will complement the soon to be acquired (by our two new faculty members) scanning electron microscope (SEM) and Itrax XRF core scanner.

Challenges:

- Faculty coming up for retirement. A significant proportion of the faculty will retire in the next 5-10 years. We are concerned about replacing them.

- Space

- Low Enrollments

Brent Ward

UNIVERSITY OF BRITISH COLUMBIA – OKANAGAN CAMPUS

The Department of Earth, Environmental and Geographic Sciences (EEGS) consists of 19 faculty: 6 Professors, 10 Associate Professors, 2 Senior Instructors, 1 Assistant Professor (non-tenure track) and 2.9 FTE support staff (four individuals). Three faculty members are cross-appointed with Biology and one with Human Geography. Three faculty are currently on study leave, two faculty are seconded to Associate Dean positions and two faculty have changed to reduced time (0.5 FTE) appointments leading to retirement.

Our department received a donation this year of \$500,000 from Dr. Charles Fipke through the UBC Blue and Gold campaign. UBC has matched the donation to create a \$1M endowment that will provide four \$10,000 scholarships per year for undergraduate students enrolled in the Earth and Environmental Sciences degree program. The scholarships will be available to students in years one to four, including students transferring to UBC Okanagan from colleges. Selection criteria for the scholarships are academic performance, financial need and a demonstrated interest in geology.

The department received approval to hire a core-funded 0.5 FTE technician during the 2019-20 fiscal year to assist with upkeep of teaching laboratories and preparation of materials for undergraduate labs.

Our new Geospatial Information Science (GISc) Minor program was approved in September 2019 by the BC Ministry of Advanced Education, Skills and Training. The program already appears in the UBC Okanagan calendar and is available to students in the current academic year.

The Fipke Laboratory for Trace Element Research (FiLTER) received an internal UBC infrastructure award to purchase an Agilent 8900 triple quadrupole mass spectrometer. The instrument was installed during the summer of 2019.

The EEGS department underwent an external review in early 2019. The reviewers were Dr. Irena Creed (USask), Dr. Nigel Roulet (McGill) and Dr. John Thompson (Cornell). We will conduct a major review of undergraduate curriculum during the next year as a result of the external review. We also are awaiting the outcome of a budget request to hire two new tenure-track Assistant Professors.

Craig Nichol has been reappointed as Associate Head of Department for an additional year. I am currently in the final year of a five-year term as Department Head.

In May 2019, faculty in the Irving K. Barber School of Arts and Sciences voted in favour of restructuring into separate Faculties of Arts and Science. The proposal is presently being considered by UBC Okanagan Senate and is expected to be passed by the UBC Board of Governors in early 2020. External searches will follow for two Deans to lead the new Faculties from 1 July 2020.

Edward Hornibrook

MOUNT ROYAL UNIVERSITY, Earth and Environmental Sciences

Enrollment

Our undergraduate enrolment is steady at 205 students, spread over a BSc–Geology (85) and BSc–Environmental Science (120). We also have 8 students in BSc–General Science with concentration in Earth Sciences, and 3 students taking Minors in Geography. In 2019–20 we will have approximately 1500 students registered in service or general education courses.

Faculty & Staff

The department currently has 17 tenured/tenure-track faculty, 1 emeritus professor, 2 full-time lab instructors and 3.8 instructional assistants. We were able to use the recommendation of our Campus Alberta Quality Council external review to hire a new assistant professor in environmental geoscience—Dr. Meg Stewart (marine/structural geology) from uOttawa—and a full time geology laboratory instructor—Siobhan McGoldrick from the University of Victoria.

Research

- Our research activities cover the following five broad domains: mineral resources; radiogenic isotopes and tectonics; marine geology; groundwater; ichnology & palaeontology. Faculty are funded through NSERC Discovery, NSERC SPG, CFREF, Metal Earth, and other external grants.

Highlights

- Mount Royal University and University of Hull have signed an international student exchange agreement
- Our department has set up a large endowment fund to support direct costs of field work for student trips and research
- New international field schools ran successfully in 2018-19. Courses are based in Iceland (led by Michelle DeWolfe) and Cyprus (Jeff Pollock)

- Submission of a new option (concentration) of Environmental Geoscience beginning in 2021 that meets the requirements of Association of Professional Engineers and Geoscientists of Alberta (APEGA)

Challenges

- Find space to house contract instructors and research assistants, and store research equipment and rock collections
- Fill the vacant the Instructional assistant position in geology
- Secure replacements for several upcoming faculty retirements
- The budgeting process at MRU has come under intense scrutiny in the past year with a new government. Funding to the institution is reduced by up to 8 per cent in the new provincial budget

Jeff Pollock

UNIVERSITY OF CALGARY, Geoscience

The department offers a BSc degree in Geology (with or without Petroleum Geology concentration) and a BSc degree in Geophysics. It also houses a large and vibrant graduate student cohort. The department is well aligned with the institutional Energy Strategy (Energy Innovations for Today and Tomorrow) and plays an important role in the University of Calgary Canada First Research Excellence Fund (CFREF) program entitled “Global Research Initiative in Sustainable Low Carbon Unconventional Resources”.

Faculty and Staff

The department has currently 35 full-time faculty members (20% are female) including 4 research chairs and 8 instructors. The support staff contingent is composed of 6 administrative staff, 8 technical staff, and >35 research staff members (the latter all soft-money funded). Recent retirements have reduced the number of faculty members especially in the area Geophysics (e.g. Exploration Seismology).

Enrollment

Undergraduate enrolment has continued to decreased from an all-time high of more than 800 students from 2012 to 2016 to 380 registered undergraduate students (2018-19). The incoming cohort of 2nd year Geoscience students has stabilized at circa 30 students. The number of graduate students has also decreased somewhat to circa 150 in thesis based PhD, thesis-based MSc, and course-based MSc programs.

New Developments

- One new faculty member has joined the department in January 2019: Dr. Dan Shugar, a geomorphologist who studies rapid geologic change in high altitude and high latitude environments;
- We have advertised a CRC tier 1 position in Geomicrobiology;
- We are working on a new departmental strategic plan (2020-24) with the goal to remain a leading and modern Department of Geoscience that is attractive to undergraduate and graduate students interested in studying Earth Science topics that address societal grand challenges;
- We are exploring the options of revenue generating programs such as professional masters degrees, certificates and diplomas;

- Our donation-sponsored Gallagher Colloquium talks attract usually >200 attendees from the campus, alumni, and downtown Geoscience communities in Calgary and vicinity;

- Last summer a new geological field trip to the Bahamas was introduced.

Challenges

- The major challenge over the next four years will be to deal with cuts to the Campus Alberta grant that were announced on October 24, 2019. Initial cuts are expected to be around 5% ramping up to 12 % over 4 years;
- Last year we still graduated 100 undergraduates that faced a challenging job market;
- Adjust to a new budget model that is partially based on bums in seats.

Bernhard Mayer

UNIVERSITY OF ALBERTA, Earth and Atmospheric Sciences

Enrolment - is down. Combined Earth and Environmental science enrolment is down to 12 in second year, 9 in third year and 43 in fourth year.

Faculty - is up. We have 9 Assistant (pre-tenure) profs, 4 Associate profs, 34 Full profs (1 in phased retirement, 3 about to retire) and 1 Faculty Lecturer (also about to retire). Our most recent hire, Dr Emily Grise (Urban Planner with a focus on transportation), started this summer. We are in the midst of an unofficial hiring freeze as the university has yet to receive its budget from the Conservative Kenney provincial government. There will be budget cuts, the severity of which remains unknown.

Staff - about 25 continuing staff and a significant number of auxiliary and soft money staff.

Quality Assurance Review - we conducted a Quality Assurance Review of our undergraduate and graduate programs this past year. The provincially mandated process required writing comprehensive Self-Study reports on our complete suite of undergraduate and graduate programs. An external review committee of six conducted an assessment of our programs that included an exhausting 2-day site visit. The committee was divided into two subcommittees, an undergraduate subcommittee of Bernhard Mayer (chair), Univ of Calgary, Katherine Bergman (external), St. Jerome's University, Waterloo, and Tanya Park (internal), and a graduate subcommittee of Russell Pysklywec (chair), University of Toronto, Daniel Shrubsole (external), Western University, and Gordon Gow (internal). Our sincere thanks are extended to these individuals for providing thorough, critical and profound reviews of our programs, as well as for making specific and positive recommendations for improving our suite of educational programming.

Curriculum Developments - we have implemented two new field schools. These include an Environmental Earth Science Field school offered in the third year of the program designed to introduce students to field-based study of Quaternary Geoscience and environmental bio-geochemistry. It is hoped that this field school will strengthen our Environmental Earth Science program and draw in more students. We are also introducing a third-year field

school focused on Economic Geology. The field school will be run every other year, is to take place in Arizona, and is funded through a generous endowment by alumnus Godfrey Walton, the President and Chief Operating Officer of Endeavour Silver. The original plan was to run this field school in Mexico. However, the UAlberta administration deemed Mexico to be a high-risk area and denied our request to run a field school there.

Challenges - 1) It is highly likely that we as a department, and the university as a whole, are going to be required to implement budget cuts over the coming year. Maintaining the quality of our undergraduate and teaching programs in the face of these budget cuts will no doubt be challenging. 2) An outcome of our Quality Assurance Review was the identified need for a strategic plan for the department. The last departmental review was completed in 2011, and that was more of a statement of the standing of the department than a strategic review. The department has tended to be opportunistic as opposed to strategic, a philosophy that has served the department well here in Alberta. But times have changed. Putting in place a strategic plan as well as implementing the many other suggestions made by the external review committee will require significant time and resources over the coming year. *Stephen T. Johnston*

UNIVERSITY OF SASKATCHEWAN, Geological Sciences

With the continued weakness in natural resources, undergraduate student numbers are still low and are roughly 50% of their peak values in 2013. Graduate student numbers remain similar to previous years.

In the past year, Prof. Jim Hendry (NSERC IRC) retired. There were no new faculty hires and none are foreseen with the University being under significant budgetary stress. Annual geology field schools were successfully run to Zortman Montana, and Flin Flon Manitoba and an international field school was run to Northern Spain. The annual geophysics field school in the vicinity of Saskatoon also took place.

Funding of shared analytical facilities, in particular the microprobe lab, remains challenging. *Sam Butler*

UNIVERSITY OF REGINA, Geology

The Department trains Geology and Environmental Geoscience students at undergraduate (BSc & BSc Honours) and graduate (MSc & PhD) levels. The Department also offers a co-op and internship program for geology majors. Students completing our geology degree or environmental geoscience degree are eligible to apply for professional accreditation with the Association of Professional Engineers and Geoscientists of Saskatchewan (APEGS).

In 2018-2019, the Department had 9 faculty members, including 5 full professors, 3 associate professors, and one assistant professor. Our programs have been assisted by three fulltime Geology Lab Instructors, one administrative assistant, and one technician.

In the fall semester of 2019, 87 undergraduate majors (72 in Geology and 15 in Environmental Geoscience), 19 MSc students, and 4 PhD students. In addition, we hosted 20 visiting scholars and visiting PhD students in 2019.

The department supports 6 research labs: the “Geofluids Characterization and Modeling Laboratory”, the “Geomodeling and GIS Laboratory”, Organic Petrology Laboratory”, the “Scanning Electron Microscope Laboratory”, “Precambrian Geology Research Lab”, and “Sedimentary Geochemistry Research Lab”. *Hairuo Qing*

LAKEHEAD UNIVERSITY, Department of Geology

In 2019/2020, our enrollment of majors has dropped to around 60. The majority are enrolled in the HBSc Geology with the others in Environmental Earth Studies, Water Resource Science and the BSc degree. In addition, we currently have 11 MSc students in our program.

We have six faculty and two active emeritus professors and this year will be hiring four sessionals to cover seven courses in order to cover teaching relief provided to offset additional administrative duties. We continue to offer First Year Geology at our Orillia campus that is taught by a contract lecturer. Four of our faculty currently hold NSERC Discovery Grants but we are increasing our reliance on non Tri-council funding. Industry support for our graduate student is increasing and there was strong demand for our students over the summer and for recent graduates.

We are waiting to see the effects on the University budget of the current governments policies. *Pete Hollings*

LAURENTIAN UNIVERSITY, Harquail School of Earth Sciences

Enrollments

Undergraduate enrollment continues to slowly decrease in our BSc Earth Sciences and BSc Environmental Geoscience.

Approximate 2019F UG Student Numbers:

BSc Earth Sciences: 65

BSc Environmental Geosciences: 7

Total Undergrad: 72

Enrollment at the graduate level is slowly increasing. We did a better job of graduating long term students last year, but the rate of completion is still problematic.

Approximate 2019F Grad Student Numbers:

MSc Geology: 47

Applied MSc Mineral Exploration (1 Yr): 12

Applied MSc Mineral Exploration (2 Yr): 13

PhD Mineral Deposits & Precambrian Geology: 32

Total Grad: 104

Faculty and Staff

Our staff numbers remain steady. Our faculty numbers slightly decreased in the past year and we continue to have problems with renewing positions. We lost both our environmental geoscientist and metallogenist over the summer. Dr. Michael Schindler departed for the University of Manitoba. We lost Dr. Jeremy Richards when he suddenly passed away in June. Although we were approved to hire our Geochemistry position in 2017/2018, continuing

problems with administration and LU has resulted in losing this long-term position. Although we are told this position is at the top of the list for renewal in Science and Engineering, we still have not received approval to resume the hiring process. We will face 3 retirements over the next 2-5 years and it remains to be determined if we will be able to replace those positions soon, but we have reason to be optimistic that all three will be renewed. We received approval to advertise for the Tier I CRC in Metallogeny position. In addition, Dr. Bruce Jago was appointed to our school as outgoing Executive Director of the Goodman School of Mines.

Current FT faculty positions: **15**

Current cross-appointed faculty: **2** (1 teaching in unit, 1 not teaching in unit)

Challenges

Our main challenges include:

- Undergraduate enrollment in the face of a looming performance/activity based funding model
- Graduate student supervision capacity: We would like to continue to grow our graduate programs but we have nearly reached our supervision capacity. Changes are needed to allow our Applied MSc 1Yr program to grow; we are reviewing the changes required to allow this program to grow.
- Research space to hold active research samples. We need additional rock-ready research space and we need longer term sample storage facilities.

Doug Tinkham

UNIVERSITY OF WINDSOR, School of the Environment

- New unit name – School of the Environment (SoE) – better reflects student enrolment (3:1 non-science to science) and strategic priorities of the University (Great Lakes environment).
- New faculty – 1 new full professor (also University president), 1 new assistant professor (GIS/remote sensing, delayed retirement replacement), and 2 redeployments (from Biological Sciences).
- New University president – Dr. Robert Gordon (Wilfred Laurier/Guelph/Dalhousie) is also a member of SoE. Expectations that significant institutional changes will be coming (e.g., budget model, SMA-3).
- New GIS certificate (Environmental Applications) – currently in final implementation phase, intake in Fall 2020, can be completed concurrent with numerous degree programs.
- 17 faculty, 2 AAS, 2.25 staff – staff continues to be inadequate to meet unit/program needs.
- Highest research funding in Science (in part due to 2 Tier 1 CRCs).
- Undergraduate enrolments have increased (32 B.Sc., 68 B.E.S.), and graduate enrolments are stable (18 M.Sc. and Ph.D.), however, further increases will be required to meet enrolment-centered budget.
- Faculty of Science is in an almost neutral financial position (until 10% cut to tuition) due to enrolment growth, but SoE is net ‘negative’ (high salary costs). Faculty of Science is one of few that shows consistent enrolment growth. University sees environmental programs as a growth area.

- Currently undertaking undergraduate program evaluations in preparation for upcoming IQAP review (2020-2021).
- Implementation of financial accounting software system (2018) was problematic and issues are ongoing (e.g., transfer of clerical duties to faculty, system fundamentally incapable of doing research accounting...).
- New student management software system (UWinside Student) replaced several student/alumni information tracking systems in November 2018. Implementation was problematic and issues persist.
- Greatest challenge = condition of facilities. SoE housed in one of the oldest buildings on campus and maintenance has been continually deferred. Some building components (e.g., roof) are in critical need of replacement.

Joel Gagnon

WESTERN UNIVERSITY

Current Faculty complement:

- 24 full-time faculty including 2 IRCs, 2 CRCs, 1 externally funded chair

Current staff/student complement:

- 16 support staff, 117 graduate students
- Approx. 72 undergraduate students in years 2, 3 and 4 (lowest in 10 years)
- 8 post-doctoral fellows
- Approximately 2000 students in service courses per year

Programs:

- Undergraduate programs for Professional Registration in Geology, Geophysics and Environmental Geoscience, as well as Major and Minor programs in these areas, and a Minor in Planetary Science and Space Exploration
- Graduate MSc and PhD programs in Geology and Geophysics
- Collaborative graduate programs in Planetary Science and Environment & Sustainability
- Joint JD/MSc in Geology or Geophysics and Law
- Focus on field education with 6 field courses offered each year

Major changes in the past year:

- Opening of the Geoscience Museum (Richard W. Hutchinson Geoscience Collaborative Suite) in September 2019
- Official opening of the Western Institute for Earth and Space Exploration
- Development of a field course for visiting Chinese students (first offering in summer, 2020)
- Preparation of documents for undergraduate and graduate external reviews (will take place in March 2020)

Major challenges in the future five years:

- Decrease in Limited Duties appointments
- Ongoing difficulties in maintaining operational resources for laboratories
- Six of our current 24 professors will retire
- Continue to face low undergraduate enrollment
- Planning of 2021 GAC/MAC meeting

Patricia Corcoran

UNIVERSITY OF WATERLOO Earth and Environmental Sciences Faculty/Staff

Over the current year, we have been engaged in an intensive period of faculty recruitment associated with new opportunities within the area of Water Sciences, a resignation and a move towards the inclusion of Lecturers within the Department. We are welcoming a total of 8 new faculty positions including a Geomicrobiologist, Integrated Hydrosystem Modeller and Biogeochemical Modeller at the Assistant Professor level, and an Environmental Geochemist at the Associate Professor level as a spousal hire. In addition, we have hired Lecturers in Stratigraphy and Sedimentology, Geophysics, International Programs and Early Year/On-line education. Four of the eight hires are female, which significantly improves our gender balance. We are also in the process of considering an additional faculty member in the area of Critical Zone hydrology. We have secured a new Tier 2 Chair in Solid Earth Geochemistry (Brian Kendall). The new faculty are joining the Department at various points over the next 6 months.

Current student enrollment

Following a relative low intake in all of the undergraduate programs in 2018, there was a reasonable increase in 2019 within both the Earth and Environmental Sciences (EES) and Geological Engineering (GeoEng) Programs, albeit the overall intake remains lower than we would like. We have introduced a new Water Science program within the Environmental Sciences offerings that is being run in collaboration with Wuhan University of China. Currently a total of approximately 120 Chinese and domestic students are enrolled and it has become more popular than we had expected. This contrasts with continuing low enrolments within the China 2+2 program right across campus. The Environmental Sciences programs overall have remained the strong and have maintained reasonable growth as compared to the classic Earth Science streams. The challenge of attracting students into the Geosciences is complex and needs to be addressed at a national scale. Our new early-year Lecturers have been a major factor in convincing lateral student transfers into the EES programs. Currently we have about 270 students in all years within the undergraduate EES program and about 120 in GeoEng. Our Graduate program enrolment has remained relatively stable with ~110 MSc and PhD students combined. Research activities and funding supporting the Graduate Studies program remain very strong and continue to diversify.

Challenges

With increasing budgetary constraints and an “activity-based” budget model being developed at UW, EES is challenged to investigate innovative sources of additional revenue. We are working to enhance outreach to local High Schools and becoming more directly engaged in the overall recruitment process. New recruitment videos have been developed for Geological Engineering and another is being designed for EES programs. We have expanding our on-line course offerings and our initial course in Introductory Earth Sciences has been much more successful than we had expected. We are

also encouraged by the early success of the new Water Science stream within our Environmental Sciences program noted above. We continue to focus on clarifying the distinction between all environmental options on campus and Geosciences. This remains a confusing entry point for new students currently.

David L. Rudolph

McMASTER UNIVERSITY, School of Geography and Earth Sciences

The McMaster School of Geography and Earth Sciences has a complement of 25 fully appointed faculty, and an additional 4 with joint appointments. The 25 include 4 teaching faculty and 21 research professors. 12 of the research (full appointment) professors would be considered either earth or environmental scientists and of these, 10 hold NSERC awards. We also have received major research funding associated with the Global Water Futures. We have 1 CRC chair (Waddington) and 1 privately endowed chair (Bhattacharya). SGES have secured about \$7 Million in funding as of 2019, and we average about 100 publications/year. A significant component of our undergraduate experience includes experiential opportunities, which start in our first-year courses and carry through 4th year. We offer a 2nd year field course to help recruit students to our program, as well as a 3rd year field course. We recently secured a \$1million alumni donation to fund our 2nd year field course, as well as provide discretionary research funds for our new structural geology hire. We also successfully recruited a structural geologist (Alex Peace) and a remote sensing/GIS specialist (Alemu Gonsoma) during the 2018/19 academic year.

We currently have about 80 graduate students, about 70 are full time, and about 50% are PhD versus MSc, with a slight majority of graduate students in earth and/or environmental science. Undergraduate majors are about 210 in the BSc programs. Of these, 59 are in our Earth and Environmental Science programs, with the balance in our Environmental Science, Geography and Environmental Science, or Biology and Environment Science programs. We continue to emphasize APGO certification and continue to be concerned with enrollment trends in both our BA and BSc programs. In partial response, we have spent the past year critically reviewing our course and program offerings, with a number of proposals moving forward that will streamline our course offerings.

Bruce Newbold

BROCK UNIVERSITY

Faculty complement now consists of 8, as long-time faculty member Greg Finn serves as the University’s Provost & Vice-President, Academic. No replacement was provided and the department has had no retirements in the past year. Two faculty members from the Department of Geography and Tourism are cross appointed and contribute primarily to the graduate program. There are currently 14 students registered in the MSc program and two additional students have just defended. Undergraduate enrollments beyond first year are steady (59 compared to 61 last year), with most majors currently being in the environmental geoscience stream. Enrollments in first year

courses are dominated by two online context courses. Brock's current funding model allocates tuition from context courses to the unit offering them, which helps to offset departmental costs, including salaries. The department will thus offer these courses during the summer as well as during the fall/winter sessions with anticipated enrollments of >500 students each in the summer and > 1,000 students each during the fall/winter.

The major initiative for the department this year was to propose a new BA program in Earth and Planetary Sciences. The goal of the program is to provide students with a solid understanding of the geologic processes operating on the Earth and other planets, as well as of developments in planetary exploration. In addition, students will be provided with a strong background in communications. Students graduating from the program will have a minor in Communications, but will not have the science requirements for PGO. A first draft of the program has been reviewed by the Offices of The Vice-Provost. A slightly revised version of the proposal is anticipated to go through the full University and Provincial review procedures during the fall. The department is capitalizing on the availability of new technologies (including GIS, remote sensing and drone capabilities) to develop an experiential learning course that will allow our students to use advanced technology and learn career-related skills in "classic" geological settings.

The creation of a research centre/institute/program of Environmental Science was recently suggested by M. Pisaric. This initiative would provide additional focus on environmental geoscience beyond the relatively narrow focus envisaged by APGO (clearly targeted at the geologic consulting industry) by incorporating courses in ecology and physical geography as well as the breadth of expertise in paleoecology and paleoclimatology that exists Department of Earth Sciences. It would also allow greater focus on ecology than is available in a Department of Biology very much focused on molecular biology and biotechnology, and a greater focus on physical environmental science that is possible through the Sustainability Science and Society program that is very much focused on socioeconomic aspects of environmental science.

Francine McCarthy

UNIVERSITY OF TORONTO, Earth Sciences

Our faculty renewal continues: we are advertising for positions in Applied Geophysics (at the Associate/Full Professor level, into an endowed chair and in petrology (at the Assistant Prof. level). We have been fortunate to get all of the positions replaced in the department with various retirements/departures--this isn't guaranteed still at UofT and there's continual work to maintain faculty complement in geosciences. Overall, the new hires (four others in the last three years, in addition to the current searches) have led to a much younger, more dynamic faculty group--the renewal has been very positive for the department.

Our undergraduate numbers are up >20% this year from last (158 up from 130). It's hard to pinpoint a specific reason for this--we currently have a particular active and engaged student cohort (seems to be forged through field

trips; below), and they are involved in recruiting students from the larger population into our programs. A newer Earth and Environmental Systems program major has become very popular among the undergrad group. We continue with strong emphasis on field/international education: aside from regular field camps and local class trips to the Sudbury area, Deep River, etc. sites, extra field trips/courses in the past/current year include South Africa, Australia, SW US, Turkey, Trinidad (12). These trips are heavily subsidized by our Advancement efforts and support from the Dean's office. A big project underway is renewing our entire microscope teaching collection. The ~\$1M cost is covered by reserves from the Faculty/Department.

Our graduate numbers are essentially steady, with a total population of 60 funded students this year. Our real challenge in recruiting continues to be in recruiting large numbers of high-quality domestic PhD students. Our international admissions for grad students are positive owing to the welcome decision by UofT a couple of years ago to make international graduate tuition+fees equivalent with domestic tuition+fees; in addition to our healthy grad student scholarship endowments.

Our main challenges continue to be in keeping up with power-house units at UofT (Medicine, Computer Science, Chemistry) in vying for resources/prestige. This was buoyed significantly this year by Professor Barbara Sherwood Lollar receiving the NSERC Herzberg Medal. We're still preparing for the implementation of KPI-Key Performance Indicators in Ontario universities for determining a portion of post-secondary budgets. Hopefully this works to the advantage of Earth Sciences, since we can demonstrate strong performance in heavily weighted teaching metrics like student employability, experiential learning, student research.

Russ Pysklywec

QUEEN'S UNIVERSITY Geological Sciences & Geological Engineering Undergraduate Program/Course Changes

Total Undergraduate Enrolment = 210 (2nd through 4th years; common undeclared 1st year)

Majors Geological Sciences = 69

Majors Geological Engineering = 141

Total Graduate Students = 67

Enrolment is holding steady. Beginning an internal review of our undergraduate curriculum to accommodate the new hires.

Faculty/Staff Changes

Retirements = Doug Archibald and Ron Petersen

New Hires = 6 (1 geochemist/chemical sedimentologist – Full Prof.; 1 clastic sedimentologist – Ass. Prof.; 1 geodynamics – Ass. Prof.; 2 environmental geochemistry – Ass. Prof.; 1 geological engineer – Ass. Prof.); ½ new hires are female.

New hires reflect retirement replacements, one replacement for a faculty member that passed away unexpectedly, and new additions to increase faculty complement. Three years ago, department had 15 faculty and with new hires

faculty complement equals 21. One additional new hire was just approved to replace Ron Petersen. Posting should be available soon.

Challenges

Space is the biggest challenge. We are bursting at the seams trying to find office and lab space for our new hires.

Peir Pufahl

CARLETON UNIVERSITY, Earth Sciences

Enrolment: Our four-year undergraduate enrolment has decreased slightly to 98 students, spread over 9 programs and concentrations. We also have 11 students in B.Sc.H. - Environmental Science with Concentration in Earth Sciences, and 30 students taking Minors in Earth Sciences. In 2019-20 we have over 2500 students registered in service or general interest courses, compared to 2130 in 2018-19. For 2019-20 we have 40 graduate students, 20 MSc and 20 PhD. Carleton has initiated a new program to reduce international graduate student fees for excellent applicants, but it is unlikely to fund more than one student in the department at one time.

Faculty and Staff Members: We have ten full-time faculty members, one cross-appointed (one-half time) faculty member in Environmental Sciences, one Instructor, a First-Year Laboratory Coordinator, six administrative and technical staff members, and several contract instructors. Brian Cousens has replaced Dariush Motazedian as department chair as of July 2019. We hired a new Instructor in Geophysics, Mareika Adams, for two years starting in January 2019. We also hired a new microprobe technician, Maryam Shahabi Far, to replace Peter Jones who retired in March 2018. The department is hiring a Laboratory and Contract Specialist for the Isotope Geochemistry and Geochronology Research Centre, a position that has been soft-money funded for over 18 years.

Space: To resolve the issue of lack of space for storage of sensitive geophysical and field equipment and rock collections, we have a proposal for a “Field Research Building” in the preparation stage that will include us, Environmental Sciences, and Biology. A fire in the Steacie Building in February 2019, caused by faulty wiring in a 50 year-old fume hood, shut down Tim Patterson and Rich Amos’s research lab, along with the brand new XRD lab, and we hope that construction of the new lab will be complete by the end of November 2019. Newly renovated lab spaces for the microprobe and NEPTUNE MC-ICP-MS are complete, and both instruments are running routinely.

Quality Assurance: We are working on learning outcomes (LO) for both undergraduate and graduate programs. Course-level LO are complete and program-level LO are close to completion. Both the Undergraduate and Graduate (Ottawa-Carleton Geoscience Centre) programs will undergo IQAP review in 2020.

Ottawa-Carleton Geoscience Centre: The Director of OCGC for 2018-2021 is Hanika Rizo at Carleton University. In 2018-2019, the OCGC helped fund and organize a graduate student field trip to eastern Ontario, an invited seminar series (joint with the GSC Logan Club), student transportation to the

PDAC Annual Meeting, and the annual OCGC Alumni Reception at the Royal York Hotel during the PDAC.

Funding: In 2018-19 we had three NSERC Discovery Grant applications, two of which were successful. Four applications for Discovery Grants have been submitted for 2019-20. Richard Ernst (Scientist-in-Residence) successfully added another industry partner to his four-year NSERC CRD grant to continue studies of large igneous provinces. Tim Patterson is the recipient of a “Clean Growth in the Natural Resources Sectors Innovation Program” grant from NRCan. The Department is involved in two CFI proposals, the first for a new field emission microprobe and for ICP-MS/laser/TIMS instruments (\$5M), and a second collaborative proposal with the Great Lakes Institute at U. Windsor (\$2.5M).

Highlights:

- A flurry of “in the news” items for Department of Earth Science faculty in the Fall of 2019.
- Successful operation of the new XRD, venerable microprobe, and new MC-ICP-MS.
- Excellent alumni attendance at the PDAC Alumni Reception.
- In April-May 2019, our EARTH4807/5903 field course was held in Mallorca, led by Tim Patterson.
- 25 Grade 9 students attended our Enrichment Mini-Course during the first week of May, 2019, led by graduate student J. Atkins.
- We offered 3 weeks of Earth Science and Sports Camp again this summer, providing the opportunity for 150 children ages 8 to 12 to explore Earth Science in our labs and outdoor spaces.
- Establishment of the new Charlie Roots Scholarship to fund undergraduate research.
- Establishment of the K. Sethu Raman Endowment for Field Education in the Earth Sciences to fund graduate students and undergraduate students in field courses.

Challenges:

- Find space to store sensitive equipment and rock collections.
- Convert the Instructor in Geophysics position back to a faculty position, and secure replacements for several upcoming faculty retirements.
- Develop a new Department Strategic Plan in light of the ongoing formulation of a new University Strategic Plan.
- Replace the aging electron microprobe with a state-of-the-art field emission electron microprobe via CFI.

Brian Cousens

UNIVERSITY OF OTTAWA, Earth and Environmental Sciences

Human Resources

Overall enrolment in our undergraduate programs remains relatively stable while the enrolment in our graduate programs continues a slight increase and is projected to increase more with new hires.

- 240 BSc students (Honours, majors): 165 in the environmental science program and 75 in geology, environmental geology, and geology-physics programs.
- 6 PDFs, 29 PhD students, and 34 MSc students
- Faculty of Science enrolment up 12% in 2019
- The GEO programs meet different requirements of Association of Professional Geologists of Ontario (APGO), and the EVS program is certified under EcoCanada
- 14 current faculty members, including:
 - 2 CRC II Professors (AMS technology, applications and development)
 - 1 Distinguished University Professor
 - 1 Goldcorp Chair in Economic Geology
 - 1 University Research Professor
 - 1 replacement professor
 - 2 teaching support staff
 - 3 administrative support staff
 - 1 research associate, 19 research staff

HR Changes

- Hiring of CRC II (position currently advertised)
- Hiring of Chair in Economic Geology (position currently advertised)
- Hired new Director's assistant this summer
- Replacement professor began contract
- Six professors on partial/full sabbatical / parental leave

Physical Resources

- Purchase of second AMS instrument
- Department moved into new building (again). STEM building houses half of professors and students, and administrative staff.

Noteworthy

- University is undergoing creation of next "vision" document. Transform 2030: little optimism since there are no resources to meet most goals.
- Graduate and undergraduate programs are undergoing program reviews.

In prep: \$15M CFI in "petrochronology"

- Carleton, Ottawa, McGill, UQAM
- Platform for high (mass) resolution equipment
- Submission early January 2020

Submitted: \$1.65M NSERC CREATE

- Hannington et al. in collaboration with German universities
- Platform for student training

Challenges

- Teaching capacity is still down 20%; very difficult for bilingual program.
- New provost and central administration encourages hiring part-time and sessional lectures instead of full-time professors. Also have implemented new business model, which gives central administration more control over hiring decisions and finances.
- Examining options to increase total student enrolment. *Dave Schneider*

McGILL UNIVERSITY, Earth and Planetary Sciences

Students – Our graduate student enrollment continues to stay strong (16 MSc and 42 PhD). Our undergraduate enrollment remains low with 18 BSc students. Currently 78% of our BSc students and 58% of our MSc and PhD students are female. An ongoing challenge is in recruiting undergraduate students to the Department from both CEGEP and first year science.

Faculty – The department currently has 17.5 faculty members (not including emeritus, adjuncts, etc.), of which 12 are tenured and 40% are female. This includes recent new hire Professor Eric Galbraith in the field of Earth Systems Modeling. The department now has four CRC Tier II Chairs.

News – The University is developing a plan for the now-empty Royal Victoria Hospital which is adjacent to our campus. Assuming all goes to plan, EPS will be moving into this space in eight years – a much needed upgrade from our present building. The department is also gearing up for the Geological Society of America Annual Meeting which will be taking place in 2020 in Montreal.

Jeff McKenzie

UNIVERSITÉ DU QUÉBEC À MONTRÉAL – Sciences de la Terre et de l'atmosphère

Students and programs

There is a small decrease of student enrolment in our department as compared to academic year 2018-19. Details for 2018-19 and 2019-20 are as follow:

Bachelor and certificates: TOTAL – 175 (2019) vs 185 (2018).

- Geology: 79 (93)
- Meteorology: 17 (26) (abandoned program)
- Meteo & Climate: 14 (created in 2019)
- Major inn Geology: 4 (1)
- Certificate in applied geology: 14 (18)
- Certificate in energetic ressources: 41 (47)
- Certificate in atmospheric sciences : 6 (created in 2019)

Graduate students : TOTAL – 90 (2019) vs 88 (2018).

M.Sc. Earth Sciences (research and professional): 41 (37)

M.Sc. Atmospheric Sciences: 14 (14)

Ph.D. Earth & Atmospheric Sciences (joint with UQAC): 33 (37) at UQAM.

10 Post-doctoral fellows.

Faculty and staff

• 22 faculty members, 9 associate professors, 2 emeriti, and the following permanent staff: 1 administrative assistant, 1 secretary, 1 logistic clerk, 2 laboratory technicians, 4 research officers, and 2 IT support technicians.

• **Recent hires:** 4 professors since 2018 – Benoit Saumur (September 2018), structural and economic geology; Joshua Davies (January 2019), high-temperature geochronology; Violaine Ponsin (September 2019), environmental geology/geochemistry; Alejandro Di Luca (January 2020), atmospheric sciences. Plus one on-going advertisement for a tenure-track faculty position in Atmospheric Sciences.

- Since January 2018, the unexpected passing of Eric Girard, 3 retirements (Torlaschi, Jébrak, Goulet) and 2 semi-retirements (Gauthier and Lamothe).
- Alain Tremblay replaced Gilles Couture as department chair June 2018.

Research. The department hosts 2 Research groups – Geotop: a multi-disciplinary and multi-institutional group of scientists (14 from our department) supported by FQRNT funding; research activities in geochemistry, isotope geochemistry, geochronology, hydrogeology, environmental geology, mineral deposits and geophysics. – ESCER: a multi-departmental (5 from our department) research group in Atmospheric sciences; research activities in Regional Climate Modelisation and related domains.

Other research activities in Economic Geology, Tectonics, Surficial and Bedrock Geology in collaboration with federal/provincial surveys and Mineral Exploration industry.

News. In January 2019, our department received a generous gift from Robert Wares to support a range of departmental activities, student grants, fieldtrips for undergrad and graduated students, and the development of an economic geology lab. The donation is under the administration of the Fondation UQAM.

Challenges.

(1) Beginning new program in Atmospheric Sciences (Météo et Climat) in 2019. (2) Revision and evaluation of the UQAC-UQAM joint Ph.D. program (created in 2008). (3) Decrease of student enrollments for the Faculty of Science (approx. -10% in 2019). (4) Renewal of tenure-track position in low-temperature geochronology and geophysics in the near future.

Alain Tremblay

UNIVERSITÉ LAVAL, Geology and Geological Engineering

Students & programs

- For the fall of 2019, student enrolment has been steady with 104 students in B.Engineering Geology, 30 BSc Geology, 6 MSc Environmental technology, and 15 MSc Earth Sciences. Notable increase in total enrolment with 27 PhD in Earth Sciences, 6 PDFs and 9 research associates.
- Canadian engineering accreditation board – our undergraduate program in engineering geology was accredited for 6 years (2019-2025).
- Next January our *GLG-3002 Excursion Géologique* field course will be held in Morocco.
- Last summer 60 undergraduates were registered work term students, among the highest registrant/undergraduate ratio in Science & Engineering Faculty.

Faculty and staff

- The department has 13 faculty members, 17 adjunct professors, one emeritus professor, and the following permanent staff: 4 professionals, 3 technicians, 2 secretaries.
- Recent hire: Bertrand Rottier joined in August 2019 as Assistant Professor in Mineral Deposit Geology; Crystal LaFlamme joined in August 2018 as Assistant Professor (tier II CRC in Sulfur isotope geochemistry).

- Challenges: renewal of a tenure-track faculty position in Geo-hazards and Ground Stability.
- Staff: there were 3 retirements translated into 3 new hires (SEM technician in Sept. 2018; Computer specialist/instructor in Jan. 2019; administrative staff in Sept. 2019). Two more retirements to come in this academic year.

Research

- Microanalytical laboratory – CFI Innovation NOI (EPMA, FE-SEM, automated mineralogy SEM, XRD).
- Research activities cover four broad domains: Mineral Resources, Ground water, Geomaterials, Geo-Hazards, reflected in the activities of faculty members in various multidisciplinary research centers: Mineral resources (*CentreE4M, director Georges Beaudoin*), Northern studies (*Centre d'Études Nordiques, multi-university research center, director Richard Fortier; CFREF Sentinelle Nord - Complex northern systems, theme director René Therrien*); Concrete infrastructures (*CRIB, multi-university research center, director Benoit Fournier*), Water Research Center (*CentrEau*).
Marc Constantin

ACADIA UNIVERSITY, Earth and Environmental Science

Geology enrolments continue to slow but are balanced by healthier enrolment in both Environmental Geoscience and Environmental Science. Graduate student enrolment is stable, and we anticipate the introduction of an MSc program in Environmental Science, although it won't affect student numbers much as students are currently doing Environmental Science theses under the guise of Geology or Biology.

We lost one faculty member to Queen's this year, and his partner who also taught on a per-course basis, so had to make last-minute substitutions on our soft-rock side. Being a late resignation, the replacement is for one year only, but we were ranked second in the university for a tenure-track position, which bodes well for the upcoming anticipated spate of retirements (5 of our 8 faculty positions and both our support staff positions).
Rob Raeside

DALHOUSIE UNIVERSITY, Earth and Environmental Science

Enrollments

Year	2017-18	2018-19	11 PhD/13 MSc 79
Total UG years 2-4	68 (ERTH)	55 (ERTH)	107 (ENVS) 60 (ERTH)
Total grad	12 PhD/10 MSc	11 PhD/13 MSc	11 PhD/15 MSc
Total program enrollment	90	79	193

Current Earth Science undergraduate student enrolments are up a little bit from 2018-19, with the most significant change in the department cohort being the new group of Environmental Science students. Graduate student enrollments have grown a little bit, and with further increases expect as the

result of recruitment by the newer faculty, and the addition of a new PhD scholarship.

Faculty and staff

Two new faculty started this year, Vittorio Maselli, a Tier II Canada Research Chair in Coastal Zone Processes (linked to the Ocean Frontiers Institute), and Miao Zhang, a seismologist. With the merger of the Environmental Science and Earth Science Programs, we have become the Department of Earth and Environmental Sciences. Two regular faculty and two instructors were added as a result of the merger to bring the complement to 14 faculty and 5 instructors. One of the ENVs faculty will be moving to the Faculty of Health Science, but his endowed chair will remain with the department. The department will be conducting a search to replace this position (Elizabeth May Chair in Health and Environment), and a new “bridging” position in the area of Environmental Geoscience.

Support for Teaching and Research

Space renovation is complete for the new CFI-funded (\$16m) National Seismic Imaging Facility (M. Nedimovic, PI) to deploy the next generation ocean bottom sensors. Negotiations are in progress to build the sensors. Several faculty have benefitted greatly from the research funds available through the Ocean Frontiers Institute to support ocean-focused research in the eastern Arctic and Northwest Atlantic.

As a result of the merger, the department is embarking on significant renovations to teaching and research space (including new expansion into a wing of the building we occupy). Planning is in progress, and major construction will start in April 2020. We just completed the renovation of the mineralogy/petrology teaching laboratory.

Challenges

The Shell Canada Campus Ambassador Program agreement was initially renewed, but then Shell cancelled the program. In the past the department had received ~\$100k per year to support ugrad/grad research and 4th year field schools to Nevada/California and to Trinidad. The replacement program is focused on engineering only.

As part of the merger process, we developed a governance document to help define the roles of department leadership, committees and other roles to ensure an equal voice for the two programs. We are trying to ensure that the ENVs undergrads feel included. We are also trying to develop efficiencies (co-taught honours, single co-op program, etc) that should come with the merger.

James Brennan

SAINT MARY’S UNIVERSITY, Geology

After the recent hiring of Erin Adlakha (PhD Ottawa) as an Assistant Professor in Applied Mineralogy, and Randolph Corney (MSc Toronto) as a Lecturer, the SMU Department of Geology is now opening a search for a field-based structural geologist in view of Victor Owen’s retirement. We have also completed the hiring of a new technician, Mitchell Kerr, who recently

submitted his PhD thesis to Laurentian University. This is not a new position, but a replacement for our outgoing technician, Randolph Corney, who is now our new Lecturer.

Our recently hired Canada Research Chair, Todd Ventura, has now fully developed his organic geochemistry laboratory, which is equipped with a two-dimensional gas chromatographic system (FID/qToFMS) and a liquid chromatographic system (UPHLC/SFC-HPLC). Erin Adlakha also applied to CFI for a super light element benchtop micro-XRF. Our analytical equipment arsenal has been steadily increasing over the years, which has been creating some space issues. This is a challenge that our entire Faculty of Science is facing.

With additional HQP-training activity coming from our new faculty members, our graduate student enrolment is currently at an all-time high. We also still benefit from the ongoing HQP-training of Professor Emeritus Georgia Pe-Piper, who is the well-deserved 2019 recipient of the CFES Mentorship Medal. After hitting an all-time low during the last couple of years, our number of new majors is also on the rise this year, bringing us back to the average of the last 20 years.

Pierre Jutras

MEMORIAL UNIVERSITY, Earth Sciences

• Students

	Total Enrollment Fall 2018	Total Enrollment Fall 2019
Total UG majors (2nd-4th year)	82	65
Total grad	72** (33% PhD, 67% MSc)	84** (35% PhD, 65% MSc)
Total students	154	149

Undergrad

Enrolment (i.e. total number of majors) in the BSc Earth Sciences program was at an all-time high six years ago in Fall 2014 (with 194 undergraduate students enrolled). Enrolment in Fall **2019** is down dramatically over the high point five years ago. The good news is enrollment in our 1st year courses is climbing over the past couple of years.

Grad

Graduate enrolment is up from the last few years, due to increased university funding, in part. (The highest point of graduate enrolment was in Fall 2010 with an enrolment of 92). Current graduate enrolment is 84.

*Fall 2018 Breakdown by degree:	**Fall 2019 Breakdown by degree:
MSc (Geology): 31	MSc (Geology): 35
MSc (Geophysics): 17	MSc (Geophysics): 20
PhD (Geology): 12	PhD (Geology): 15
PhD (Geophysics): 12	PhD (Geophysics): 14

• **FACULTY INTERESTS AND RESEARCH**

- 21 current faculty members, 5 new tenure- track hires approved/underway
- Five emeritus professors (including two University Research Professors)
- One Honorary Research professor
- One CRC Tier I in Biogeochemistry
- One CRC Tier II in Seabed Imaging
- One NSERC-Chevron A-IRC

• **CHALLENGES**

Memorial announced in the summer of 2018 a voluntary retirement program (VRP) and five senior faculty members in Earth Sciences retired on 12/31/18. We now have 21 full time faculty for the year, or longer, while we hire 5 new tenure- track faculty. These retirements left serious gaps in our hard-rock/economic geology and soft-rock/petroleum areas of expertise and curtailed our ability to deliver some courses we normally offer. We have been allotted 6 sessional salaries while we rebuild. There have been two recent lab renovations, and one complete re-build of a clean lab is now underway. Several new instruments were recently installed and a new ICP-MS is on the way.

Greg Dunning