

## CCCESD – REVIEW OF DEPARTMENTS – 2018

### CARLETON UNIVERSITY, Earth Sciences

**Enrolment:** Our undergraduate enrolment is steady at ~111 students, spread over 12 programs and concentrations. We also have 13 students in B.Sc.H. - Environmental Science with Concentration in Earth Sciences, and 31 students taking Minors in Earth Sciences. In 2018-19 we will have over 2000 students registered in service or general interest courses, similar to 2017-18. For 2018-19 we have 45 graduate students, 27 MSc and 18 PhD. Carleton has initiated a new program to reduce international graduate student fees for excellent applicants.

**Faculty and Staff Members:** We have 10 full-time faculty members, one cross-appointed (one-half time) faculty member in Environmental Sciences, a First-Year Laboratory Coordinator, five administrative and technical staff members, and several contract instructors. In 2018, we hired a new IT (web development) specialist, Michelle Co, who is based in our department but serves the Faculty of Science. Claire Samson left the department in December 2017 for a new position in Montreal. We are hiring a new Instructor in Geophysics for two years to start in January 2019. We are also hiring a new microprobe technician to replace Peter Jones who retired in March 2018. Brian Cousens will replace D. Motazedian as department chair in July 2019.

**Space:** We have completed department renovations that began in 2015. We are still attempting to resolve the issue of lack of space for storage of sensitive geophysical and field equipment and rock collections. Newly renovated lab spaces for the XRD, microprobe and NEPTUNE MC-ICP-MS are complete, and all instruments are running. The isotope geochemistry labs in the Steacie Building were shut down for two months in 2018 to move and partially replace the air handling unit to the lab, and these labs will be closed in summer 2019 for a complete renovation.

**Quality Assurance:** We are working on learning outcomes (LO) for both undergraduate and graduate programs. Course-level LO are complete, program-level LO are in progress but close to completion. Both the Undergraduate and Graduate (Ottawa-Carleton Geoscience Centre) programs will undergo IQAP review in 2019-2020.

**Ottawa-Carleton Geoscience Centre:** The new Director of OCGC for 2018-2021 is Hanika Rizo at Carleton University, taking over from Tom Al at the University of Ottawa. In 2017-2018, the OCGC helped fund and organize an AAPG Students Chapter 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. In Fall 2018, the OCGC funded a two-day graduate student field trip to Bon Echo Park.

**Funding:** In 2017-18 we had five NSERC Discovery Grant applications, and all were successful. Two RTI Grant proposals were submitted and both were unsuccessful. Along with industry support, Richard Ernst (Scientist-in-

Residence) successfully acquired a new four-year NSERC CRD grant to continue studies of large igneous provinces.

#### Highlights:

- Excellent support for Earth Sciences at the Carleton Library, including electronic subscriptions and new acquisitions.
- Installation of the new XRD and MC-ICP-MS.
- Alumni attendance at the PDAC Alumni Reception was excellent, and our interim Dean of Science was present.
- In April-May 2018, our EARTH4807/5903 field course was held in Morocco – our first field course held in Africa.
- Brian Cousens led a two-week trip to Iceland for Carleton alumni and friends, initiated by the Alumni Association, and has been asked to lead a similar trip to Hawaii in Fall 2019.
- We offered 3 weeks of Earth Science and Sports Camp this summer, providing the opportunity for 150 children ages 8 to 12 to explore Earth Science in our labs and outdoor spaces.
- We offered our first ever Field Experience for Teachers, held at the Queen's University Biology Station. Beth McLarty Halfkenny and Claudia Schroder Adams led a group of 11 educators to field destinations in the Eastern Ontario region to illustrate and model inquiry based learning, and provide an opportunity for teachers to immerse themselves in experiential learning.

#### Challenges:

- Find space to store sensitive equipment and rock collections.
- Convert the Instructor in Geophysics position back to a faculty position in applied geophysics.
- Replace the aging electron microprobe with a state-of-the-art field emission electron microprobe via CFI.

Secure replacements for several upcoming faculty retirements.  
*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 projected to increase more.

- 234 BSc students (Honours, majors)

	1 <sup>st</sup> year	2 <sup>nd</sup> year	3 <sup>rd</sup> year	4 <sup>th</sup> year
Honours /Majors in GEO	14	13	17	26
Minors in GEO *		1	1	5
EVS	55	32	33	44
TOTAL	69	46	51	75

- 6 PDFs, 34 PhD students, and 48 MSc students
- 14 current faculty members, including:
  - 2 CRC II Professors (both in AMS technology, applications and development)
  - 1 Distinguished University Professor
  - 1 Goldcorp Chair in Economic Geology
  - 1 University Research Professor HR changes:
    - 1 replacement professor • Unexpected passing of Jack Cornett
    - 2 teaching support staff • Retirement of André Desrochers
    - 3 administrative support staff • Departure of Sarah Dare
    - 1 research associate • Hiring of CRC II Brett Walker (UC-Irvine)
    - 19 research staff • Hiring of CRC II (in negotiations)

#### Physical Resources

- The department moved into the new Science-Technology-Engineering-Math (STEM) building. The structure is 6 levels + 2 basement levels encompassing 25,000+ m<sup>2</sup> and was completed on time! EES teaching, research, and administrative functions of the department are now located in three proximal buildings: Advanced Research Complex (research + offices), Marion Hall (teaching + research), and STEM (offices).
- Canada's only accelerator mass spectrometer, housed at the University of Ottawa's Advanced Research Complex, will receive an upgrade from a new \$3.8M CFI application led by **Jack Cornett** (Ian Clark).

#### Noteworthy

- Beginning new option (stream) of **Environmental Geoscience** beginning in 2019. Now offer four undergraduate options: Geology, Geology-Physics, Environmental Geosciences, and Environmental Sciences The three former meet different requirements of Association of Professional Geologists of Ontario (APGO), and the latter is a biology-heavy curriculum.
- New CRC II AMS (Brett Walker) started in Fall 2018.

#### Challenges

- Teaching capacity is down 20%; very difficult for bilingual program.
- Steady decline in GEO enrolment, but a more or less steady increase in the EVS program.
- New provost and central administration encourage hiring part-time and sessional lectures instead of full-time professors. Also, have implemented a new business model that gives central administration more control over hiring decisions and finances. Also, University priorities and vision not necessarily well aligned with those in the geosciences.
- Examining options to increase total student enrolment.

*Bill Arnott*

#### McGILL UNIVERSITY, Earth and Planetary Sciences

**Students** – Our graduate student enrollment continues to grow, to a record high of 65 students (21 MSc and 44 PhD). Our undergraduate enrollment remains low with 21 students, and a decrease in our BSc minor program to 8 students. Currently we have 76% females at the BSc students, 47% female MSc and PhD students, and 40% female faculty.

**Faculty** - The department currently has 16.5 faculty members (not including emeritus, adjuncts, etc.), of which 11 are tenured. In the past year one faculty member has received tenure and promotion to Associate Professor. The department has two CRC Tier II Chairs (Professors Gomez and Rowe).

**News** – EPS received a very generous gift from an Alumnus, Robert Wares, to support a range of departmental activities including outreach and distinguished postdoctoral research fellowships. The department has a new Geobiologist, Professor Nagissa Mahmoudi. *Jeff McKenzie*

#### UNIVERSITÉ LAVAL, Geology and Geological Engineering

##### Students & programs

- Overall student enrolment at our department has decreased slightly. Bach. Engineering geology 104, BSc Geology 32, MSc Environmental technology 5, MSc Earth Sciences 13, PhD Earth Sciences 21.
- Canadian engineering accreditation board – evaluation year of our undergraduate program in engineering geology.
- A new 3<sup>rd</sup> year additional field mapping school on the Precambrian rocks of the Chibougamau region was offered last August.
- Last summer 68 undergraduates were registered work term students. For several years, this has been the highest registrant / undergraduate ratio at the Faculty of Science and Engineering.

##### Faculty and staff

- The department has 12 faculty members, 16 adjunct professors, one emeritus professor, and the following permanent staff: 4 professionals, 3 technicians, 2 secretaries.
- Recent hire: Crystal LaFlamme joined as an Assistant Professor and now as tier II Canada Research Chair in Sulfur isotope geochemistry. Also on-going advertisement for a tenure-track faculty position in Mineral Deposit Geology.
- Challenges: renewal of a tenure-track faculty position in Geo-hazards and Ground Stability. Student enrollments decrease for the Faculty of Science and Engineering.
- Staff: there were 2 retirements. A new SEM technician was hired in September and a computer specialist position is presently advertised.

##### Research

- Our research activities cover the following four broad domains: Mineral Resources, Ground water, Geomaterials, Geo-Hazards. This is reflected in the activities of faculty members in various multidisciplinary research centers: Mineral resources (*CentreE4M, director is Georges Beaudoin*), Northern studies (*Centre d'Études Nordiques, multi-university research center, director is Richard Fortier; CFREF Sentinelle Nord - Complex northern systems, theme director is René Therrien*); Concrete infrastructures (*CRIB, multi-university research center, director is Benoit Fournier*), Water Research Center (*CentrEau*).

- Renewal of research equipment (electron microprobe, 30-years old SEM) still remains a major challenge.
- Past and future meetings in Québec City: International Sedimentological Congress (August 2018); GAC-MAC (May 2019). *Marc Constantin*

### **ACADIA UNIVERSITY, Earth and Environmental Science**

At Acadia University enrollment in geology has slowed down considerably though our departmental numbers are steady due to increased environmental science enrollment. Enrollment overall at Acadia is steady but retention has been a problem, we now have about 3500 full-time students. The E&ES department experienced a 30% increase in student enrolment up to 2016 though the past two years have seen our first-year class significantly reduced in size. That said we now have 123 majors with 77 in environmental science and 46 in geoscience. Our departmental faculty numbers are holding steady as we have had not had retirements recently; we presently have 8 faculty with 2 support staff and one semi-permanent part-time instructor. We currently hold 4 NSERC grants, 1 SSHRC grant and are also have faculty funded through NSERC Engage and CREATE. A CFI-funded lab specializing in XRD and XRF analysis is now running and will significantly add to our research capacity. We also weathered a much need major building renovation and are now in negotiations with donors for lab facilities upgrades in E&ES

Our graduate program remains robust at 8 graduate students in Geology and 5 in Applied Geomatics; accessing both internal and external funding for graduate students continues to be difficult. Increasingly, we find ourselves partnering with industry or government agencies to provide graduate student opportunities. *Ian Spooner*

### **DALHOUSIE UNIVERSITY, Earth Sciences**

#### ***Enrollments***

Year	2017-18	2018-19
Total UG years 2-4	68	55
Total grad	12 PhD/10 MSc	11 PhD/13 MSc
Total program enrollment	90	79

Current second year undergraduate student enrolments are down 18% from 2017-18, although the overall enrollments in the Faculty of Science have increased. This is getting back to more normal levels since a very large cohort in 2013-2015. Graduate student enrollments are expected to grow significantly with new faculty replacements.

#### ***Faculty and staff***

**NO RETIREMENTS THIS YEAR!** The department underwent two faculty searches, one for a Tier II Canada Research Chair in Coastal Zone Processes (linked to the Ocean Frontiers Institute), and the other in Geophysics. We filled them both. The CRC appointment went to Dr. Vittorio Maselli (Lecturer at University of Aberdeen) and the geophysics appointment to Dr. Miao Zhang (current post-doc at Stanford University). With the completion of these

hires, the full-time faculty cohort will be 15 (3 Instructors, 12 Professors). The department has 4 FTE of technical staff in support of teaching (mostly) and research. We are currently developing a proposal to replace 1 FTE staff position lost to attrition.

#### ***Support for Teaching and Research***

Recent CFI Innovation fund round, Mladen Nedimovic funded to establish the National Seismic Imaging Facility (~\$16M) at Dalhousie to build and deploy the next generation ocean bottom sensors. The space renovation is nearly completed, and work is in progress to build the sensors.

The department is now embarking on an effort to upgrade its undergraduate teaching facilities by prioritizing its own equipment/space improvement allocation to that area, which has also gotten some buy-in from the FoS. A recent success is funding to completely renovate the petrology teaching lab with new AV, storage cabinets and student workspace. The university is also renovating space for a new facility for research and teaching sample storage.

The Shell Canada Campus Ambassador Program agreement was renewed, but at a much lower level. In the past the department had received ~\$100k per year, in three-year cycles, but this has been reduced to \$17,000 per year for the next three years. This will primarily support our 4<sup>th</sup> year field schools to Nevada/California and to Trinidad.

#### ***Challenges***

The department has been asked to form a new unit (Department of Earth and Environmental Science) by amalgamation with the Environmental Science program. There has been significant discussion and a motion to accept this to be voted on in November. *James Brennan*

### **SAINT MARY'S UNIVERSITY, Geology**

The Geology Department recently welcomed Dr. Erin Adlakha (PhD Ottawa) as a new Assistant Professor in Applied Mineralogy in replacement of Dr. Georgia Pe-Piper, who remains among us as an Emeritus Professor. We also welcomed Randolph Corney (MSc Toronto) as a newly appointed Lecturer, which is a new position that was recently added to our complement. By doing so, we lost one of our departmental technicians, and this vacant position is currently on hold. With the gradual acquisition of many pieces of high-tech analytical equipment over the years, this technician position has been increasingly focused on running them. Five years ago, we acquired an additional half-time technician who has taken over teaching lab support, whereas our two other technicians are now fully dedicated to research and HQP-training support. Of these two, only one is ranked at the level of “research technician”, and we are running into some hurdles with our Human Resources Department while trying to upgrade the other (vacant) position in such a way that we can attract the right candidates. In terms of enrolment, our number of new majors is quite low for the second year in a row, shortly after reaching an all-time high four years ago. *Pierre Jutras*

## MEMORIAL UNIVERSITY, Earth Sciences

### • Students

	Total Enrollment Fall 2017	Total Enrollment Fall 2018
<b>Total UG majors (2<sup>nd</sup>-4<sup>th</sup> year)</b>	<b>122</b>	<b>82</b>
<b>Total grad</b>	<b>83*</b> (31% PhD, 69% MSc)	<b>72**</b> (33% PhD, 67% MSc)
<b>Total students</b>	<b>205</b>	<b>154</b>

### Undergrad

Enrolment (i.e. total number of majors) in the BSc Earth Sciences program was at an all-time high five years ago in Fall 2014 (with 194 undergraduate students enrolled). Enrolment has declined steadily each year since. Enrolment in Fall **2017** was down 30% over Fall 2016, and down 37% over the high point five years ago. Enrolment in Fall **2018** is down 33% over last year, and down 58% over the high point five years ago. The good news is enrollment in our 1<sup>st</sup> year courses in climbing over the past couple of years.

### Grad

Graduate enrolment in Fall 2017 was on par with an average enrolment in the low 80s for each of six years prior. (The highest point of graduate enrolment was in Fall 2010 with an enrolment of 92). However, graduate enrolment in Fall 2018 shows a decline of 13% over the previous fall.

*Fall <b>2017</b> Breakdown by degree:	**Fall <b>2018</b> Breakdown by degree:
MSc (Geology): 38	MSc (Geology): 31
MSc (Geophysics): 19	MSc (Geophysics): 17
PhD (Geology): 12	PhD (Geology): 12
PhD (Geophysics): 14	PhD (Geophysics): 12

### • FACULTY INTERESTS AND RESEARCH

- 26 current faculty members including two University Research Professors
- Five emeritus professors (including two University Research Professors)
- One Honorary Research professor
- One CRC Tier II in Seabed Imaging
- One NSERC-Chevron A-IRC
- HMDC Chair in Basins Analysis had failed search and we will be interviewing applicants in the second round very soon.

### • CHALLENGES

Memorial announced in the summer of 2018 a voluntary retirement program (VRP) and five faculty members in Earth Sciences participated in that and will retire on 12/31/18 and that will leave us with 21 full time faculty for the time being. This is the largest number in the Faculty of Science and it will be a challenge to replace all of them. These retirements leave serious gaps in our hard-rock/economic geology and soft-rock/petroleum areas of expertise and curtails our ability to deliver all the courses we need to offer. *John Hanchar*

## UNIVERSITY OF VICTORIA, School of Earth and Ocean Sciences

### Undergraduate Program/Course Changes

We are currently proposing the addition of a new Ocean Sciences Field School (EOS 401) to run in late August, involving 5 days at the Bamfield Marine Sciences Centre and 5 days at UVic. This would be a capstone course in our Ocean Sciences Minor and Combined Oceans Programs with Physics and Chemistry. Costs to students and logistics are issues.

### Faculty/Staff Changes

SEOS currently has 18 faculty members, although accounting for cross-appointments and secondments results in ~13 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.

We carried out searches for two tenure-track Assistant Professors earlier in 2018 who will be joining us in 2019: Ruohong Jiao (tectonics and landscape evolution) and Hansi Singh (coupled ocean-atmosphere climate dynamics). We also had two new hires join in 2017: Ed Nissen (CRC-2 in earthquake geophysics) and Jon Husson (sedimentary geology), and have a faculty search currently underway in earth history. This represents a significant rejuvenation of the School. However, all are 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 science and keeping graduate student numbers up remain significant challenges.

In staff changes, a limited-term Scientific Assistant (Ed Wiebe), who covers computer-systems administration, teaching lab coordination and marine technology support, was moved to base budget—a very valuable addition—and we hired a new Graduate Secretary, Kalisa Valenzuela.

*Stan Dosso*

### SIMON FRASER UNIVERSITY

We have 18 faculty members consisting of 1 Assistant Professor, 1 Associate Professor, and 12 full Professors, 1 Teaching Professor, 2 Senior Lecturers, and 1 Lecturer. We also have 20 adjunct faculty, 2 Associate Members, and 2 Professor Emeriti. Our staff consists of three office staff responsible for all administrative activities and 1 Senior Technician. A second technician retired in June and we hope to have the position filled by the end of the year.

We were successful in our search to replace Dr. John Clague. Dr. Jessica Pilarczyk is starting in January 2019 as an Assistant Professor. She is an expert in tsunami and storm surge deposits. She comes to us from the School of Ocean Science and Technology at the University of Southern Mississippi and we look forward to her arrival.

Dr. Paul Kench started September 1<sup>st</sup> as the new Dean of Science and the newest member of our Department. He comes from Auckland University where he was Head of the School of Environment. He is an expert in coastal hazards with a focus on tropical environments.

Our undergraduate enrollments have dropped slightly from last year to approximately 89 majors. 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. Our Graduate program has seen a drop as well with 44 students representing 18 PhD and 26 MSc. We are fortunate to have a new scholarship that will soon be available to our Earth Science Graduate students: James A. MacEachern Graduate Scholarship.

Last spring we underwent a Department Review. The review team returned a positive report with several important recommendations. We are currently in discussions with the senior university administration on how to best address these recommendations. As part of the review process we created educational goals for the undergraduate and graduate programs, as well as for specific courses.

Notable Awards:

- Derek Thorkelson- Howard Street Robinson Distinguished Lecturer 2018-2019
- John Clague – Albert Nelson Marquis Lifetime Achievement Award

*Brent Ward*

### **THOMPSON RIVERS UNIVERSITY, Geology**

TRU Geology continues to offer the equivalent of the first two years of a geology program, although students can complete most of the knowledge requirements for APEG-BC through a combination of courses in Geology, and Physical Geography, and Natural Resource Sciences. Enrolments remain steady (up slightly this year) at about 200 students with an increase in participation of international students.

There is an ongoing effort to implement a BSc in Geoscience program as part of the Department of Physical Sciences. A glimmer of optimism was the approval to purchase 3 additional petrographic microscopes with wifi enabled cameras, and a digital microscope, along with the interest of a faculty member in physics to teach geophysics. We are currently looking to expand imaging capability with the purchase of a benchtop SEM/EDS as part of a multi-use microimaging lab. 2018-19 will focus on completing the BSc degree in collaboration with cognate departments, and developing articulation agreements with colleges.

*Nancy A. Van Wagoner*

### **UNIVERSITY OF BRITISH COLUMBIA – OKANAGAN CAMPUS**

The Department of Earth, Environmental and Geographic Sciences consists of 19 faculty: 6 Professors, 10 Associate Professors, 2 Senior Instructors, 1 Assistant Professor and 2.9 FTE support staff (four individuals). Three faculty members are cross-appointed with Biology and one with Human Geography. Two faculty are taking study leave during the 2018-19 academic year (Dr. Adam Wei and Dr. Kyle Larson).

Dr Mathieu Bourbonnais began a three-year non-tenure track appointment in July 2018 as Assistant Professor in Geographic Information Science. He is contributing to efforts to introduce a new Minor degree in Geospatial Information Systems in September 2019.

Four new Adjunct Professors were appointed to the department in 2018: Mr. Dan Austin and Dr. Hugh Hamilton, both of Associated Environmental Consultants, Vernon BC; Dr. Dawn Kellett, Geological Survey of Canada, Ottawa ON; and Dr. Natasha Neumann, Forests, Lands, Natural Resource Operations and Rural Development, Nelson BC.

Undergraduate enrolment for 2018-19 has remained strong with 41 newly declared Earth & Environmental Sciences (EESC) Majors and 3 Freshwater Sciences (FWSC) for a total of 141 EESC Majors and 14 FWSC Majors. There are a further 10 students enrolled in the EESC Minor program.

Our complement of graduate students remains steady at 25, consisting of 16 EESC M.Sc., 6 EESC Ph.D. and 3 Interdisciplinary Graduate Studies (IGS) Ph.D. students.

Our new field school (EESC 390 Geological Field Mapping) ran successfully in August 2018. The course is based primary in the Crowsnest Pass area of Alberta and is led by Dr Kyle Larson.

The department is undergoing external review this year. We expect to host External Reviewers on the UBC Okanagan campus in April 2019.

*Edward Hornibrook*

### **MOUNT ROYAL UNIVERSITY, Earth and Environmental Sciences**

Our department houses a BSc - Major in Geology, BSc - Major in Environmental Science, and Geography Minor program.

#### **Enrollment**

Our geology program has an intake of 24 students per year. Our environmental science program has a mandate over the next few years to increase first-year intake from 27 to 42 students. General Science and other science majors seeking Geography minors remain low in number. Geology, environmental science and geography service courses continue to be offered to other science majors as well as a large university-wide audience through our General Education offerings. Full enrollment statistics are reported in the annual CCCESD survey.

#### **Faculty & Staff**

The department currently has 16 tenured/tenure-track faculty, 1 emeritus professor, 1 full-time lab instructor and 3.8 instructional assistants. The department has submitted a proposal for a new tenure-track position in the field of Earth System dynamics. Two of the six geologists are on sabbatical leave during the 2018–19 academic year; while 1 of our 4 geographers are on sabbatical in the 2018–19 academic year. All disciplines have a large compliment of sessional contract instructors.

## Space & Resources

Space constraints continue to challenge the department. There is little room to house sessional instructors, research assistants, and meet other miscellaneous space requirements. Collection storage space continues to be very limited with few prospects for new space.

The budgeting process at MRU has come under intense scrutiny in the past year. Provincial funding to the institution remained stable with some modest growth. Each academic unit in the Faculty has been asked to prepare a 3 per cent budget reduction. A new budget model will be implemented in the 2019/2020 Academic Year and will likely have significant effects on resources and academic programming.

## News

- The Campus Alberta Quality Council external review of our geology program is completed and approved by the Government of Alberta.
- Students from Mount Royal University and University of Hull participated in a field trip to Iceland for an international exchange.
- Our department has set up a large endowment fund. Every year the interest generated would be paid out to support direct costs of field work for student trips and research projects.
- *Dr. Michelle De Wolfe* received an NSERC Strategic Partnership Grant for 2019-2022 in conjunction with the Northwest Territories Geological Survey.
- *Dr. Gwen O'Sullivan* has applied for a CFI grant in the area of environmental forensics.

## Challenges

- As noted by the external reviewers, our department lacks adequate research space for faculty and/or students.
- Juggling research programs with heavy teaching loads.
- The BSc Geology Major and Environmental Science Major Programs are considering how to implement more interdisciplinary options for students in the near future.

*Jeff Pollock*

## UNIVERSITY OF SASKATCHEWAN, Geological Sciences

This past year we were able to hire one number faculty member, Colin Sproat, in the field of brachiopod paleontology. We were also able to extend the term position of Dr. Joyce McBeth while Prof. Jim Hendry will be retiring on January 1, 2019. Graduate student numbers remain steady around 60 while undergraduate student numbers are down for the third consecutive year, likely due to the continued weakness in natural resources.

After having had to cancel our sedimentary field school to Montana three years ago, all of our field schools ran smoothly this year including a trip to Asturias in Spain run by professors Buatois and Mangano, a trip to Flin Flon and a geophysics methods field school held outside Saskatoon.

*Sam Butler*

## LAKEHEAD UNIVERSITY, Department of Geology

In 2018/2019, our enrollment of majors has increased with 74 currently enrolled up from 67 last year. Thirty-three 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 15 MSc students in our program up one from last year.

We have six faculty and two active emeritus professors and this year will be hiring six sessionals to cover seven courses in order to cover teaching relief provided to offset additional administrative duties. We also have one contract lecturer teaching First Year Geology at our Orillia campus. Unfortunately one of our lapidary technicians is retiring after 33 years but we have been able to hire a replacement so after a four month overlap we will be back to two full-time technicians. 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 have recently hired a new President and are waiting to see what impact that has on the University's strategic plans.

*Pete Hollings*

## UNIVERSITY OF WINDSOR, Dept. Earth & Environmental Sciences

- 15 faculty, 2 AAS (new positions over last year), 2.25 staff (stable but inadequate)
- Enrolments are stable (31 B.Sc., 78 B.E.S., 18 M.Sc. and Ph.D.) but need to increase to meet expectations (Enrolment-centered Management budget system)
- New director of GLIER (Mike McKay) will join EES January 1, 2018
- Search commencing for GIS/RS/AI tenure track faculty position (delayed retirement replacement)
- Faculty of Science in almost neutral financial position due to enrolment growth but EES is net 'negative' (e.g., high salary costs)
- Institution wants to grow environmental programs and has (finally) realized this requires resources (strategic marketing, outreach, web presence...)
- Currently undertaking undergraduate program reviews in response to IQAP reviews (next IQAP round in 2020)
- Implementation of new financial accounting software system has been very problematic (e.g., downloading of clerical duties to faculty, system fundamentally incapable of doing research accounting, research reporting delayed/inaccurate/incomplete...)
- New student management software system will replace several student/alumni information tracking systems, and will go live November 26, 2018 as a 'rip the Band Aid off' roll out (similar to financial system roll out).
- Many high-level institutional decisions currently on hold due to 'rebooted' presidential search, which has impacted some planned EES initiatives (e.g., move to Essex Hall)

*Joel Gagnon*

## **WESTERN UNIVERSITY**

### **Current Faculty complement:**

- 25 full-time faculty including 3 IRCs, 3 CRCs and 1 externally funded chair
- Recent hires: Katsu Goda (Associate Professor & Canada Research Chair in Multi-Hazard Risk Assessment)

### **Current staff/student complement:**

- 16 support staff
- 108 graduate students
- Approx. 100 undergraduate students enrolled in years 2, 3 and 4 of program
- 10 post-doctoral fellows and/or research associates and/or instructors
- Approximately 3600 students per year in Earth Science classrooms

### **Programs:**

- Undergraduate programs in Geology, Geophysics, Environmental Geoscience, Planetary Science
- Graduate MSc and PhD programs in Geology and Geophysics
- Collaborative graduate programs in Planetary Science, Environment & Sustainability and Integrated Science
- Joint JD/MSc in Geology or Geophysics and Law
- Focus on field education with 6 core field courses in our undergraduate program (one in 2<sup>nd</sup> year, one in 3<sup>rd</sup> year, four in 4<sup>th</sup> year/grad)

### **Major changes in the past year and upcoming year:**

- New Dean
- New Provost
- New VP Research
- New President
- Museum space for mineral and rock collections (took over space in September, 2018 and will officially open in around June, 2019)
- Loss of 2 faculty members and 1 staff member

### **Major challenges in the future five years:**

- Budgetary challenges (departments to absorb 3% cut each year for 2 years)
- Decrease in Limited Duties instructors
- Ongoing difficulties in maintaining operational resources for laboratories
- By 2022, five of our current professors will retire

*Patricia Corcoran*

## **UNIVERSITY OF WATERLOO**

### **Faculty/Staff**

We continue to go through a period of rapid retirements and hirings within the Department. Over the last 2 years, we have had 10 faculty and staff retire and we have hired 17 new employees including 7 postdoctoral fellows. Over the last year, we had 2 regular faculty resign or retire and we are currently in the middle of 4 new faculty searches. We have 1 Tier 1 CRC Chair in Hydrogeology and we have applied for a Tier 2 Chair in Solid Earth Geochemistry. It has been a period of significant change and turnover. Our

current faculty complement is 25 with 22 males and 3 females. The gender imbalance is a critical challenge and one we are focussed on correcting.

### **Current student enrollment**

In 2018, we have experienced a significant reduction in incoming students in both the Earth and Environmental Sciences (EES) and Geological Engineering (GeoEng) Programs (30%). It is very unclear what the cause of this is although the number of international students through the China 2+2 program showed a significant drop this year, which may indicate more students moving into other areas or more institutional options. Domestic student numbers were also down and it is of interest for us to learn the experience of other institutions across Canada. It is interesting to note that the Environmental Sciences programs have remained the strongest and shown continual 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. Currently we have about 200 students in all years within the undergraduate EES program and about 120 in GeoEng. Our Graduate program, on the other hand continues to grow and flourish with ~120 MSc and Phd students combined. The research program remains very well funded and diverse.

### **Challenges**

With increasing budgetary constraints, including the potential impacts of the newly elected Ontario Provincial government and low overall enrollments, we are challenged to investigate innovative sources of additional revenue. We are working to enhance outreach to High Schools and become more directly engaged in the overall recruitment process. In addition, we are expanding our on-line course offerings and launching a new Water Science stream within our Environmental Sciences program. This is being done in collaboration with Wuhan in China. We are also working to make the distinction between all environmental options on campus and Geosciences. This is a confusing entry point for new students currently. It is also critical to be able to promote modern Geoscience options at all levels through communication and branding messages.

*David L. Rudolph*

## **McMASTER UNIVERSITY, School of Geography and Earth Sciences**

The McMaster School of Geography and Earth Sciences has a complement of 22 fully appointed faculty, and an additional 4 with joint appointments. The 22 include 4 teaching faculty and 18 research professors. 11 of the 18 research 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 2018., and we average about 100 publications/year. We are working on a \$1million alumni donation to fund our 2<sup>nd</sup> year field course.

We presently have about 80 graduate students, about 70 are full time, and about 50% are PhD versus MSc and most in earth and/or environmental science. Undergraduate majors are about 200 in the BSc versus BA programs; 55 are in Earth and Environmental Science, as opposed to our other programs Biology and Environment, Geography and Environment, and pure Environmental Science. We continue to emphasize APGO certification, but are concerned about dropping enrollments, especially in our BA program in Geography. SGES is presently recruiting tenure track assistant professors in *Structural Geology*, and *Remote Sensing/GIScience*. We remain understaffed as a result of the loss of 6 faculty in 2015-2016, but have to compete for new faculty with programs like Kinesiology and Life Sciences that are bursting at the seams, and have fewer faculty. McMaster in general, seems to have adjusted to the activities budget model and the faculty of science is currently in the black.

*Janok P. Bhattacharya*

### **BROCK UNIVERSITY**

The Department of Earth Sciences celebrated its 50th anniversary in September during Homecoming Week. Alumni from all five decades (as well as present & former faculty and staff, and current graduate and undergraduate students) participated in a symposium on Friday and a networking brunch on Saturday. It was a great opportunity to recognize how some things have remained constant, despite the many changes through the decades – with the main constant being the appreciation that our students have for the experiences they had, particularly in the field and during extracurricular activities (lectures do not seem to resonate as much!).

Undergraduate enrolments in Year 1 are greatly buoyed by online and hybrid service courses (2133 ‘bums in seats’). Our major enrolments (Earth Science and Environmental Geoscience, combined) remain steady (high teens-low 20s), and we have 22 MSc students, 3 of whom completed their degree requirements this past year; 3 others are scheduled to defend within the next month and 3 MSc students have been accepted to start in January 2019.

All three applicants for NSERC Discovery Grants were successful, auguring well for continued funding of MSc students. Our faculty complement decreased by 1 (and LTA was not renewed) and our technical staff complement will decline by 1 next month when our long-time storeskeeper P. Barclay retires after 50 years. *Richard Cheel*

### **UNIVERSITY OF TORONTO, Earth Sciences**

Last year we hired two economic geologists: Dr. Melissa Anderson (PhD: UOttawa/GEOMAR) and Dr. Dan Gregory (PhD: CODES/Tasmania (trivia: they are both Canadian; the first Canadian faculty members hired in the department since Pysklywec 2000)). They help bolster the young core of hard rock people hired in the past 4-5 years: Dr. Zoltan Zajacz (ore deposits geochemistry; 2014), Dr. Xu Chu (metamorphic petrology; 2017), and help realign the department's research/teaching focus and strength. In addition, a

geophysicist, Dr. Semechah Lui (PhD: Caltech) was hired at UTM in geosciences, growing the complement of tri-campus geoscientists. We've been fortunate so far with all of our recent retirements/departures replaced (never a guarantee here), resulting in the evolution to a much younger department.

Our undergraduate numbers are off from peak numbers we saw in 2015 (successively from 2015-16: 182, 162, 152) to 130 in 2018/2019. This is mostly driven by the reduced enrolments in our specialist streams (APGO-accredited), whereas enrollment in the Major programs has been steady. We continue with strong emphasis on field/international education: aside from regular field camps and local class trips to the Sudbury area, Niagara gorge, etc. sites, extra field trips/courses in 2018-19 year include SW US, Turkey, Trinidad (12). These trips are heavily subsidized by our Advancement efforts and support from the Dean's office. Among all the field trips we have happening, we sometimes have smaller than expected numbers: it may be that our students are saturated with geoscience travel given their regular time constraints.

Our graduate numbers are essentially steady, with a total population of 50 funded students this year. Our real challenge in recruiting continues to be in recruiting high-quality domestic PhD students. We continue to have to work hard to achieve our university target here, whereas we get a lot of excellent international applications but can only admit a limited number of these. This year, the cost per supervisor to support either domestic or international grad students dropped to \$5000 for all graduate programs (given fairly heavy subsidies from departmental endowments). The UofT make a welcome decision to make international graduate tuition+fees equivalent with domestic tuition+fees.

*Russ Pysklywec*

### **QUEEN'S UNIVERSITY**

- Current Faculty/Staff complement:
- 12 tenured/tenure-track faculty
- new department chair 2017 - Vicki Remenda
- 4 tenured/tenure-track cross-appointed faculty
- 5 emeritus Professors
- 1 adjunct teaching Professors
- 31 adjunct research Professors
- 1 lab instructor/coordinator
- 5 technical staff
- 7 non-technical staff
  
- Current student/pdf enrolment:
- ~250 undergraduate students (stable)
- ~70 graduate students (stable)
- 2-3 pdfs



#### Undergraduate Programs:

- BSc - Specialization, Major, General, Minor
- B.A.Sc. (Applied Science - Engineering)
- BA - Major, General, Minor

#### Research areas:

- Earth Chemistry (Harrison, Jamieson, Layton-Matthews, Leybourne)
- Earth Engineering (Diederichs, Fotopoulos, Hutchinson, Remenda, Braun)
- Earth Evolution (Narbonne, Steele, Godin, Peterson)
- Earth Resources (Harrison, James, Olivo, Jamieson, Layton-Matthews, Leybourne)

#### Current Renewals:

- Anna Harrison - new experimental geochemist Sept 2018
- Elisabeth Steele - new physical sedimentology Jan 2019
- Linda Tsuji - new museum curator June 2018
- Anne Sherman - new lab coordinator Sept 2018

#### Current Challenges:

Retirements - Ron Peterson, John Hanes, Doug Archibald, Mark Badham

- Staff retirement/ retention - Departmental Manager, Lab Coordinator
- Field school & Field Teaching
  - *Location* - Move from Sutton, QC to Kaladar, ON.
  - *Duration* - Two-weeks at the end of 2nd year changing to one-week at the beginning of 3rd year & one-week at the end of 3rd year.
- Safety Protocols & Liability
  - Fieldwork & Field Schools/Trips
- Student Accommodations

#### Current Opportunities:

new Engineering Geologist - Assistant Professor (Shortlist)

- new Isotope geochemist - up to Full Professor (Dec.1, 2018 - close)
- new Earth System Geodynamicist - approved by University (Dec. 1 advertisement)
- new Environmental Engineer - approved by University for (Dec. 1 advertisement)