McGILL UNIVERSITY, Earth and Planetary Sciences

COVID-19 Teaching at McGill was offered in person in the 2021-22 academic year with the exception of courses of over 200 enrollment and 3 weeks of remote instruction in early January 2022. Undergraduate Field School was offered at its regular field sites in California. Many graduate students were able to travel and conduct field-based projects in the summer of 2022. Department events slowly resume. Students, staff and faculty work on reconnecting.

Students We currently have 24 MSc, 34 PhD students and 18 postdoctoral fellows. Undergraduate enrollment slightly increases from last year in both the Geology (7) and Earth System Science (8) programs, but the challenge remains in recruiting undergraduates from the CEGEPS in Quebec.

Faculty The department currently has 18 faculty members (not including emeritus, adjuncts, etc.), of which 1 is untenured. The department has four CRCs (Tier 2) and a James McGill Chair.

Future The New Vic Project business case (dossier d'Affair) is approved by the Quebec government. The project now moves on to construction phase with anticipated completion in 2028. Sustainability will be the research focus, which directly involves the EPS and other departments (e.g., AOS, Geography).

Yajing Liu

UNIVERSITÉ DU QUÉBEC À MONTRÉAL – Sciences de la Terre et de l'atmosphère – Academic year 2022-2023

Following the disruptions caused by COVID lockdowns, in-person activities returned to UQAM in summer and autumn 2021. Aside from a one-month hiatus in January 2022, where COVID numbers in Quebec forced a temporary return to online learning, we have been able to maintain in-person activities, including courses, labs and field trips. Travel restrictions, including for international travel, were lifted, allowing researchers and students to return to fieldwork and in-person conferences.

Student enrolment – Similar to previous years, enrolment in several of our undergraduate programs has generally decreased, following a trend that can be seen in many cases over the last 5 or more years. Covid has likely played a role in student numbers since 2020, with some known long-term effects like backlogs for study permits for international students, but the long-term trends show that this is not the only reason for the decline in numbers. The Masters and PhD programs are more stable, including a slight upward trend for both the professional (non-thesis) MSc and the PhD. The list below compares Autumn 2022 enrolments with those of the previous 4 autumn semesters:

Program	2019	2020	2021	2022
BSc in geology	79	85	57	45
BSc in atmospheric sciences	32	34	32	29
Certificate in applied geology	15	15	22	14
Certificate in sustainable energy resources	47	42	30	28
Certificate in atmospheric sciences	-	11	12	10
Major in geology	4	3	0	4
MSc in Earth sciences (no thesis)	11	13	15	16
MSc in Earth sciences (thesis)	30	29	28	26
MSc in atmospheric sciences (thesis)	14	15	16	16
PhD in Earth and atmospheric sciences	30	28	28	35

There are also currently 12 postdoctoral fellows active in the Department.

Faculty and staff – We currently have 24 professors, thanks to two recent hires, one in atmospheric sciences and the other in applied geophysics. In addition, we have permission from the university to advertise for a new position in Quaternary geochronology, and we are currently waiting to find out whether we can also advertise for a new position in satellite remote sensing. 2 of our professors are currently in semi-retirement, with one more due to leave the department at the end of December 2022. In addition to our regular professors, there are 2 emeritus professors, 19 adjunct professors and 14 sessional lecturers. 3 administrative staff, 2 IT technicians, 2 laboratory technicians and 2 research officers are also employed through the department.

Research centres – The department remains highly active in research, including via several different institutional or multi-institutional research groups. The largest of these is the multi-institutional strategic cluster Geotop, funded by the FRQNT. Of the 47 regular members, 18 are from our department. There are also 51 official collaborators and a large number of associated graduate students, postdoctoral fellows, research associates, technicians and other staff. Research themes are highly multi-disciplinary, but broadly centred around three main themes: (i) Past dynamics of the Earth system, (ii) Natural resources, (iii) Geohazards and anthropogenic pressures. The ESCER institutional research group comprises 12 regular members (of which 8 from our department), 12 associate members, plus graduate students, postdoctoral fellows and research associates. Their main focus is on regional-scale climate simulations, including climate/weather-related hazards, climate variability and northern climates. The RIISQ research group, a multi-institutional group including 7 members from our department, focuses on Quebec's flood risk, preparation, and mitigation strategies, combining science, technology, social science, economics and several other sectors. Many of our professors are also involved in external consortia and government and/or industry partnerships. Examples include economic geology, surface and

environmental geology, hydrogeology, isotope geochemistry, geochronology, weather and climate modelling, and satellite missions (e.g., CSA, NASA). Our researchers have been highly successful in obtaining federal and provincial funding, including grants associated with industry or government partnerships (e.g., MITACS, NSERC-Alliance), and several are PIs or co-PIs in large international research projects.

Challenges – Similar to previous years, student enrolment remains a major concern. The downward trend in the geological sciences at UQAM is likely to be further compounded by a unilateral decision made by the Quebec government to provide extra funding to certain targeted sectors, largely in the form of generous undergraduate student bursaries. One of these fields is engineering, and the implication is that all Quebec universities with "engineering geology" programs will automatically benefit from these bursaries, whereas those (like UQAM) with "geology" or "Earth science" programs will not. In terms of department personnel, over 40% of our current faculty members are likely to retire within the next 10 years, and the rate of replacement does not match the rate of attrition. Our capacity to bid successfully to the university for new hires is strongly related to student enrolment numbers, so the successful recruitment of new students becomes even more important.

This academic year, we intend to pursue an exercise in planning for the department's short, medium and long-term future, which includes a revision of our BSc geology program and an intensive focus on student recruitment and retention strategies.

Fiona Darbyshire

UNIVERSITÉ LAVAL, Geology and Geological Engineering

Students & programs

- Current student enrolment for the Fall 2022 is
  - BSc Geology : 33 students
  - BASc Geological Engineering : 84 students
  - MSc Earth Sciences : 22 students
  - MSc Environmental Technologies (course MSc) : 13 students
  - PhD Earth Sciences : 42 students
- Enrolment in undergraduate programs remains relatively stable. The steady increase in our number of graduate students that started a few years ago is continuing.
- Our MSc and PhD programs, given jointly with the Institut National de la Recherche Scientifique, was positively evaluated by an external committee in 2021. Our BSc Geology program was evaluated in 2022 and we received positive comments from the external committee.

Faculty and staff

- The department remains at 13 faculty members, 15 adjunct professors, one emeritus professor, and the following permanent staff: 4 professionals, 2 technicians, 2 secretaries. There are currently 6 research assistants and 5 postdocs funded by external grants.
- Challenges: renewal of a tenure-track faculty position in Geo-hazards and Ground Stability. We were able to get a CRC Tier 2 for that position but the candidate we selected took a position elsewhere and we had to give back the CRC to the university administration.

Research

- Microanalytical laboratory – CFI Innovation application (EPMA, FE-SEM, automated mineralogy SEM, XRD) – third attempt.
- Our research activities cover the following four broad domains: Mineral Resources, Water Resources, Geomaterials, Geo-Hazards. Our faculty members are active in several multidisciplinary research centers whose lead is in our department: Northern studies (*Centre d'Études Nordiques, province-wide research center, director is Richard Fortier*); Concrete infrastructures (*CRIB province-wide research center, director is Benoit Fournier*), Water Research Center (*CentrEau, province-wide research center, acting director is René Therrien*).

René Therrien

UNIVERSITY OF NEW BRUNSWICK, Earth Sciences

After two academic years of pandemic-altered campus life, it is good to be nearly back to normal this year (masking remains). While small class sizes and relatively low Covid case counts in the region had permitted us to continue offering in-person labs and field schools throughout, we are now fully back to in-person offerings of our programs, including a resumption in the gatherings for seminars, field trips and social events, that are vital for encouraging a sense of community in the department.

Our full-time complement currently consists of 10 faculty members, 4 technicians, and 1 admin assistant. Another technician and four postdocs/ research scientists are employed within research groups. We are down two faculty positions from three years ago, due partly to the retirement of CRC Chair Dr. John Spray, although he maintains an active research group as an Adjunct.

The Department hosts undergraduate programs in Earth Sciences and Environmental Geoscience that meet the educational requirements for P.Geo. licensure, as well as a more flexible Geological Studies program. We also offer programs jointly with other departments including Environmental Science (new last year), and Geological Engineering. Attracting undergraduates remains a challenge over the past few years (since highs of the mid-2010s) and a pressure point with the university administration. At the moment, we have ~45 undergraduate students spread over our programs, roughly evenly split between Science and Engineering enrolments. Our graduate students number 28 (16 PhD, 12 MSc).

Over the past five years, the department has boosted its strength in environmental geoscience by replacing retiring faculty with emerging researchers in micro-palaeontology/palaeoceanography and microbial geochemistry. These new faculty (Dr. Audrey Limoges and Dr. Allison

Enright) have established new labs and are contributing to an increase in the proportion of our students pursuing Environmental Geoscience. We are currently searching for an Environmental Geoscientist/engineer to replace an upcoming retirement in applied glacial/Quaternary geology.

One recruiting challenge we face in is a lack of Earth Science – related content in the provincial high school curriculum. In light of that, we are increasing our outreach in high schools this year, by employing a pair of student outreach ambassadors. At the other end of the undergraduate experience, we have proposed four new Certificate/micro-credential programs this year (currently undergoing academic review) for students who have graduated or are nearing graduation in related programs.

Karl Butler

ACADIA UNIVERSITY, Dept. of Earth and Environmental Science with focus on Geology and Environmental Geoscience programs

At Acadia University enrollment in geology has slowed down considerably though our departmental numbers are steady due to increased environmental science enrollment and continued intake from our 2+2 program with colleges. This year's numbers have increased slightly over 2020 and 2021, likely a post-Covid anomaly.

This year we have 12 first year students and ~40 majors in our geoscience programs (Geology and Environmental Geoscience). We have 70 majors in our ENVS program. Our departmental faculty numbers are holding steady, we have had 2 positions replaced with TT positions in the last 4 years. We presently have 8 faculty with 2 support staff along with between 3–5 per-course allocations required every year to maintain our programs. We will have 3 faculty and 1 instructor retiring in the next 4 years. We currently hold 3 NSERC grants, 1 SSHRC grant and also have faculty funded through NSERC Engage and CREATE as well as MITACS.

Our graduate program remains robust at 5 students in Geology and 4 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 and Environmental Science

Enrollments

Year	2019-20	2020-21	2021-22	2022-23 (so far)
Total UG years 2-4	89 (ENVS) 50 (ERTH)	95 (ENVS) 38 (ERTH)	122 (ENVS) 58 (ERTH)	126 (ENVS) 53 (ERTH)
Total grad	10 PhD 13 MSc	14 PhD 11 MSc	17 PhD 10 MSc	21 PhD 8 MSc
Total enrollment	162	158	207	208

Enrollments

Earth Science undergraduate student enrolments have been relatively stable over the past four years, with an overall increase in Environmental Science undergrads of 42% over the same time period. Graduate student enrollments have grown by 26%, with a decrease in MSc students more than balanced by an increase in PhD students. The change in proportion of PhD to MSc reflects a) the elimination of the international student differential fee for PhD students only, b) recruitment of new faculty with growing research programs and c) the establishment of an EES PhD student award that provides stable four-year funding for exceptional applicants, allowing for firm offers to be made early in the recruitment cycle.

Faculty and staff

In January of 2022, the department welcomed Dr. Kelvin Fong as the Elizabeth May Chair in Sustainability and Health, whose research sits at the nexus between the environment and human health. The department is conducting a search for a new assistant professor position that bridges the fields of Earth Science and Environmental Science. With that hire the department faculty complement will be 15 faculty and 5 full-time instructors.

Support for Teaching and Research

The National Facility for Seismic Imaging is now undergoing testing of the next-generation ocean bottom seismometers in offshore deployment. A growth area in the department is marine geology and geophysics, with a number of faculty benefitting from national and regional sources of funding for offshore expeditions related to hazards, climate change and georesources.

As a result of the EES merger, the department is embarking on significant renovations to teaching and research space (including new expansion into a wing of the building we occupy). One teaching/laboratory space is nearly complete, and the wing expansion project is due to start in spring 2023 after a year delay.

Challenges

COVID is still an issue, affecting faculty, staff and students in terms of absenteeism, ongoing mental health challenges, and disruptions to research (e.g., offshore expeditions). However, it seems to be a consensus that our teaching and related activities should be in person as much as possible. There have been significant delays to infrastructure upgrades to the department due to reduced workforce involving skilled trades and supply-chain disruptions.

Documentation for the EES department review was recently completed and submitted (last review was 2011!). It was a rather time-consuming process, but has given us quite a bit of insight on trends (mostly good) going forward. Looking forward to the external feedback.

James Brenan, chair

ST. MARY'S UNIVERSITY

Students & programs

— Current student enrolment for the Fall 2022 is
  - BSc Geology Majors: 24 students, of which
  - Honours: 4 students
  - BSc Geology-Environmental Science Double Major : 3 students
— BSc Geology Minor: 4 students
— MSc Applied Science (Geology): 8 students
— PhD Applied Science (Geology): 10 students
— Enrollment in undergraduate geology is slightly up this year, compared to 2020 (19) and 2021 (20)
— Graduate program enrollment remains stable
— Currently undergoing a department review

Faculty and staff

— Currently 7 full-time faculty, of which
  - 5 tenured professors, including 1 CRC tier II (2 full, 2 associate, 1 assistant)
  - 1 tenure-track assistant professor (Dr. Shawna White was welcomed in January 2020 as our structural geologist to replace Dr. Victor Owen who retired)
  - 1 lecturer
  - 1 post-doctoral fellow
— 2 professors emeritus, 6 part-time faculty
— 1 full time technician, 1 contract technician (currently undergoing job evaluation to reclassify as a full-time position)
— In January 2022, Dr. Erin Adlakha started a 5-year term as chair to replace Dr. Pierre Jutras

Research

— CFI JELF awarded to Dr. Erin Adlakha in 2020 to purchase a Super Light Element Micro-XRF, Bruker M4 TornadoPLUS Micro-XRF purchased and received in 2021. Capable of elemental mapping and major to trace elements quantification in bulk samples.
— Dr. Shawna White was awarded NSERC-DG in April 2022

Erin Adlakha

MEMORIAL UNIVERSITY

STUDENTS

Undergraduate Enrolment

Enrolment (total of majors) in the BSc/BSc(Hons) Earth Sciences program was at an all-time high in Fall 2014 (with 194 undergraduate students enrolled). Enrolment continued to fall each year until this year. In Fall 2022, we are seeing an increase in both the number of majors (~15% over last year) and the number of students registered in first year EASC courses (highest enrolment in EASC 1000 in a fall semester since 2013). Many students are looking for a career path which will see them working toward climate change action and environmental stewardship. Some students erroneously believe that this cannot be achieved through a career in Earth Sciences, and so work has to be done on educating students about the possible career options for them in these fields. There was a great demand for EASC students for field work in mineral exploration in NL this summer, and all of our students who wanted such jobs, had them, often with multiple offers.

Year	Fall 2018	Fall 2019	Fall 2020	Fall 2021	Fall 2022
Undergrads					
EASC majors/hons 2nd-4th year	82	59	59	47	55
Grads					
MSc	48	52	50	39	37
PhD	24	26	27	26	30
Total grad	72	78	77	65	67

Graduate Enrolment

Graduate numbers are slow to rebound, but the numbers obscure the fact that a large number of grad students wrote, submitted and graduated during COVID lockdown, then faculty did not recruit new students until sure they could come and do field and lab work. 15 were accepted in September and more will follow as new faculty build their programs. International students are still having difficulty in securing VISAs/study permits. Our long –term normal has been ca. 80 graduate students.

FACULTY COMPLEMENT

Five new faculty hired in core areas are now in place (ign pet; sed/strat; paleo; structure; mineralogy)

Total = 23 faculty members (including three University Research Professors) plus one cross-appointed with GEOG and BIOL

- One CRC Tier I in Boreal Biogeochemistry
- One CRC Tier II in Marine Geology
- One Hibernia Project chair in Tectonics of Sed Basins
- Ten retired emeritus or Honorary Research professors
- Five adjunct faculty
- Seven post-doctoral fellows (including 2 Marie Curie fellows)

STAFF

Five office staff and 10 research, technical and instructional support staff

CHALLENGES

University budget cuts – most faculty hiring now frozen.

Low enrolment in undergrad and grad programs, but we are optimistic as 1st year enrolment is way up.

Staffing in the department office – non-competitive salaries, workload, causing a lot of movement of staff in the university overall. Pandemic fatigue and anxiety is still a factor affecting faculty, staff and students.

OTHER NOTES

Last 3 years and on-going - multiple upgrades/ replacements of 'unsexy' but important equipment; new reverse- osmosis water supply for entire building, new Millipore water purification systems in multiple labs, new crushing equipment, microwave digestion system, fluxer and more.
Also refurbishment of space; lab clean- outs, new floors, and repairs, painting of many labs and rooms.
Will be undergoing our Academic Unit Planning exercise this year, the first in over a decade, with new faculty, new ideas and new plans.

Greg Dunning

YUKON UNIVERSITY, Earth Sciences

After a program reset accompanying redevelopment, the 2022-2023 academic year marks the first year that both first- and second-year geoscience courses have been offered concurrently. Enrolment is down significantly across the institution, and this is mirrored in introductory geoscience courses. Our introductory offerings (Physical Geology, Historical Geology) have enrolments of 5-10 students, as do elective courses (Physical Geography, Soils) offered by the department for other programs. Core second-year courses (e.g. Mineralogy, Structural Geology) have similar enrolments (5-10). The number declared Earth Sciences majors stands at 12.

The department has two full-time faculty (J. Cubley, M. Samolczyk), supplemented with sessional instructors from the university's Yukon Research Centre. A 0.75 FTE term instructor, C. Morgan, was hired for the academic year with the hope of transitioning this into a longer-term role. An additional group of permafrost and geoscience researchers (5) is housed in the Yukon University Research Centre with variable degrees of engagement with the instructional unit.

Department faculty have been heavily engaged in a new project developing virtual geology fieldtrips across the territory. This multi-year project is funded by the GEM GeoNorth program. Inaugural field trips in Summer 2023 focused on skarn mineralization and mining history in the Whitehorse Copper Belt, as well as Triassic reef complexes and their constituent fossil assemblages. Next summer's field trips will highlight the Neogene and Quaternary volcanic history of the territory, as well as faulting and seismicity along the Denali fault.

YukonU is partnering with Vancouver Island University to offer a joint second-year field school on Quadra Island in May 2023. This is in response to early-season logistical complexities in the North (snow!), and a desire to further strengthen a block transfer partnership between the two institutions.

The Earth Sciences program remains third-party funded, outside of the core grant provided to Yukon University by the territorial government. This has insulated the program somewhat from the general fiscal pressures facing other areas of the university. Sustainable enrolment remains to biggest concern, but given the relative infancy of geoscience at YukonU, and the program's clear alignment with the institution's strategic goals, the program is on stable footing at present.

Joel Cubley

UNIVERSITY OF VICTORIA, School of Earth and Ocean Sciences

COVID-19 Effects and Return to Face to Face Instruction

Undergraduate teaching at UVic in 2021/22 was offered in-person with online accommodation for just a single course in SEOS. We were able to teach our third- and fourth-year Field Schools in their regular manner with field sites on Vancouver Island and the Canadian Cordillera. For the first time we were able to offer our Ocean Sciences Field School (EOS 401) which was hosted by the Bamfield Marine Sciences Centre on Vancouver Island with a full complement of students. Undergraduate registration numbers in 2021/22 are down slightly reflecting a significant decrease in Faculty of Science enrolments. Workloads remain high and general fatigue and anxiety about pandemic and the uncertainty surrounding new variants still weighs on mental health of faculty, staff and students.

Undergraduate Program/Course Changes

SEOS continues to respond to changes suggested, and advice given, through our Academic Program Review process that was completed in 2020. A new program in Climate Science (joint with the Geography Department) which will have 2 streams: Physical Climate Science, and Impacts, Adaptations and Mitigation has been approved by the Faculties of Science and Social Science, and by the Senate Committee on Planning. It was approved at the October Senate meeting and by the Board of Governors in November 2020. The program is currently under review with the Ministry and we expect that approval is imminent. The three new courses cross-listed between SEOS and Geography were taught for the first time in the 2021/22 academic year. As part of the revision of our Earth Sciences program we have introduced a new coding and data analysis course (EOS/GEOG 230) that was taught for the first time in fall 2021.

Faculty/Staff Changes

SEOS currently has 20 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 manger, and a scientific assistant.

Anne-Sofie Ahm, a geochemist who uses sedimentary rock records to reconstruct the evolution of seawater composition on long time scales, will joined the faculty in April 2022. We have hired 5 new faculty members in the past 5 years, which represents a significant rejuvenation (but not growth) for the School.

There exist significant challenges in staffing at SEOS that have been exacerbated by a hiring freeze at UVic in response to an unexpected, campus wide, enrollments shortfall this semester. Kristi Blyth began as SEOS Administrative Officer on July 1, 2021 and was recently (Oct. 11, 2022) seconded to the Faculty of Fine Arts until Sept. 15, 2023. Kay del Sol has taken on the role of temporary Administrative Officer as Oct. 24, 2022 and is currently being onboarded. Allison Rose, who had been with SEOS for 14 years, as Departmental Secretary took a leave of absence for Professional Development in fall 2021 and tendered their resignation Oct. 2022. We are

currently seeking an exemption to hire a new Departmental Secretary. This overturning of key administrative staff, with two thirds of the office as temporary hires, represents a challenge for SEOS moving forward.

Jay T. Cullen

SIMON FRASER UNIVERSITY, Earth Sciences

Faculty and Staff

We have 15 faculty members consisting of: 2 Associate Professor, 9 Full Professors, 1 Teaching Professor, 1 Senior Lecturer, and 2 Lecturers. We also have 24 adjunct faculty, 4 Associate Members, and 4 Professor Emeriti. Our staff consists of two office staff responsible for all administrative activities, 1 Manager of Operations, and a Resource Specialist.

Recent and upcoming Changes

We continue to face important challenges with our faculty compliment. This year, 1 Senior Lecturer (Robbie Donald) and 1 Professor (Dr. Dan Marshall) retired we have one additional retirement coming next year. We were able to hire a new Lecturer (Dr. Reid Staples) but will be working closely with the new Dean of Science (starting November 1st) to make the strongest case possible for faculty renewal.

Enrollments

Our undergraduate enrollments have increased slightly, and we now have a total of 67 students consisting of 64 Majors, 2 Minors, 1 Honours. 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 continue to focus efforts on Recruitment and Engagement along with ongoing outreach in local high schools. We also continue to review our undergraduate program via detailed course mapping based on educational goals and core competencies. The aim is to streamline and ensure course offerings given the reduced faculty complement. In spite of the reduction in faculty, our Graduate program remains stable with 47 students representing 23 PhD and 24 MSc.

Notable Awards:

- Professor (Emeritus) Doug Stead: New PhD thesis Award named in honour of Doug by the Canadian Rock Mechanics Association

Challenges:

- Faculty coming up for retirement. We remain concerned about faculty renewal.
-Space
-Low Enrollments

Glyn Williams-Jones

UNIVERSITY OF BRITISH COLUMBIA – OKANAGAN CAMPUS

The Department of Earth, Environmental and Geographic Sciences currently has 5 Professors, 5 Associate Professors, 2 Associate Professors of Teaching, 2 Assistant Professor, 2 Lecturers, and four support staff. One faculty member is cross-appointed with Biology. Two are seconded to Associate Dean positions in the Faculty of Science.

Dr. Bernie Bauer retired at the end of December 2021. Dr. Jeff Curtis, Dr. Ian Walker and Dr. Ian Saunders retired in June 2022. Dr. Yuan Chen started a 0.5 FTE reduced time appointment in July 2022 and will retire at the end of June 2024. Dr. John Greenough and Dr. David Scott are on study leave during the 2022-23 academic year. Dr. Ed Hornibrook will step down as head of department at the end of June 2023 after eight years in the role.

Dr. Rob Friberg and Dr. Éowyn Campbell joined the department as Lecturers in September 2022. Ms. Deborah Barnett started as Senior Administrative Assistant in October 2022.

The department expects to appoint an Assistant Professor in Geomorphology in early 2023. Adverts will be posted shortly for an Assistant Professor (tenure track) in Earth Observation and an Associate Professor (tenured) in Watershed Science. The department also is recruiting a 1.0 FTE teaching technician.

There are currently 19 M.Sc. and 14 Ph.D. students in the Earth and Environmental Sciences graduate degree program. The department also has four postdoctoral fellows, including one Banting Fellow.

A new Bachelor of Sustainability degree program hosted in the department welcomed its first cohort of 30 direct entry majors in September 2022. The B.SUST program is administered collectively by the Faculty of Science, the Faculty of Arts and Social Sciences, and the Faculty of Creative and Critical Studies.

Dr. Mathieu Bourbonnais secured $334k from the UBC Okanagan Excellence Fund to develop a new micro-credential certificate program in Wildland Fire Ecology and Management.

Dr. Kyle Larson received the 2022 UBC Okanagan Researcher of the Year Award in Natural Science and Engineering. Department Senior Administrative Assistant Janet Heisler received the 2022 UBCO Staff Award of Excellence in the category Enhancing the UBC Experience.

The Charles E. Fipke Foundation endowment to the department is now complete and provides four $10,000 awards per year to EESC undergraduate and graduate students.

A donation of $100,000 to the department from Barry Silver and Ethel Johnston was matched by UBC. For the next four years, the donation and matching support will fund one Ph.D. student and four M.Sc. students in the area of watershed science.

Edward Hornibrook

MOUNT ROYAL UNIVERSITY, Earth and Environmental Sciences

Enrollment: Undergraduate enrolment is steady at 215 students, spread over a BSc–Geology (87) and BSc–Environmental Science (128). We also have 9 students in BSc–General Science with concentration in Earth Sciences, and 4 students taking Minors in Geography. In 2022–23 we will have approximately 1400 students registered in service or general education courses.

Faculty & Staff: The department currently has 18 tenured/tenure-track faculty, 1 emeritus professor, 2 full-time lab instructors, 1 senior lecturer, and 3 technologists. Our longest serving faculty member, Dr John Cox retired in 2022. Two new faculty members, one new lab instructor, and one technologist joined the department in summer 2022.

Research: Our research activities in geology cover the following five broad domains: mineral resources; radiogenic isotopes and tectonics; marine geology; ichnology & palaeontology. Faculty are funded through NSERC Discovery, NSERC SPG, CFI, CFREF, Metal Earth, and other external grants. Fall 2002 saw the opening of new lab spaces and purchase of equipment through CFI.

Highlights: Resume the international student exchange agreement with the University of Hull. Our department has set up a large endowment fund to support direct costs of field work for student trips and research. Submission of a new option (concentration) of Environmental Geoscience that meets the requirements of Association of Professional Engineers and Geoscientists of Alberta.

Challenges: Finding space to house contract instructors and research assistants, and store research equipment and rock collections with aging building infrastructure. Restarting International field schools in 2023; courses are based in Iceland and Cyprus. Implementation of new budget model and alternation to timeline for budgetary year end.

Jeff Pollock

UNIVERSITY OF SASKATCHEWAN

Faculty complement

There has been no change in the faculty complement this year. We have 16 full time faculty, down slightly from previous years. Faculty includes 2 CRCs (Pickering and George), 1 NSERC IRC (Lindsay), the Murray Pyke Endowed Chair (Eglington) and the McLeod enhancement chair (Mangano). Of our 16 faculty, 14 are full Professors, 2 are Associate and 1 is an Assistant Professor. Research spans most areas of geology as well as geophysics, environmental geoscience and chemistry, and paleontology. Much of our faculty is nearing retirement age. However, financial constraints within the university are such that hiring replacements has not been occurring.

Undergraduate Affairs

We offer undergraduate programs in Geology (48 students enrolled in the program), Geophysics (3), Paleobiology (14) and Environmental Geosciences (7). The environmental geosciences program graduated its first student in 2021. Classes have been entirely in-person since February of 2022. Masks are recommended but not required.

Undergraduate student numbers are still low and are well below their peak values in 2013. Commodity prices are now high and graduating students are readily finding employment in geoscience-related jobs and so we are hopeful that the student numbers will increase in the next few years.

Students returned to Zortman, Montana at the end of summer for a field school for the first time since 2019. A field school was also run to Asturias, Spain and a Geophysics field school was also offered in May of 2022. Plans are underway to offer a new field school in environmental geoscience.

Engineering at U. of S. has overhauled their first year offerings and all incoming engineering students will now take a 3 week modular course in geology. This course was offered for the second time this year and in-person for the first time.

Graduate affairs

Graduate student numbers remain similar to previous years (55 graduate students, roughly 2/3MSc and 1/3 PhD).

Sam Butler

BRANDON UNIVERSITY – Department of Geology

Current Faculty:

- 4 Full-Time Faculty (all Full Professors), 1 Half-Time Professional Associate (shared with Northern Manitoba Mining Academy), 1 Full-Time Instructional Associate (Micro Analytical Facility Director), 1 Two-Year Term Full-Time Instructional Associate (1^{st} to 4^{th} Year Geology Labs)

Programs:

- Undergraduate Geology Degrees: 3-Year Major, 4-Year Major, and 4-Year Honours
- Undergraduate Program Streams: Geology, Environmental Geoscience, Palaeontology and Stratigraphy
- Masters of Environmental and Life Sciences (MELS)

Current Student Enrolment:

- Geology Majors (16 students)
- Geology Minors (11 students)
- MELS (2 students)
- Service Courses (≈ 150 students)

Major Short-Term Challenges:

- Record low student enrollment (i.e., still going down).
- Two-Year Term Instructional Associate position.

Simon Pattison

LAKEHEAD UNIVERSITY, Department of Geology

The department consists of (for the next 18 months) 7 full time faculty members (3 full professors, 3 associate professor sand 1 assistant professor), 2 emeritus professors, 1 administrative assistant, 2 technicians (lapidary services), 1 limited term appointment contract lecturer at the Orillia and Georgian College campuses. In addition to core faculty, our undergraduate program at the Thunder Bay campus is supported by several (3-4 per year) contract lecturers. The department also has 11 adjunct professors and 2 professional associates. Dr. Noah Philips joined the department in January 2022 as an assistant professor in structural geology. The department has two research chairs, Dr. Pete Hollings, NOHFC IRC Chair in Mineral Exploration, and Dr. Amanda Diochon, who was recently appointed for a 3-year term as the Faculty Science and Environmental Studies Research Chair. We have one

phased retirement that will be completed in 2024 and are expecting an additional retirement over the next couple of years.

The 2022 winter and fall terms were busy as the department was engaged in our cyclic program review. The rather extensive three volume dossier was prepared over the winter term, with a virtual site visit with the reviewers (two external and one internal) held in September. We are currently waiting on the reviewers' report (due sometime in November) before preparing our response and implementation plan.

Our enrolment numbers have held steady through the pandemic and starting to see some growth (based on our second-year geology and graduate enrolment). We currently have 50 students in our undergraduate programs 31 geology, 9 (environmental) Earth science and 10 in water resource science. In addition, we have seen growth in our MSc geology program, where we now have 14 enrolled. Our graduate program has seen an increase in the number of international students, with another three candidates expected to start they program in January. To help our enrolment we are in the process of establishing a college transfer program.

The Lakehead University Faculty Association signed a one-year collective bargaining agreement in September. This is the last year (hopefully) that we will be confines of Bill 124 (limiting monetary increases to 1%), which did limit negotiations. Notwithstanding these challenges, our association did manage to negotiate conversion of future pension contributions to a defined benefit pension plan (starting January 2023).

The greatest concern for our department is the replacement of retiring faculty and securing a permanent instructor for our courses at the Orillia campus and Georgian College partnership. The current financial status of the University is concerning and reflects a university-wide issue of failing to meet our enrolment targets. In part this reflects demographic changes in Northern Ontario (an issue that all Northern Ontario universities are facing), but also a decrease in international student number (due to the pandemic and delays in visa processing). Consequently, new hires and faculty replacements are even more challenging than they have in the past. In addition, tighter financial oversights have been put in place, including the requirement to have any non-research expenditures in excess $500 approved by the Provost. While expenditures for delivery of programs and recruitment have not been significantly affected, requests for non-recruitment-based travel etc. are being denied. *Andrew Conly*

UNIVERSITY OF WESTERN ONTARIO, Earth Sciences

Faculty complement: 20 full-time faculty members (newest to start January 2023), 26 adjunct faculty members

Staff/ Student complement:

- 4 Administrative Staff
- 10 Research and Technical Staff
- 75 graduate students, 151 undergraduate students in years 2,3, and 4 (over half are in Environmental Science), 1767 undergraduate students registered in service (no pre-requisite) courses

Programs:

- Graduate (MSc and PhD) programs in Geology and Geophysics
- Collaborative Graduate Programs in a)Planetary Science and b) Hazards, Risk, and Resilience
- Joint JD/ MSc in Geology or Geophysics and Law
- BSc Honors Specialization for Professional Registration for Geology, Geophysics, and Environmental Science
- BSc Honors in Environmental Science
- Majors in Geology, Geophysics, and Environmental Science

Major events in past year:

- First full year hosting the Environmental Science program
- New faculty hire in Sedimentary Geology
- Establishment of endowed Robert Hodder Chair in Economic Geology
- Search for faculty position in Geomicrobiology
- New Chair effective July 1st, 2022 (Prof. Desmond Moser)

Goals for coming year:

- Launch of Indigenization path for Department supported by Office of Indigenous Initiatives, in parallel with EDI goals of UWO
- faculty renewal while increasing graduate and upper-year undergraduate enrolment *Des Moser*

UNIVERSITY OF WATERLOO, Earth and Environmental Sciences

Faculty, Staff, Postdocs and Research Associates

There were no new faculty hires in the last year. We continued to see the growing positive impact on our teaching and research activities over the past year, however, as a result of a number of new hires spanning a wide range of research areas made in the preceding few years. We hired an Administrative Officer in July, 2022, a newly-created senior staff position to manage HR, planning, space, safety, communication and budget.

Faculty, Staff, Postdocs and Research Associates

Regular Faculty (tenured & untenured)	22
Lecturers (definite term & continuing)	4
Postdocs	11
Research associates	6
Staff (permanent)	8
Staff (contingent on funding)	7
Research staff	30+

Current Student Enrollment

We have 245 students in all years combined within our undergraduate Earth and Environmental Sciences programs (Environmental Sciences, Earth Sciences) and 48 in Geological Engineering. This number includes 98 students enrolled in our Water Science 2+1+1 international partnership program with the China University of Geosciences Wuhan (CUGW). For our Fall 2022 first-year enrollment, we have 36 first year incoming students – the highest enrolment in recent years, 24 in Environmental Sciences and 12 in Earth Sciences, almost all in co-operative education.

The Geological Engineering program enrolled 10 students, all in co-operative education. The director of the Geological Engineering Program has developed a comprehensive strategy that includes reaching high school students, to maintaining engagement with alumni. The Geological Engineering recruits are very qualified, but there is not a sufficient number of applicants to our program.

Our Graduate program enrolment is currently at 88 students (44 PhD and 44 MSc). We admitted 10 MSc students and 5 PhD students in 2022.

Undergraduate Students (total, all years)

Environmental Sciences	145
Earth Sciences	100
Geological Engineering	48

Graduate Students (total)

MSc	44
PhD	44

Undergraduate Fall 1st year enrollment	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
Earth Sciences	31	20	24	25	19	36
Geological Engineering	20	17	12	13	10	10
Graduate new enrolment	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**
MSc	27	20	17	20	16	10
PhD	5	8	6	9	5	5
Total	32	28	23	29	21	15

Teaching

The Winter to Spring to Fall 2022 transition saw mostly online, to mixed online/on-campus to mostly fully on-campus course offerings, respectively. Faculty were able to provide field experiences in a small number of courses throughout much of the pandemic, and enthusiastically embraced the opportunity to return back to normal in our Spring 2022 Field School, where 82(!) undergraduates learned to map in the Sudbury area. Field experiences across the board were back to normal during the Fall 2022 term, which students appreciated. We continue to expand our on-line course offerings, building on the material and effort put into the virtual instructing environment as a result of the pandemic.

Other Challenges

We are continuing our efforts to enhance outreach to local high schools in concert with institutional and faculty-level initiatives. We continue to focus on clarifying the distinction between all environmental options on campus and what we offer in the Geosciences. The Geological Engineering program has similar challenges in differentiating from Environmental Engineering.

Mario Coniglio

McMASTER UNIVERSITY, School of Earth, Environment & Society

SEES has a complement of 26 fully appointed faculty, and an additional 4 faculty members with joint appointments with other units at McMaster. The 26 faculty include 4 teaching faculty and 22 research professors. 13 of the research (full appointment) professors would be considered either earth or environmental scientists and of these, and all hold NSERC awards. Among this faculty group, 2 members hold CRC chairs: Mike Waddington is a Tier 1 Chair in Ecohydrology and Alemu Gonsamo is a Tier 2 Chair in Remote Sensing of Terrestrial Ecosystems. Janok Bhattacharya is the Susan Cunningham Research Chair in Geology, a privately funded Chair. Dr. Elli Papangelakis was the newest faculty member to join the School in January 2022, and she steps into the new privately endowed Fairley-Gadsby Chair in Fluvial Geomorphology, focusing on stream restoration.

The School of Earth, Environment and Society has received the second highest sum awarded of any unit ($36,269,364.00) within the Faculty of Science for external research funding awarded installment total between 2013/2014 - 2019/2020. SEES ranked first in installments for 2 of the last 7 reported research fiscal years within the Faculty of Science (2013-2020) in 2017-2018 and 2018-2019; in 2016-2017 and 2019-2020 the School ranked second in the Faculty of Science.

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 earth sciences program, as well as a 3rd year field course. Although our 2nd year field course ran in person and included work in northern Ontario, we continued to experience the impacts of the pandemic in 2022 and our 3rd year field camp remained as a mix of virtual and local content as was described in last year's report. Other complications meant that we could not access the Whitefish Falls area, and we are exploring options for new locations for next years' field camp. Conducting the camps in the local area meant that students

came and went each day and we did not need to worry about accommodation issues. COVID-19 also meant that some faculty members continued to experience delays or difficulties in reaching their field research locations.

Our graduate student numbers have grown slightly over the past two years, and now stands at 95 students. Of these, the majority are full time (approximately 90) and 'in time' (73). Approximately 50% are PhD versus MSc, with a slight majority of graduate students in earth and/or environmental science. At the undergraduate level, we had 247 undergraduate majors in our BSc programs in 2022, with enrollment numbers trending upward over the past few years. Of these, 95 students are in our Earth and Environmental Science programs, with enrollment also increasing from 60 in 2016. The balance of BSc students are in our Environmental Sciences and Biodiversity and Environment Science programs. We continue to emphasize APGO certification and are adding new courses in geomorphology with the arrival of Dr. Papangelakis. *Bruce Newbold*

BROCK UNIVERSITY

As of January 1, 2023, the faculty complement of the Department of Earth Sciences will consists of 7 tenured faculty members and 1 three-year LTA. Two of those tenured faculty members are currently on multi-year phased-in retirement plans. Hence the department will undergo significant changes over the next several years. Enrollments this year continued to be up from the last few years.

The biggest departmental news is that after several years of preparations, we finally have government approval to offer our new program, "*Earth and Planetary Science Communication*". This program is a Bachelor of Arts and Sciences (BASc) (https://brocku.ca/mathematics-science/earth-sciences/basc-earth-planetary-science-communication/) which is homed in our department and which will be administered by a multi-departmental committee. Feedback from our recruitment office is that there is a fair amount of demand for such a hybrid program. First-year enrollments next September will provide some quantitative data.

Research News:

Professor Mariek Schmidt – A participating Scientist on the Mars 2020 rover mission, played a key role in a recent study published in Science about an olivine cumulate outcrop in Jezero crater.

Kevin Turner has been building on a lake and river hydroecological monitoring program in northern Yukon that began in 2007. His lab has integrated analyses of lake and river water biogeochemistry with high-resolution remote sensing to identify the impacts of climate change on permafrost landscapes. The next phase of his collaborative research program will continue to build on these data and identify the relations among land cover, surface water, and ground conditions that are required to predict lake, river, and catchment responses to future changes in temperature and precipitation.

Led by Francine McCarthy, more than 50 researchers from Brock, Carleton, McMaster, Queen's, University of Regina and University of Toronto, the Canadian Museum of Nature and the Royal Ontario Museum as well as several European institutions have investigated the potential of the varved sediments of Crawford Lake to define the Anthropocene. The freeze core that is 'Team Crawford's' proposed candidate is archived in the National Biodiversity Cryobank of Canada at the Canadian Museum of Nature. It is one of 9 proposed candidate GSSPs currently being considered to present to the International Commission on Stratigraphy, with the announcement of the candidate chosen by the Anthropocene Working Group of the Subcommission on Quaternary Stratigraphy to be made at the Haus der Kulturen de Welt in Berlin on December 8. A special volume of *The Anthropocene Review* presenting the case for each of the potential GSSP candidates is anticipated early in 2023. *Frank Fueten*

UNIVERSITY OF TORONTO, Earth Sciences

COVID impacts

The in-person life gradually started to return to our Department over the summer. The 2021-2022 academic year was challenging for students and faculty alike due to periods of remote instruction and remote work, and difficult transitions between them. The winter term was particularly difficult with a sudden suspension of all in-person activities for over two months, beginning in the middle of the exam period following the Omicron COVID surge. The year was particularly challenging for faculty, staff and students who were ill or vulnerable, have young children or other caregiving responsibilities. The 2022-2023 academic year has had a much brighter start with staff returning to work on-site and courses taught in-person. We are continuing to see mental health impacts emerging from the pandemic and the UofT has invested considerable resources in a new mental health strategy for students.

Teaching

The UofT Faculty of Arts and Science is engaging in a pilot study allowing Departments to offer up to 10% of course offerings online, with pedagogical justification. We are offering a large first-year breadth course asynchronously online, and also have our computational geology and upper-year biosphere-atmosphere interactions course online. The instructors in those courses are using innovative techniques to engage the students and we are pleased with the results in terms of increasing access and accommodating diverse learning styles. Otherwise, students seem very pleased to be back to the classroom and back in the field. We had a large group of summer undergraduate research students engaged in field and lab-based projects and have been running our full slate of field courses in various locations around Ontario. We are also resuming international travel with students and have two groups participating in International Course Modules this fall in Chile and in Turkey. Enrollments are holding steady in our undergraduate geoscience, geophysics and Earth and environmental systems programs. Graduate applications were down somewhat

and we are looking at our recruitment strategies. We also welcomed a new member of staff in the role of "Teaching Lab and Field Coordinator" and we are very pleased about the impact we are seeing from this position already.

Faculty complement

We are searching for two faculty positions this year: Near-surface geophysics (Assistant Professor) and Mineral Systems (Open rank). We are looking ahead to faculty complement renewal as we have several retirements upcoming in the next few years. We held a Departmental retreat in September 2022 to discuss our Departmental vision. After 2.5 years of remote meetings, it was very productive and fun to meet in person. Discussion topics included the importance of Earth sciences research in addressing the climate and sustainability crises, and how to better engage collaboratively on those topics. Data-science approaches and analytical excellence are also areas of core interest.

Research labs

Renovations are underway for our new GEMINAE lab, a femto-second laser-ablation mass spectrometry facility for metal isotopes, co-developed by Professors Sio, Gregory and Chu. The lab is expected to open in 2023 and we look forward to welcoming interested researchers and collaborators from Canada and internationally to use this facility alongside our other Departmental analytical facilities.

Other projects

We are updating our website to better highlight our research and teaching activities. Our Reconciliation, Equity, Diversity and Inclusion Committee (established in 2021) has met and includes faculty, staff, undergrad and grad students. We have discussed land acknowledgements, events and activities, development of a resource list for Department members and have been supporting instructors seeking to incorporate REDI materials into curriculum. Graduate students have been discussing reconciliation in their core course, using materials such as Wong et al., 2020. Towards reconciliation: 10 Calls to Action to natural scientists working in Canada. *FACETS.* https://doi.org/10.1139/facets-2020-0005

Sarah Finkelstein

CARLETON UNIVERSITY, Earth Sciences

Enrolment: Our four-year undergraduate enrolment has decreased slightly to 87 students, spread over 10 programs and concentrations. We also have 11 students in B.Sc.H. - Environmental Science with Concentration in Earth Sciences, and 41 students taking Minors in Earth Sciences. In 2021-22 we have over 2465 students registered in service or general interest courses, compared to 2332 in 2020-21. For 2022-23 we have 39 graduate students, 16 MSc and 23 PhD. Carleton now waives the non-resident tuition for international PhD students.

Faculty and Staff Members: We have grown to 11 faculty members including one cross-appointment with the Institute of Environmental Sciences. Within this group we are pleased to welcome our new Environmental Sedimentologist, Dr. Lyle Nelson, newly graduated from Johns Hopkins, as well as Dr. Peter Crockford (Ph.D. McGill), our newly appointed Environmental Geochemist who will be formally joining the department in July 2023. In collaboration with the Institute of Environmental Sciences we are recruiting a new cross-appointment junior faculty member whose research will be within the broad area of climate change mitigation/ adaptation. Our teaching staff has been bolstered by the addition of Dr. Wasiu Raji, a term appointment instructor in geophysics, and Dr. Geoff Pignotta, our First-Year Laboratory Coordinator. Geoff has also been appointed as a Research Adjunct Professor in the department, which permits him to supervise students. Dr. Giorgio Ranalli continues as our only Distinguished Research Professor and Dr. Richard Ernst continues as our Scientist in Residence. We have six additional administrative and technical staff members, and we continue to hire several contract instructors each semester to cover off vacancies due to sabbaticals and other leave of absences.

Retirements: Professor George Dix, our sedimentologist, retired in July 2021 and has been appointed Professor Emeritus. Tim Mount, our Sample Preparation Technician, retired in September 2022, and an international search is presently on to fill this critical position.

In Memoriam: The department is saddened to report the recent passing of three former members. The irrepressible Jack Hogg, a staff member who played a key role in departmental operations for 30 years from 1965-1995, passed away on February 25th, 2021. Dr. Kenneth Hooper, who was the department paleontologist, passed away in Ottawa on July 28, 2021, just shy of his 99th birthday. Most recently we lost our former and internationally renowned mineralogist, Prof. George Chao, who passed away on May 2nd, 2022, at the age of 91.

Upcoming Events: The department will celebrate its 70th Anniversary in 2023. There are many alumni events planned around this milestone including an Alumni weekend during Fall 2023. There is also a special Alumni-Student anniversary field trip to be led by Tim Patterson and Lyle Nelson, that will involve a motorized raft exploration of the Grand Canyon from May 1-7, 2023. There are three spots left on this trip if anyone would like to join us.

Tim Patterson

UNIVERSITY OF OTTAWA, Earth and Environmental Sciences

Human Resources

Overall enrolment in our undergraduate and graduate programs remains relatively stable.

- 233 BSc students (Honours, majors): 170 in the environmental science program and 63 in geology, environmental geology, and geology-physics programs
- 6 PDFs, 29 PhD students, and 30 MSc students (note: 50% of these students are 'post-program' but still registered as they write up final documents)
- Faculty of Science enrolment continues to increase; FoS is the second largest Faculty behind Social Science; uOttawa total enrolment is now 49K.

- The GEO programs meet different requirements of Association of Professional Geologists of Ontario (PGO), and the EVS program is certified under EcoCanada
- 15 faculty members, including:
  - 1 CRC II Professor (in AMS technology, applications and development)
  - 1 Newmont Chair in Economic Geology
  - 1 University Research Professor
- 1 replacement professor
- 2 teaching support staff
- 4 administrative support staff
- 1 research associate
- 24 research staff

HR Updates

- Busy year: hired Brian O'Driscoll as Newmont Chair in Economic Geology, Oliver Warr as noble gas geochemist / environmental geoscience, Kyra St-Pierre as geomicrobiologist, and Geneviève Robert as experimental petrologist. Two profs have announced retirement within one year. Hopefully we will reach stasis at some point!

Physical Resources

- Continuing issues: difficult to recruit researchers who require substantial lab space and/or start-up funds. Substantial CFI allocations allotted to CRC positions only. Slow response by Facilities / physical resources for lab renovations once funds are in place.

Noteworthy

- AE Lalonde AMS Laboratory was renewed as a national facility via a Major Science Initiatives (MSI) award; thanks to Brett Walker for leading this effort.
- All courses in person; all covid health protocols are lifted.

Challenges

- Continuing to be mindful of mental health as society re-opens.
- Need to grow to stay alive. Ideal rate is +2% / yr, but at the Faculty-scale, this is unsustainable.
- New graduate student admission scholarship procedures: now a quota system is in place, where MSc students only get 4 terms (1.5 yr) of support and PhD still get 12 terms (4 yrs).
- Teaching capacity is still down 20%; very difficult for bilingual program (Francophone students are ~30% of university student population).
- uOttawa has a $75M deficit in its annual budget; FoS had budget cut of 3%; affects hiring and physical resource projects.

David Schneider

QUEEN'S UNIVERSITY – Department of Geological Sciences & Geological Engineering

Departmental Snapshot

- 19 faculty, including two jointly appointed to other units, and numerous highly qualified adjunct instructors
- Programs include B.Sc. (Maj), B.Sc. (SSP), B.Sc., in GeoScience, Environmental Geology, and Geological Engineering
- 181 undergraduate majors between two programs (students declare major in 2nd year)
- 30 MSc & MASc students
- 20 Master of Earth & Energy Resources Leadership (MEERL) students (80% online – MBA for resource sector)
- 40 PhD students
- 10 post-doctoral researchers

Annual Overview

This past year has been one of continued growth with hiring two new faculty. Dr. Chris Omelon is a geomicrobiologist cross-appointed with the Department of Geography and Planning. Dr. David McLagan is a biogeochemist cross-appointed with Environmental Studies. They are part of a cohort of 9 new hires since 2017 to replace retirees or fill voids in our curriculum. These faculty are critical for re-adjusting faculty teaching loads to university norms.

For both the GeoScience and GeoEngineering programs, students enter after second year.

Enrolment in second year GeoScience has dipped, whereas student numbers in Geological Engineering have increased slightly. The lower than anticipated number of majors in GeoScience may reflect the challenges of remote teaching a very visual and tactile discipline through the pandemic. We expect next year's second year class will reflect the positive impact of a full return to face-to-face teaching and increased attention given to critical minerals. Although domestic and international graduate student numbers are growing in general, there is a slight decrease this year, probably because of increased times to graduation resulting from Covid. The number of postdoctoral researchers has increased. As we emerge from the pandemic, student mental health continues to be a chief concern. Increased demand for university supports that help undergraduate students integrate into a normal classroom environment highlight this issue.

Along with representatives of CCCESD including Rob Raeside and Jeff McKenzie, Andrea Waldie, CEO of Geoscience Canada, and numerous other stakeholders, we have been working on a plan for research and marketing to attract students to the GeoSciences.

A major challenge at Queen's is the aging infrastructure and lack of office space for graduate students and post-doctoral fellows. Miller Hall is over 90 years old and is showing its age. The "new" Bruce Wing was built in the 1970s and requires renovation of many spaces. The generosity of our alumni has allowed us to renovate some lab and teaching areas. Tri-council,

CFI, and industry funding has expanded our analytical facilities, but support for technical positions required to operate instrumentation remains problematic. As the number of graduate students and postdoctoral researchers increase, we play a perpetual shell-game to provide office space.

The next year promises to be exciting for our students as we integrate the expertise of our new faculty into the teaching curriculum. With several retirements on the horizon, we hope there is continued support to recruit replacements.

Peir Pufahl on behalf of Vicki Remenda