

Re: Written response Unit Review, 1.8 months

To: Christina Winter, Chair CCAM and Dr. David Gregory, Provost University of Regina

I hereby provide a written response to your offices' request regarding the Department of Geology's unit review, conducted between April and July of 2019. The review was followed by a verbal presentation to CCAM on December 5, 2019 by former Department Head, Dr. Hairuo Qing. Herein I address the issues and recommendations raised as part of the AUR and outline the Department's initiatives and directions that collectively we plan to undertake over the next five to ten years.

As a general statement, the AUR report has provided Geology with eight recommendations, and our department agrees with all of these. These recommendations are centered around: 1) maintaining a minimum complement of faculty and staff in order for our unit to remain viable and facilitate growth by attracting more students; 2) exploring further support (including for funding of infrastructure and equipment, and of our field-based courses) and to collaborate with other units across the university, and also with external stakeholders/partners from local and national government, as well as partners in the private sector, and 3) developing a strategic plan for the near and long term growth and sustainability of Geology. The Department of Geology has thus far responded proactively, and with strong support from the Dean of Science, Dr. Doug Farenick, we have hired two new tenure-track faculty members at the Assistant Professor level, as well as formulating an internal Strategic Planning committee that is working on developing a 5-10 years plan and vision for the Department of Geology. The curriculum committee is also revising and updating our course offerings and programming, and plans to work in close collaboration with other units across the University, and with the new Associate Dean on Student Engagement and Experience (ADSEE) in Science to strength our curriculum in topics such as Indigenization, Environment and Climate action and sustainability.

The work of these committees was limited during 2020, in part due to the pandemic, and the fact that two of the participating faculty members from both committees were on sabbatical from January to December 2020. In the following section we respond to specific recommendations raised in the report.

Recommendations 1,2:

1. "The department had a faculty retirement in April 30, 2019. To continue the success of the department, at a minimum, this position must be replaced. Although maintaining faculty numbers is urgent, any new hires need to be strategic with an eye to the future of the department."
2. "The excellent support staff are essential to the faculty; any reduction in support to the faculty will be deleterious to the department. Given budgetary constraints, creative solutions to maintain this support may be required."

Response:

- We are very pleased to report that the Department of Geology hired two new tenure-track positions in 2020: Dr. Leslie Robbins and Dr. Joyce McBeth in the area of Environmental Geology. These key appointments not only bring new fields of research (geobiology, geomicrobiology, low-temperature aqueous geochemistry) to the department, but will greatly strengthen the Environmental Geoscience program, and will help align objectives between the University Strategic Plan and our own. 2020 also saw the retirement of Dr. Stephen Bend (faculty member) in April, and the resignation of Dr. Richard From (laboratory instructor) in July. Moreover, Dr. Janis Dale (faculty member) has announced her retirement with effect from April 30, 2021. These departures have been offset, to some extent, by the re-appointment of Dr. Tsilavo Raharimahefa as a tenured Assistant Professor in August, 2020. With these changes, the department presently maintains a complement of 9 faculty members and 2 laboratory instructors. The hiring of two new faculty members has illustrated the significant support and commitment to Geology from both the Faculty of Science and from the University.
- Regarding technical support, Mets Ritsema moved to Biology and Joanne Downing replaced him, thus we retain a similar level of technical support. Administrative support has been maintained with Van Tran as our Office Administrator.

Recommendations 3,5:

3. “There is incredible support for the department from external stakeholders, including the Saskatchewan Geological Survey (SGS), representatives from the exploration/mining industry and the resources sectors (e.g., energy, petroleum and natural gas). The relationships that the department has built with industry over many decades could provide a possible pathway for support for improved facilities and in funding our two field camps. These should be explored more thoroughly and worked on with the development office.”

5. “There are opportunities for more collaboration in terms of education and training with other departments and faculties, including the Faculty of Engineering, Department of Geography and Environmental Studies, and these should continue to be explored.”

Response:

- Our collaborations with the Department of Geography and Environmental Studies have strengthened: 1) through the acquisition of shared equipment; a new Mastersizer (equipment to measure the grain size composition of sediment) was purchased by Geography and Environmental Science with support from the Faculty of Science and Geology; 2) a reading class on ‘Watershed Hydrology’ co-taught between Geology and Geography and Environmental Science was offered in the Spring/Summer of 2019 , and 3) a commitment to continue offering the co-listed course, GEOL329/GEOG 329 each Fall semester (after the retirement of Dr. Dale, who regularly taught the class). An arrangement with Geography and Environmental Sciences has been established so they will teach the lecture portion and we will teach the laboratory. In addition, we will be undertaking a full review of the curriculum of the Environmental Geoscience program whose content spans the two departments; this will provide further

opportunity to work closely. Collaboration is needed now more than ever with the pending retirement of Dr. Dale, who teaches many classes within this program, and that are cross-listed between our respective departments.

- A new opportunity for collaboration, led by the Faculty of Engineering and Applied Science, and related to the offering of microcredential courses for professionals will be explored. We will also actively pursue collaboration with Engineering on green energy initiatives. For example, two of our faculty members have research that covers exploration of critical metals, key components to many green technologies.
- To alleviate costs related to the delivery of our two field courses, Geology has requested \$6,000 in additional support from the Faculty of Science and we are working with the University's External Relations on donations that could be used to help students fund these field courses. Going forward, we will be consulting widely with department heads across Canada to come up with alternative funding models for those required courses.
- Given that we have two new faculty members with expertise in environmental geochemistry, we will be actively seeking to expand our collaborations with other departments, including Chemistry and Biochemistry, Biology (limnology, ecology, geobiology), and potentially with other faculties across the University (e.g.. Engineering and Applied Science and Arts).
- The Dean of Science is also fundraising for the purchase of a Laser-Ablation Inductively-Coupled Plasma Mass-Spectrometry (LA-ICP-MS) instrument. This state-of-the-art instrumentation will open up immense opportunities in research capability within our department and in supporting collaborations with other units, such as Biology or Geography and Environmental Science.

Recommendation 4

“Although the program is well designed to provide excellent training for geoscientists, the department needs to consider attracting more students from the wider university community to provide a basic education in Earth Sciences to more students. Given pressing environmental issues students will face, Earth Sciences should be a core component of a broad range of disciplines, including engineering, social sciences and Indigenous education. The department should consider offering new courses to serve the greater university and renaming the department to make the program more appealing and accessible.”

Response:

- We concur that that the Unit Review process has highlighted a need for change. Prior to the initiation of our AUR we had already been considering a name change to the department, to better reflect the breadth of our evolving discipline. This suggestion was echoed by the review committee, and while we have benefited from the current name, we feel it is time for a change. This task will be an important part of the Strategic Planning process.
- The curriculum committee is currently in the process of updating all courses, and specifically the course content and laboratory components of our key service class, GEOL102 (Environmental Geology). For example, some of the traditional geology content within the context of environmental geoscience are being adjusted and/or replaced with topics that are more relevant

to current issues facing our planet: e.g. global climate and environmental change. We are also considering changes to other course offerings, such as GEOL 240: Earth System Sciences, GEOL270: Resources of the Earth, to better serve the greater university community, and as a means of attracting a wider audience into our courses and programs.

- The Faculty of Science has recently approved a new program: “Diploma in General Science” and GEOL102 is now a required course in this program. We thus anticipate steady or increasing enrolment in this course.
- A discussion with the Department of Biology, in order to include GEOL102 as part of the required courses in Environmental Biology is underway.
- Given what we have learned this year in relation to distance education and remote teaching, we will explore further options for on-line delivery of some of our undergraduate courses. We are also exploring the best ways to make use of the Western Deans Agreement to provide distance learning opportunities for our graduate students.

Recommendation 6

“The department has very successfully promoted themselves outside the university. Now the successes and strengths of the department need to be better highlighted to the University of Regina and campus communities.”

Response:

- We will work with the new Associate Dean (ADSEE) on indigenization of our programs, and on the development or adjustment of other courses to reflect the new areas of the University’s Strategic Plan, as well as, in the successful marketing of our programs through social media. Also, to promote the research successes and strengths of the department, and of our courses.
- We will improve our web-site and will explore to use social media (twitter, instagram), making our achievements more widely known.
- The Dean of Science has also offered support that has translated into the production of promotional videos filmed both in laboratory and while our students are in the field. For example, a video promoting GEOL 496 field school has been made, and another one promoting Geology in general.
- We continue to promote the annual Geology ‘Earth Ring Ceremony’ to the campus community, to celebrate our graduating students and their professional careers.
- In the past 3-5 years we have produced a range of new Geology posters, brochures, and pamphlets (e.g., UR Rocks) to help promote Geology and to attract more students into our programs.
- As a result of our recent hirings, new course offerings in the area of environmental geochemistry will be explored, as will collaborative initiatives that can help strengthen our Environmental Geoscience program.
- As outlined above, an important part of our new strategic planning process is the renaming and rebranding of the Department of Geology. This initiative will help to promote and stimulate

interest from our academic colleagues within the University, as well as the wider student body, while continuing to engage our extensive alumni and external partners.

Recommendation 7

“The department’s successes align with the three pillars of the University of Regina strategic plan – student success, research impact and commitment to our communities. Future plans should find ways to better collaborate with and include Indigenous partners and students.”

Response:

Geology is set to embrace the five focus areas of the new University of Regina Strategic Plan. We will work closely with ADSEE in Truth and Reconciliation and others on campus relating to areas of Environment and Climate. We feel we are doing a very good job in areas such as discovery, well-being and belonging, action, impact and identity, since most of our classes have a laboratory component, and as stated in the AUR report our students feel they belong and are part of a larger Geology ‘family’. Moreover, the ‘Earth Ring Ceremony’, space arrangements for student society, and our laboratories, help maintaining a close link between instructors and students.

Recommendation 8

“In order to thoughtfully address these recommendations, we would suggest that the department develop a new strategic plan to take them through the next 5-10 years.”

Response:

A new committee “Geology Strategic Planning Committee” has been created to develop a strategic plan for the next 5-10 years, as well as a vision statement. In doing so, we aim to address the recommendations outlined in the AUR report and will align our department’s goals with those of the new University Strategic Plan.

In the AUR’s report there were other issues raised and that are worth addressing as they help set priorities and directions.

- “Traditionally geology has focused on exploration and development of resources, but today there is a growing need to also provide Earth scientists with the skills necessary to address environmental problems including climate change, human alterations of biogeochemical cycles, and the impacts of land use change, dust, and waste.”
- “It is important to maintain a long-term view on enrolment despite cyclical fluctuations inherent in the resource sectors.”

We are glad that these issues were raised; these two recommendations are being address by the strengthening of our Environmental Geoscience program, permitted by the hiring of two new faculty members in that field. Furthermore, over the past two decades, our department has taken pride in delivering a well-rounded program that includes all sub-disciplines of geology and satisfies professional accreditation standards. Most of our students have been actively employed in the resource exploration sectors of western Canada. However, times are changing and now more than ever, there is a growing need for education in environmental science and closely related fields. We are, thus fully committed to

strengthening both our Geology and Environmental Geoscience programs to address the current needs of society and our students. Augmenting our programs, in the context of a well-rounded geoscientist and geoscience curriculum, will provide more versatility in career choices for our students, and at the same time, bring resilience not only to our department but to the University in terms of student and faculty recruitment, retention and greater opportunities for funding and partnership.

More than ever, education relating to environmental issues is a requirement to better understand our Earth and its many interconnected cycles, and we are fully committed to develop our Environmental Geoscience program as a foundation for the department, the University and to Society.

Sincerely,

Maria I Velez
Department Head-Geology