



Response to 2022 UBC Applied Science External Review

Preface

This document provides an initial response to comments, questions and concerns expressed in the 2022 UBC Faculty of Applied Science External Review. The Faculty of Applied Science (the Faculty) is appreciative of the time and insight that the reviewers contributed. The External Review outcomes will contribute to the continual betterment of the Faculty.

With gratitude, we recognize the reviewer's positive observations of the Faculty. They recognized that the Faculty is comprised of passionate and dedicated faculty members and staff and high-quality students. They noted that the Faculty's strong reputation nationally and globally has contributed to increase demand for our programming, and that the Faculty's programming and research capacity has seen tremendous growth in the past five years. They also remarked that the vision set out by the APSC strategic plan is bold and the Faculty has an opportunity to leverage the current collaborative leadership structure to enable this vision.

In addition, the reviewers shared several observations and areas of concern. These are highlighted below along with the Faculty's initial response to each of the areas. In brief, the reviewers noted that the Faculty should continue its efforts to address the demand for its programming; address high teaching loads; and, ensure that all Units (Departments and Schools) can access resources required to support effective program/research delivery. Further, reviewers challenged the Faculty to identify methods to increase the minimum funding for graduate and postdoctoral students, increase the opportunities for intercampus collaboration, and rekindle faculty/staff engagement on campus. Finally, the reviewers identified that the Faculty must continue to work to address the need for adequate physical infrastructure (Applied One), and to ensure that our budget model addresses the unique needs of our Faculty and its respective Units.

The responses contained herein were developed by inviting written feedback from the Heads and Directors of Units, as well as holding a full day retreat with the Associate Deans and the Senior Directors within the Dean's office. The retreat focused on defining specific short-term and long-term transformative actions that could lead to the Faculty successfully implementing the vision outlined in the strategic plan while addressing the reviewer's comments. The main outcome of this discussion was the recognition that while we can identify many actions that respond to the reviewer's recommendations and observations, in order for the Faculty to achieve its ambitious vision, we need to focus our investments into a more holistic and multi-phase approach that positively shifts how we work and allocate resources. Importantly, this type of transformation requires careful and thoughtful planning which will extend beyond the scope of this early response to the External Review. Our response includes actions that can be implemented in the short-term, and those that may require a longer term to plan or implement. Beyond this response letter, we commit to continually explore actions that enable the Faculty to accomplish the vision of Transforming Ourselves that is articulated in the UBC APSC Strategic Plan.



Detailed response to the External Review report

We have thematically grouped the Reviewers' observations and recommendations and have organized our responses accordingly. The themes are listed and linked to the associated location in the document below:

- [Undergraduate education and student learning](#)
- [Research](#)
- [Graduate education and PDF training](#)
- [Collaboration and outreach to the community](#)
- [People](#)
- [Diversity, inclusion and Indigenization](#)
- [Infrastructure](#)
- [Financial resources](#)
- [Leadership and administration](#)
- [Future developments](#)

UNDERGRADUATE EDUCATION AND STUDENT LEARNING

Recommendation: Increase Domestic and ISI seats in engineering.

The Faculty has developed a Strategic Growth Initiative (SGI) to increase the number of domestic and International Student Initiative (ISI) seats and meet the exceptionally high industry and student demand for APSC programs. The initiative includes continued advocacy to the Provincial government for additional domestic seat funding on both the Vancouver and Okanagan campuses. SGI also envisions increased international engineering students on both campuses. Additionally, the Faculty is preparing to increase the number of research faculty to fully support the planned student growth. The increase in research faculty enables additional Master and PhD students, and increased research funding, reputation and impact. To support student and faculty expansion, the Faculty continues to advocate for 'Applied One' — a planned new iconic building in the heart of Main Mall on the Vancouver campus. Applied One will be the centre piece of the University's Thriving and Resilient Cities and Communities Hub that will integrate technology, policy and design to take on the complex challenges of climate, housing, equity, and more.

Recommendation: Reduce attrition of first year engineering program.

The Faculty is exploring the creation of a new initiative: First Year Success Initiative, to quantitatively analyze the retention, progression and success of first year undergraduate engineering students and benchmark our performance against peer Canadian institutions. Further, we will review the support programs developed at peer institutions to inform the development of an innovative students support program, based on best practices, that will increase student success. We recognize that Faculty of Science is a key partner in this initiative as they teach 75% of the first-year courses on the Vancouver campus.

Recommendation: Identify mechanisms to increase time for research for the most research active faculty.

In the short-term, the Faculty will work with the Units to develop and test a pilot program(s) that will enable the most active research faculty to reduce teaching time commitments through the establishment and sharing of best practices.

In the long-term, the Faculty is committed to building on early pilots to develop programs, and commit Dean's office funding to expand on effective pilot initiatives. In addition, the Faculty will work with the Engineering Departments to reduce the overall teaching commitments across the 13 programs through incentivizing collaborative development and sharing of similar courses, and more common second year programming.

Recommendation: Increase the School of Nursing's access Deans office functions.

The Faculty portfolio Directors and Associate Deans will conduct a review of Unit usage of Dean's office support functions. A quantitative understanding of resource usage is a first step in long-term planning for demonstrable equity/equality of usage, and efficient use of shared resources.



RESEARCH

Recommendation: Increase opportunities for multi/trans disciplinary research initiatives.

In the short-term, the Faculty plans to establish an interdisciplinary cluster research funding program. We are piloting the research funding program by developing a Thriving and Resilient Cities and Communities research hub that is aligned with the UBC PAEI initiative. This program will provide financial, program development, grant facilitation, and industry partnership support to teams of researchers. In doing so, the program will better enable researchers to identify high impact research areas, partner with appropriate community stakeholders and successfully apply for large team grants.

In the long-term the Faculty aims to better understand both the soft and hard infrastructure necessary to support multi/trans and interdisciplinary research. As an example, through broad discussions with the APSC community we are currently in the process of developing a functional program for the proposed Applied One building. These discussions have enabled us to hear directly from faculty about what systems and structures are necessary.

Recommendation: Increase and motivate researchers to lead large scale research proposals.

The Faculty has developed a Research Leadership Development Program to increase leadership competencies and to provide the confidence and supports for faculty interested in pursuing leading research initiatives and programs. This program has only been running for a year. At this time, we do not have a sense of the real impact on the culture of research leadership within the Faculty, but anticipate significant positive outcomes.

To address this recommendation, the Faculty has invested in our research and partnerships team capacity to support larger scale research proposal development. As a long-term action, the Faculty will explore the development of a Research Leadership Fund to further incentive and support taking on research leadership opportunities.

Observation: UILO - continues to be a challenge for individual faculty members to effectively navigate.

The Faculty will work with the VP Research and Innovation office (VPRI) and participate in the planned review of the University-Industry Liaison Office (UILO). For example, the Faculty would encourage the VPRI office to consider a pilot project that looks at feasibility of using a different approach to the current IP policies. In addition, as a long-term action, the Faculty will explore appetite for the development of complimentary UILO expertise within the Associate Dean, Research and Industry Partnership's portfolio to act as a concierge for individual faculty members.

Recommendation: Work to increase collaboration and partnership with UBCO.

As short-term actions, the Faculty will:

- work to ensure that research, faculty affairs, strategy, communications, development, etc. staff are integrated and provide services across both campuses.
- explore the logistics/policies that would support cross-appointment of faculty and staff across both campuses.
- continue its travel fund to encourage mobility between campuses and provide touchdown space to facilitate visits and collaboration.

Over the long-term we will focus on establishing systems and structures that foster and fund collaborative research clusters across campuses.

GRADUATE EDUCATION AND PDF TRAINING

Observation: Wellbeing and effectiveness of research graduate students is a concern.

The Faculty has initiated discussions with the Graduate Advisors Committee and formed a dedicated working group focused on understanding how to address student stipends and affordability.

In the medium-term, the Graduate Advisors Committee will be asked to explore additional challenges, and propose solutions towards:

- strong engagement between PhD students and their supervisors
- students graduating within an appropriate timeframe



- students understanding their rights and the processes available to them to elevate their concerns.

In the long-term the Faculty seeks to review existing graduate programs and determine whether there are opportunities to develop more collaborative, cohort based graduate programs.

Observation: Postdoctoral stipends are reported to be low compared to peer universities.

The Faculty will review PDF stipends data, benchmark across peer universities and work with units to ensure appropriate minimum PDF salaries.

COLLABORATION AND OUTREACH TO THE COMMUNITY

No comments, concerns or questions were shared by the Reviewers that require action. However, the Faculty holds community engagement as a core value and will continue to explore, support and foster collaboration and outreach to the community.

PEOPLE

Recommendation: Consider structure of the Dean's office and number of direct reports for the Dean.

The Faculty is committed to conducting a review of its organization to establish an appropriate solution for addressing this recommendation. The review will seek input from the provosts, direct reports and others, provide comparative analysis against other Faculties' organizational structure within UBC, and include peer institutions.

Observation: Need to increase engagement of faculty, staff and students in building a stronger community.

The Faculty will continue its efforts to build community through a variety of means:

- continue regularly scheduled community updates/socials from the Dean (recently started a new event entitled APSC Unplugged, held quarterly)
- provide a fund to faculty, staff, and students to hold innovative community building, on-campus events.

As an ongoing and long-term action, the Faculty will leverage the engagement processes associated with ongoing and new renovations and buildings to better understand how new spaces can/do support a strong community and shared culture.

DIVERSITY, INCLUSION AND INDIGENIZATION

Observation: Important for Faculty to continue efforts around ensuring gender diversity in engineering undergraduate student admission, particularly on the Okanagan campus.

The Faculty is committed to ensuring engineering students, staff and faculty reflect the society that they serve. In order to better understand the issue, the Faculty will undertake a review of the admission processes with specific attention to gender bias in admissions and the role of the Faculty.

Recommendation: Continue outreach efforts for earlier grades to support Indigenous students.

The Faculty will develop means to increase the effectiveness and impact of its outreach to K-12 Indigenous students through Geering Up's InSTEM (Indigenous STEM) programs. In addition, we will re-evaluate all our processes on attractions, admission, and retention into our programs for Indigenous youth.

The Faculty has committed funding for eight years to support two PhD students who are interested in completing PhD studies focused on STEM-based education. The first PhD student (beginning September 2023) would study how potential students, particularly students from under-represented groups in STEM such as girls and Indigenous students, make decisions around entering engineering (e.g. what influences these decisions, including around material presented publicly by the university about engineering and the types of programs available). Other research questions could include: What are barriers to considering post-secondary STEM education for students in the program?

In the long-term, we hope that through our ongoing engagement with leaders from Musqueam, there will be an opportunity to develop more extensive programming that incorporates Musqueam and Indigenous values and principles, and may be of interest to prospective Indigenous students.



INFRASTRUCTURE

Recommendation: Continue and accelerate efforts to realize Applied One.

We are continuing to develop the business case, philanthropic case for support, the functional program for Applied One and are preparing to take the project for EXEC 3 and Board 1 approval this year. We anticipate that the project will be completed in 2029. The ethos of Applied One represents an ambitious vision of interdisciplinary education and research. To prepare us for the scope of activities we envision to be hosted in the building, we are commencing the process of developing a Thriving and Resilient Cities and Community hub for innovative research and education that takes on the challenges of climate, housing, equity, urbanism, transportation, and more.

Recommendation: Cybersecurity compliance is critical recommended that the Faculty consider creating an IT governance committee in APSC.

This recommendation was discussed with the UBC Chief Information Officer. UBC has announced two new programs to help address cybersecurity across the institution as a whole, and the Faculty will commit to participation in these programs. The first is a compliance support program (training, tools for self-assessment of gaps), and the second is to establish APSC Privacy Matters Champions to participate in the new Privacy Matters Champions program.

In the long-term, the Faculty will continue to work with the Associate Vice Provost and CIO and the unit directors to understand if additional APSC supports are required, (ex. IT governance committee) to provide risk assessment, identification and mitigation across the diversity of the Faculty.

FINANCIAL RESOURCES

Recommendation - Review and update budget model to be more equitable across schools.

In the short-term, the Faculty has established a working group to review the current model, develop a detailed understanding of the challenges and inequities and recommend scenarios for updated budget model for the Faculty. That model(s) will go for consultation to the Provost, VP Finance and Operations, unit Heads/Directors for consultation and approval. In the long-term, the faculty will partner with change management experts to implement a revised budget model.

LEADERSHIP AND ADMINISTRATION

Recommendation: Strategic planning needs to be more uniformly done across the Faculty units.

The Faculty will provide resources to support the development of strategic planning proficiency. These resources could include leadership and strategic plan development training for new heads/directors, strategy facilitation, etc.

FUTURE DEVELOPMENTS

Note the external reviewers report listed six future directions, the first four are addressed in the sections above, and therefore no additional comments are given here.

- Increase the number of funded seats in Engineering (addressed above)
- The Faculty should engage in budget remodeling (addressed above)
- Improve engagement among faculty (addressed above)
- Understand and address higher rate of attrition in 1st year (addressed above)

Observation: Challenges around current status of School of Engineering Director with respect to their peers on the Okanagan campus

The Faculty is committed to better understanding and identifying the current governance needs/gaps for the SOE in the context of UBC-O. The Dean will consult with UBC legal counsel, Faculty Relations, Provost and Principle to define the future role of the Director within the Faculty and Okanagan Leadership.

Recommendation: Strengthen partnerships with SOE. Reduce silos.
(addressed above)

Recommendation: Fully leverage the capacity and capabilities of the Deans Advisory Council (DAC).

In the short-term, the Dean will work with the current Chair and Vice-Chair of the DAC to establish DAC working committees, each with specific goals and deliverables. At present, we are considering two specific working groups, one



focused on supporting external engagement (developing mandates, white papers and positions to support investment in training and research for APSC disciplines), and one specific to the School of Engineering on the UBCO campus.