

Report to UBC Vancouver Senate **External Reviews of Academic Units and Programs, 2017-18**

Submission Date: January 8, 2019

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Department of Electrical and Computer Engineering
Faculty of Applied Science

Summary of External Review: November 2017

Key Findings of the Review Committee:

- *Imminent changes in leadership at the Department and the Faculty level create an opportunity to revisit various departmental operations and processes and to embark on a renewed and unifying strategic planning process.*
- *The Department is active in research and faculty members are recognized across Canada and internationally for their research accomplishments.*
- *The undergraduate academic programs are strong and attract good students.*
- *The teaching laboratory facilities are outstanding.*
- *Staff displayed high morale and engagement with departmental activities.*
- *The Department's external interactions are a notable strength.*
- *In general, the Department has made progress in addressing some of the issues and recommendations raised in the last external review. However, there are several areas that have not improved significantly: (1) improve undergraduate student advising, (2) increase departmental participation in second year undergrad admissions, (3) ensure adequate financial support for grad students and (4) seek cost saving measures in collaboration with other departments.*

Key Recommendations of the Review Committee:

1. *The Department should facilitate the process of writing large multi-disciplinary proposals through teaching or service relief, administrative support and the help of technical writers.*
2. *Review the coherence of the undergraduate program.*
3. *Expedite the development, approval and launch of a baccalaureate program in Software Engineering in collaboration with Computer Science.*
4. *Build linkages with industry through an ECE-focused career fair.*
5. *The Department needs to undertake strategic planning on the graduate program.*
6. *Thesis committee should meet annually with students to assess progress and establish relationships.*
7. *The Department should establish a TA requirement for its research students and procedures need to be enacted to provide fairness in assignment of qualified TAs to instructional faculty.*
8. *Gender diversity must be considered when allocating research chairs and endowed professorships.*
9. *Department should have annual retreats to enable strategic planning.*
10. *Organize research showcases to expose students in the department to research in other groups and to enable interaction with industry.*
11. *Re-organize the administrative team to spread responsibilities across several staff members and add a resource to the administration team to coordinate all of the student support services.*
12. *Implement a performance management process for staff.*
13. *Create a strategic vision for the Department.*
14. *Provide more opportunities for leadership development and develop a succession plan at all levels.*

Department's Response:

1. The department has previously provided some administrative support for writing and will investigate to what extent this support can be expanded, possibly in collaboration with SPARC. Recruitment of highly qualified staff for this task has been a challenge. Administrative duties are assigned taking into account all faculty activities, including involvement in writing large grant applications. Teaching relief is an option, however coverage of the undergraduate and graduate courses and fairness in teaching assignments must be maintained.
2. The Department regularly revisits its programs through a Curriculum Committee and a Continuous Improvement Committee and through these committees, it hopes to find opportunities to increase the coherency of the Department's offerings. Our industry advisory committee also provides input on our program and we intend to continue to work with that committee.
3. There is broad support in the Department to create a Software Engineering program. The new Head has committed to try to restart discussions and hopes to bring it to fruition in the near future. The availability of funding will be essential for such a program to go ahead.
4. Given the strong connections between our department and local industry, we believe this is a good initiative. Rather than a single annual fair, the Department organizes several annual events; final year undergraduate students are showcased to the industrial community at the departmental Project Fair and the Design and Innovation Day. The Department offers significant support to the IEEE Student Branch which organizes an annual Think Engineering event where students and industry representatives network. We will continue to seek ways to link our students to local, national, and international industry.
5. The department agrees that it is important to undertake strategic planning on the graduate program, in particular, finding the right balance between the resources allocated to the MEng, MASc, PhD, and MEL programs. This will be part of a longer-term overall strategic planning activity.
6. Students already meet annually with supervisory committee members, however, we will investigate to what extent these meetings can be improved to increase the graduate student experience.
7. The Department has several annual research showcases, mostly aimed at undergraduate students. Graduate student interactions with industry are often lab- or area-specific, however, there are clusters that are large enough that departmental support for such events would be worthwhile.
8. Any mandatory policy regarding TAs would also need to balance the undergraduate experience, union agreements, and graduate productivity. Providing a balance between undergraduate and graduate TAs is important and something the Department will continue to address going forward.
9. The Department is in support of ensuring diversity in allocation of research chair and endowed professorship and will continue to strive to achieve balance in these allocations.
10. The Department will hold a retreat in summer 2019; based on the results, we will then evaluate how frequently we should hold retreats in the future.
11. ECE is committed to regular re-evaluation of workload and responsibilities and agrees that the administration team would benefit from adding a resource to coordinate student support services.
12. Currently staff receive direct, frank, feedback from their supervisors on a regular basis.
13. The department agrees that creating a strategic vision for the department is a good suggestion.
14. The department and faculty are exploring options for leadership development and will work on succession planning by developing the capacity, interest, and capabilities for faculty members interested in academic leadership positions. The faculty is also supporting this goal through providing access to the university-level ADHD program for Associate Heads and other initiatives.

Department of Materials Engineering

Faculty of Applied Science

Summary of External Review: February 2018

Key Findings of the Review Committee:

- *The Department has a strong research reputation, is highly collaborative, has substantial ties to industry and related disciplines at UBC and is forward-thinking, proposing several new strategic initiatives.*
- *The Department research facilities and infrastructure are excellent, but the office building is near the end of its lifecycle.*
- *The Department is guided by an effective leader.*
- *The undergraduate program is healthy. Faculty, staff and students place a high priority on providing a quality undergraduate program.*
- *Challenges with recruiting the best first-year students when competing with other engineering disciplines were noted.*
- *Recent hires in the Department have complemented existing research strengths and addressed gender imbalances.*
- *The new Advanced Manufacturing program and the Learning Factory Initiatives present exciting opportunities.*
- *The Department held the highest research funding level per faculty member in engineering between 2011/12 and 2015/16.*
- *The Department has addressed the concerns of demographic imbalance and low gender diversity in faculty members as observed in the last external review in 2013. On the whole equity and diversity are on a positive trajectory.*

Key Recommendations of the Review Committee:

- *Provide mentoring of Educational Leadership Faculty and more departmental support for those areas not represented in the faculty complement.*
- *Strategic planning efforts are needed to explore several emerging fields such as sustainability.*
- *Increase opportunities for interactions and exchanges within the Department for all members.*
- *Creative approaches to recruiting need to be pursued in order to compete successfully with other engineering fields. The department's contribution to the Intro to Engineering course should be updated with modern communication technologies.*
- *Continue the Department's current culture of collaboration and inclusive engagement into the future.*

Department's Response:

- *Mentoring of the new hires in the Department including two in the Educational Leadership stream will be critical to their success. In the past, an informal mentorship team was established for each new hire where new faculty members were paired with at least 2 more senior faculty. A more formal process of mentoring is being considered by the new Department Head. In this process, a lead mentor will be assigned to each new hire, a modest budget for lunch / coffee will be provided to encourage out of office meetings, and guidance will be provided on expectations for this process.*

The new Department Head has reached out to Professors of Teaching in the Faculty of Applied Science to augment the Department's knowledge and provide timely support in this area. It is hoped that the departmental culture that the reviewers note frequently is transferred to these new faculty organically as has happened historically.

- Strategic planning occurred during the term of the last Department Head. A number of emerging fields were identified including sustainability and advanced manufacturing. This resulted in the creation of the Advanced Materials Manufacturing (AMM) research cluster because of the natural alignment of faculty expertise. The research priorities of the AMM cluster – i) the design and operation of data-driven manufacturing environments; ii) development of new digital technologies in the advanced manufacturing setting; iii) emerging manufacturing processes – has helped the Department engage in BC's Digital Supercluster and led the development of a new research program in Additive Manufacturing. The Materials and Mechanical Engineering departments have also provided leadership and support for the new Manufacturing Engineering undergraduate program and are now targeting new faculty hires that will become the next generation of leaders in this exciting field and provide a real-world transformation of BC's economy into a high value tech economy. Following on from this success, the Department will continue to remain vigilant to identify and champion emerging fields.
- Fostering interaction and exchanges between all members of the department is a priority for the new Department Head. To foster transparency and engagement, wider consultation and communication will occur. Also, a departmental townhall will be held each year to update all Department members on activities and initiatives within the Department, Faculty and University and to receive additional feedback/input.
- Considerable effort was made to enhance the department culture / image during the term of the last Head. This effort occurred during the first 2-3 years of his term and included developing new marketing materials and revamping the Department website. Renewed effort is needed to revitalize the Department's activities and engagement in exciting, new materials-related areas including data driven manufacturing / digital twins, emerging manufacturing technologies such as additive manufacturing, advanced composites, cutting-edge bio materials, and wearable nano-fibrous materials. To embrace this new vision, the undergraduate and graduate programs will be enhanced with new course offerings and existing courses will be updated. Existing communication pathways will be updated / enhanced to communicate these exciting developments in the Department. Additionally, two of the new Assistant Professors in the Department have taken over the recruitment and outreach activities and are working to refresh these efforts.

Master of Architecture Program

Faculty of Applied Science

Summary of Accreditation Review: March 2018

Context:

Professional degrees in architecture in Canada are accredited by the Canadian Architectural Certification Board (CACB). It is the sole organization recognized by the architectural profession in Canada to accredit professional degree programs leading to licensure. The School of Architecture and Landscape Architecture (SALA) at UBC offers one such degree program, a Master of Architecture, last accredited by CACB in 2012. In September 2017, SALA submitted a 2017 Architecture Program Report. A five- (voting) and three- (non-voting) member Visiting Team conducted a site visit in March 2018 and submitted a Visiting Team Report to CACB in April.

Visiting Team Report:

The Visiting Team reported that the School had effectively responded to concerns and unmet criteria raised by the 2012 Accreditation review, meeting previously cited concerns and performance criteria with a notable exception of those related to physical infrastructure (see CACB action section). Program strengths in areas of academic focus; pedagogy; faculty breadth, depth, dedication and collegiality; student satisfaction and engagement; and staff commitment to, and support of, the School were noted. Eight areas of concern were cited, two related to physical resources and infrastructure. These are reflected in Visiting Team's assessments of Conditions and Student Performance Criteria as well as the actions taken by CACB enumerated in the section following.

CACB actions:

In June, 2018 the CACB granted SALA's Master of Architecture Program a six-year term (1 July 2018 through 30 June 2024) with a Focused Evaluation of progress toward compliance with eight of forty-six Conditions and Student Performance Criteria at three years (by 30 April 2021). The eight unmet Conditions and Student Performance Criteria were:

Condition 3: Public Information: *Program provision of "clear, complete and accurate information to the public" was assessed as unmet due to perceived shortcomings in website content and accessibility of past accreditation documents. Compliance with this condition has already been addressed.*

Condition 7: Physical Resources: *Program provision of "physical resources appropriate for a professional degree in architecture" were assessed as unmet, as shortcomings cited in prior accreditation reviews remain unmet. CACB further elevates this concern in their decision letter. "The Board strongly expresses concerns with regard to the Physical Resources of the school (Condition 7) which has been an issue since 2006 and a subject of a Focused Evaluation in 2015. This ongoing situation puts accreditation of the Program at risk. The Board expects that this situation will be reported on in detail during the next Annual Reports as well as the Focused Evaluation Report . . ."*

Student Performance Criteria A6: Human Behavior Program curricula related to “understanding the relationship between human behavior . . . and the design of the built environment” were assessed as unmet due to perceived inconsistencies in the degree to which all students engage this knowledge.

Student Performance Criteria A7: Cultural Diversity: Program curricula related to “understanding the diverse needs, values, behavioral norms and social patterns . . . [and their] implications . . . on the societal roles and responsibilities of architects” was assessed as unmet for inconsistent evidence of that understanding in the student work presented.

Student Performance Criteria B5: Accessibility: Program curricula related to “ability to design both site and building to accommodate individuals with varying physical and cognitive abilities” was assessed as unmet for inconsistent evidence of that ability in the student design work presented.

Student Performance Criteria B12: Building Economics and Cost Control: Program curricula related to “understanding of the fundamentals of development financing, building economics, construction cost control, and life-cycle cost accounting” was assessed as unmet for absence of clearly related scope and learning objectives in course and design studio syllabi.

Student Performance Criteria D4: Project Delivery: Program curricula related to “understanding of the different methods of project delivery . . . forms of service contracts, and types of documentation required to render . . . professional service” was assessed as unmet for lack of related learning objectives in Professional Practice course syllabi or student assignments or examinations.

Student Performance Criteria D5: Practice Organization: Program curricula related to “understanding of the basic principles including financial management, business planning, marketing, negotiation, project management, risk mitigation . . . as well as . . . trends that affect practice” was assessed as unmet for absence of clearly related scope and learning objectives in course syllabi, student assignments or examinations.

Conclusion:

With the exception of unmet Condition 7 Physical Resources, SALA anticipates that the above concerns and unmet criteria can be addressed through light to modest intervention in Program documentation and curricula. Condition 7 Physical Resources remains, by any measure, the single most pressing accreditation issue. As CACB notes, facilities continue to be an urgent and serious concern that puts future accreditation of the Program at risk should this issue not be addressed and standards met in the next six-year accreditation cycle.

Master of Landscape Architecture Program

Faculty of Applied Science

Summary of Accreditation Review: March 2018

Context:

Professional degrees in landscape architecture in Canada are accredited by the Landscape Architecture Accreditation Council (LAAC), an independent Standing Committee of the Canadian Society of Landscape Architects. LAAC is the sole organization recognized by the landscape architecture profession in Canada to accredit professional degree programs in landscape architecture at Canadian universities. The School of Architecture and Landscape Architecture (SALA) at UBC offers one such degree program, a Master of Landscape Architecture (MLA), last accredited by LAAC in 2012. In 2017, for renewal of this accreditation, SALA prepared an Accreditation Review Self-Evaluation Report in September. A three-member Visiting Team conducted a site visit in March 2018 and submitted a Visiting Team Report to LAAC in April.

Visiting Team Report:

The Visiting Team reported program strengths that included a respected and highly regarded program with a relatively diverse student body well engaged in learning and producing work well above LAAC minimum standards. They noted that faculty and staff are enthusiastic, committed to the quality of the program, and pursuing a commendable range of research interests, design perspectives and service initiatives. The program enjoys strong support from British Columbia's distinguished professional community.

The Visiting Team also made recommendations in seven areas of assessment: Program Mission, Goals and Objectives; Program Autonomy, Governance and Administration; Professional Curriculum; Student and Program Outcomes; Faculty; Community Outreach and Public Service; and Facilities, Equipment, Libraries and Technology. The most significant were related to standards of Facilities, Equipment, Libraries and Technology where the Team expressed significant concern for the dispersed nature of MLA program facilities, a problem noted as persistent from prior accreditation reviews. A second area of concern, related to Faculty, cited the number of senior faculty members at or near retirement prior to the next scheduled accreditation. A third area of concern related to Program Mission, Goals and Objectives cited lack of a current strategic plan. These categories of concern, elaborated in the Report of the Visiting Team to LAAC, were reflected in the actions taken by LAAC.

LAAC actions:

In June, 2018 the LAAC agreed with the Visiting Team's assessment and granted SALA's Master of Landscape Architecture Program a full six-year term of accreditation through 2024. Based on concerns raised by the Visiting Team, LAAC also made the following four recommendations:

***Strategic Plan:** The current Strategic Plan is not adequate. This is a vital planning document that should be more inclusively prepared, far-reaching, deliberately aspirational, and must articulate a mission that is closely aligned with the over-arching and faculty missions.*

Disclosure: Program website and promotional media must be amended to specify that the program is accredited by the Landscape Architecture Accreditation Council of the CSLA.

Pending faculty retirement: While there is presently a balanced mix of professors at different stages of their careers, this will clearly change in the near future. The Visiting Team recommends that the program begin planning for this transition as soon as possible and make this an integral part of the Strategic Planning process.

Dispersed SALA buildings: To ensure better integration with its allied disciplines within SALA and FASC, we recommend that the program reside in a single building that houses the faculty, students and staff of the collective disciplines contributing to the human-centred built environment. A single facility will greatly enhance the interdisciplinary research potential of this unit and fully express the environmental and social values of its diverse community.

LAAC further recommended nine supplementary suggestions made by the Visiting Team. These included improvement of the program website, faculty diversity, professional practice course content, grading and drainage course sequencing, elective course opportunities, expansion of history and theory course opportunities, graduating design project advising, digital media instruction, and expansion of the environmental planning and ecology opportunities in the curriculum.

Conclusion:

With the exception of the most significant recommendation related to Facilities, SALA anticipates that other concerns and unmet criteria will be addressed over the next accreditation period. Effort has already begun on strategic planning now that the UBC Strategic Plan has been completed and a parallel effort in the Faculty of Applied Science has been initiated. This effort is expected to be complete by Fall 2019. Planning for faculty succession has been under consideration for the past two years and will be a part of the strategic planning process. Website and communications related suggestions are also being addressed already. Other recommendations and suggestions will be considered fully within or immediately following the strategic planning process and well before the next accreditation period.

Engineering Programs
Faculty of Applied Science

Summary of Accreditation Review: November 2017

- *The Programs reviewed were:*
 - *Chemical Engineering*
 - *Chemical and Biological Engineering*
 - *Engineering Physics*
 - *Geological Engineering*
 - *Integrated Engineering*
 - *Materials Engineering*
 - *Mechanical Engineering*
 - *Mining Engineering*

- *Seven of the above programs received the most favorable decision – six years accredited status, until June 2024. Mining Engineering was accredited for three years, due to concerns that the reviewers / accrediting body (Engineers Canada) would like addressed and reported upon. If the concerns are resolved to the satisfaction of Engineers Canada, the Mining Engineering Program’s accreditation will be extended for the additional three years that the other programs received.*

- *For Integrated Engineering, Materials Engineering, and Mining Engineering, the involvement of stakeholder engagement was noted as an area for improvement.*

- *For Mechanical Engineering, the reviewers noted that the single 32-seat computer lab facility is under very heavy demand, and expressed concern that its limitations are beginning to negatively impact the student experience.*

- *For Mining Engineering:*
 - *There were concerns related to the computer lab for several 3rd and 4th year courses. The specialized software is only available in this lab, but due to class sizes, the courses must run multiple sessions each week which inhibits student access to the software outside of booked course times. This access is further impacted because the Mining students share the computer lab with other disciplines.*
 - *The program has issues accessing financial resources from endowment funds, hindering recruitment of faculty, and upgrades of some laboratory facilities.*
 - *Assessment results across the GAs were presented for a single cycle. Some preliminary observations about the results were presented for some indicators. The indicators are primarily derived from course marks or marks for work assigned to students. In some cases, conflicting information with respect to performance was evident from the results although it was not clear that the analysis of the results has been carried out to any significant extent.*

Department of Philosophy

Faculty of Arts

Summary of External Review: February 2018

Key Findings of the Review Committee:

- *The Department is in excellent condition and has jumped in its national and international rankings in recent years. Whereas it was ranked #4 in Canada and was not in the top 50 in the world at the time of the previous review, it is now #2 in Canada and #35 in the world. The committee believes that with 'modest expansion' it will be among the top 20 departments in the world.*
- *The Head has been highly effective in leading the Department, but as his term is coming to an end, it is imperative to appoint a strong and ambitious leader as the next Head. This is particularly important as the next few years represent a tremendous opportunity for the Department to become one of the best in the world.*
- *There is room for modest growth, as the optimal size for the Department is in the mid- to high-20s, but any such growth should be measured and carefully thought-out.*
- *The Department has enacted almost all of the recommendations from the previous review and has achieved consensus on central concerns.*
- *There is a gender imbalance, especially in undergraduate courses, that needs to be addressed beyond the preliminary work already completed by a departmental task force, whose findings were inconclusive.*
- *The Department demonstrates strong collaborations across the Faculty, has added expertise in Indigenous issues, and has impressive student and community engagement.*
- *PhD completion rates are high, though the yearly intake of PhD students is below the potential for the Department, partly due to the size of funding packages.*

Key Recommendations of the Review Committee:

- *Take steps to improve student engagement, including supporting the Philosophy Students Association, developing more courses with discussion sections, and loosening the requirements to major.*
- *Admit more PhD students each year partly by using existing funds to make fellowship offers more competitive.*
- *Add professionalization components to the graduate programs, including teaching opportunities for PhD students, comprehensive exams that lead to a single, polished paper, and adding a writing seminar for MA students.*
- *Hire two Assistant Professors in the near-term, and explore fundraising opportunities to support a hire in Asian or Chinese Philosophy.*
- *Devolve administrative oversight from the Head to the undergraduate and graduate committee chairs.*
- *Hold a retreat to examine governance, departmental structures, and growth plans.*

Department's Response:

- The Department was pleased with the report, noting that the committee found the Department to be strong on faculty research, undergraduate teaching, and graduate supervision, and that the Department is on an upward trajectory.
- The Department has already begun to engage with students and re-examine its undergraduate course and major structure to help the Philosophy curriculum respond to student needs.
- The role of the Department Equity Officer will be revised and supported such that yearly reports and studies can be produced to address the gender imbalance at the undergraduate level and concrete steps will be taken to address the gender imbalance on all levels.
- A review of funding packages for PhD students is underway in order to make the packages more competitive using a variety of funding sources. This, it is hoped, will help increase the yearly intake of students.
- A modification to the comprehensive exam has already been implemented, which should add a level of professionalization and decrease time to completion. More teaching opportunities for PhD students will be dependent on resources and intake numbers. The proposal to create a writing seminar will be taken under advisement.
- The Department has already begun planning for the hire of two new assistant professors and a senior professor.
- The department will implement a more devolved governance structure, and will schedule regular planning sessions, whether in the form of a retreat or a series of meetings.

Faculty's Response:

- The review is highly laudatory, highlighting both the strengths and the collegiality of the department, describing it as academically strong and high-functioning.
- The Faculty of Arts will fund two new faculty lines for Assistant Professors and will request that Philosophy receive approval to search for a Tier 1 Canada Research Chair.
- The Faculty supports a devolved governance structure that incorporates Associate Heads and will support such a move with funding for course releases if necessary.
- If there is no carry-over from the previous year, the Dean of Arts will financially support a Department retreat.
- The Department is encouraged to work with the Associate Dean, Research and the Assistant Dean, Finance to craft competitive funding packages for PhD students.
- The Department is encouraged to work with the Assistant Dean, Development and Alumni Engagement to fundraise for a position in Asian Philosophy and for graduate funding.

Vancouver School of Economics

Faculty of Arts

Summary of External Review: March 2018

Key Findings of the Review Committee:

- *The move from Department to School has been highly successful; the School is in strong shape and appears on track to continue an upward trajectory.*
- *The biggest challenges facing the School have to do with funding; specifically, mid-level faculty members need to be provided with more competitive salary packages and housing options, and graduate students need to be offered more competitive fellowship packages.*
- *The undergraduate programs—both the BIE (Bachelors in International Economics) and the BA—are strong, have been growing steadily, and may grow further still.*
- *The MA program is excellent, with a competitive and storied program that is running at full capacity.*
- *The PhD program can admit more students and provide existing students with more teaching and research opportunities, all of which requires more graduate funding.*
- *The staff members are highly effective and have steered the School through a variety of new challenges with admirable skill. They are widely respected, and the reviewers commend the School on attracting and retaining such committed staff members.*
- *The academic atmosphere is highly positive, and the School demonstrates a high degree of collegiality.*

Key Recommendations of the Review Committee:

- *Provide housing options for faculty members that allow early-career faculty members to settle in Vancouver and allow more advanced faculty recruits to enter the housing market. Additionally, the School should explore new revenue streams to supplement recruitment offers and identify fundraising opportunities to endow chairs, thus making certain positions more attractive for prospective faculty.*
- *The undergraduate programs should grow to accommodate more students overall, and more international students in particular. Specifically, the BIE should shift from a 50:50 ratio of domestic to international students to something closer to 60:40, and the BA program's required capstone course should be reconceived and expanded to double the number of students in the Majors program.*
- *The BA and BIE program should have more interaction, including sharing physical space and experiences for the benefit of students in both programs.*
- *The School should reallocate resources and develop new revenue streams to offer more competitive packages for prospective PhD students, and offer them more research and teaching opportunities once they are on campus.*
- *The School should engage in a formal study to address the gender imbalance in its PhD student body.*
- *Structural barriers to research and teaching should be addressed, including creating more teaching and student spaces, allowing faculty to accept research funds from varied sources, and ensuring that full-time instructors, rather than sessionals, replace retiring and departing faculty.*

School's Response:

- *The School has already engaged in discussions examining the current budget model to accommodate the unique research and teaching challenges of the School and echoes the call for a university-wide housing policy in which its faculty can participate.*

- The faculty members of the School are agreed that the 50:50 ratio of domestic to international students in the BIE program is optimal, and there is no interest or appetite for adjusting it. Further, the School is invested in maintaining small class sizes and, in light of the constraints on classroom space across campus, is disinclined to increase the number of students in the Majors program until that is addressed.
- The School is interested in fundraising opportunities, and will continue to work with the Assistant Dean, Development and Alumni Engagement, but its first priority will be engaging with alumni and bringing them to campus to engage with faculty and students.
- The School recognizes an imbalance in the student experience between the BA and the BIE and has taken steps to remedy that. BA students have been given dedicated studying and gathering spaces, and the long-term plan is to expand the BIE Career Centre to include MA and BA students.
- The School will engage in a study to determine the optimal size of an incoming PhD student body and will work with the Dean's Office to devise attractive funding packages accordingly.
- The chair of graduate studies will now have a mandate to investigate the systemic issues leading to the PhD-student gender imbalance, and the School is committed to acting upon their findings.
- The School has engaged in several revenue-generating programs and is intending to launch more in the near future.

Faculty's Response:

- The Faculty of Arts recently conducted a large-scale restructuring of the School's salary model to provide greater compensation for the School's faculty, and we have put forward many of the faculty members successfully for housing Prescribed Interest Rate Loans.
- The Faculty is pleased to consider new revenue models for programs such as the BIE. The current funding model is entirely transparent and was created in consultation with the School, but a fresh look may be warranted.
- The Faculty recently received increased funds for PhD fellowships, some of which will benefit the School. In addition, the School is encouraged to work with the Associate Dean, Research to develop attractive funding packages using existing resources. The Faculty has made PhD funding a priority for philanthropy (and has produced a match for philanthropy), and the School is encouraged to work with the Assistant Dean, Development and Alumni Engagement on fundraising.
- The Dean of Arts supports continuing the 50:50 ratio of domestic to international students in the BIE and appreciates the School's efforts to increase engagement between BIE and BA students. In particular, the work of the Career Centre is highly laudable, and its expansion would make a compelling pilot project for implementing similar programs across the Faculty. The School is encouraged to work with the Associate Dean, Student Success to discuss applying for grants such as the Excellence Fund to supplement the project.
- The Faculty is committed to replacing retiring and departing faculty with full-time instructors whenever possible. The decision to replace one departing School Instructor with sessional instruction was intended to be temporary. The School is encouraged to determine how many Educational Leadership Stream instructors would be optimal for its program, and to submit a corresponding request for additional positions to the Dean.
- The Dean is deeply appreciative of the early work of CIDE in solving structural problems related to funding and would be ready to provide seed funding to investigating its potential to be used Faculty-wide.

Master of Social Work Program

Faculty of Arts

Summary of Accreditation Review: October 2017

Accreditation Body: Canadian Association for Social Work Education

Key Findings of the Review Committee:

- *The MSW program was granted a four-year accreditation from July 1, 2017 to June 30, 2021.*
- *The program meets accreditation standards with moderate deficiencies, all of which can be addressed during the period of accreditation.*

Key Recommendations of the Review Committee:

- *The School must clearly incorporate course material that addresses Francophone and newcomer populations.*
- *The School must devise a plan to maintain sufficient numbers of qualified faculty members by stabilizing the existing team and mentoring new faculty.*
- *The School must convert its extra 0.8FTE into a permanent staff position.*
- *The School must have a mechanism for providing feedback to instructors and other personnel regarding field experience.*

Indigenous Teacher Education Program (NITEP)

Faculty of Education

Summary of External Review: May 2018

Key Findings of the Review Committee:

- *The emphasis of culture, language, and identity within NITEP is valued for it creates a culture of support and learning where NITEP students and alumni felt valued and supported in being who they were in the classroom as Indigenous peoples. Other strengths of the NITEP program include: the cohort-model, the community-based model, support by coordinators and staff of NITEP, practicum placements and preparation for teacher education, and the wellness and leadership initiatives offered in the program.*
- *Barriers to recruitment, retention, and successful completion by NITEP include: family and cultural commitments, limited financial and human resources, structural and systemic racism, such as perception within faculty and some in society that NITEP is a “less than” program.*
- *Blended approaches to learning and course delivery are preferred over online courses. There are also opportunities for expansion of NITEP into Adult/Community based education.*
- *A communication strategy and committee structure are required to improve the work that is being done in NITEP, but also to support the work within Teacher Education Office.*
- *While it is recognized that NITEP needs to maintain authority and oversight of its program, it also needs space within the Faculty of Education for presence and connections to students. To address this, it was suggested that the current structure of the First Nations Education Committee terms of reference be revisited.*
- *There are opportunities to enhance the support and services already provided to NITEP students through advising and enhanced career preparation and guidance.*
- *Faculty engagement in NITEP and other Indigenous-focused activities (e.g., supervision of Indigenous graduate students; teaching EDUC 440) must be part of the plan going forward for the Faculty.*

Key Recommendations and Response:

- **Recommendation:** *Increase Indigenous faculty directly tied to NITEP both in urban and rural settings.*
Response: NITEP has prepared a request for a faculty hire in the area of Indigenous Teacher Education and Community-Based Cohort Learning.
- **Recommendation:** *Hire an on-campus program advisor to oversee academic and cultural support for all NITEP students on the Vancouver campus. Program administration dedicated to NITEP is needed to coordinate inquires, support coordinators, and ensuring communication plan is implemented; this role could expand to support admissions.*
Response: NITEP has prepared a job description and request for an Indigenous Education Program Assistant to support administrative tasks, as well as cultural and academic support.

- **Recommendation:** *The Program Manager role needs to be performing the oversight and coordination of the sites -- working closely with the team of coordinators across each site, and the primary focus of field centre coordinators needs to be advising, recruiting and student services support. If they are being asked to teach, then they must have the appropriate credentials and related teaching experience to support that role.*

Response: Roles and responsibilities of coordinators have been recently reviewed. Credentials for coordinators are in line with policies for hiring at rank/level/position. Workloads have been revised to align with credit allocations for a Lecturer position, which is the rank for coordinators. In addition, the on-campus coordinator roles are being revised to be in line with rank or position (e.g., lecturer versus program advisor).

- **Recommendation:** *Academic rigor needs to be a high commitment from the instructors and students to raise the bar; In Yrs 1-3 students need to be better prepared for the expectations/workload of Yr4/5.*

Response: Several courses have already been revised to ensure greater relevance to the field. In addition, these revised courses have been approved for name changes by the Faculty curriculum committee. Other course revisions have already been completed (e.g., EDUC 140) or are underway. Due to resourcing, this is a process that is occurring each year. To better prepare students for years 4 and 5, NITEP is bringing faculty into teaching of Year 3 courses.

- **Recommendation:** *a shift from an online to a blended approach to program delivery; blended and face to face approaches were seen to promote greater sense of community by most of the participants in the study.*

Response: NITEP will review courses and delivery models to determine which courses are best suited to blended learning formats. In addition, part-time lecturer positions have been increased from .40 to .50 to create greater opportunities for face-to-face instruction.

- **Recommendation:** *Elder in residence and mentorship opportunities. Elders play an important role in supporting and guiding both undergraduate and graduate students. Having access to Elders was seen as an important cultural and emotional support for many students. Students also saw value (networking, career guidance etc.) in mentorship opportunities with alumni.*

Response: Through limited funding, the Office of Indigenous Education has initiated a Visiting-Elders program, which supports engagement and mentoring with Elders to programming in the Faculty of Education. NITEP needs more sustainable funding to support this valuable kind of resource.

Teacher Education Program

Faculty of Education

Summary of External Review: June 2018

Key Findings of the Review Committee:

- *The Teacher Education program is very highly regarded by its many external stakeholders, and there is a deep level of contribution and commitment to the program among faculty in the four associated academic departments.*
- *The committee was impressed by the passion for high quality, evidence-based teacher education within the Teacher Education Office and the availability of many support systems.*
- *The current program, in place since 2012, has experienced growth, made tremendous strides and has much to be proud of, for example, its West Kootenay Rural Teacher Education Program, Indigenous Teacher Education programming, and International Baccalaureate Educator stream.*
- *Core courses in teacher inquiry and classroom assessment have evolved over the past five years and would not benefit from a fulsome analysis of and response to student and faculty feedback.*
- *The Faculty of Education has demonstrated commitment to Indigenous education through its NITEP program, Indigenous Ed cohort and required course for all candidates. More work is needed to ensure respectful inclusion of Indigenous teacher candidates together with a broader integration of Indigenous perspectives across all courses.*
- *It is challenging for the Teacher Education Office to coordinate the commitments of four academic departments to deliver a program with interdisciplinary coherence. Existing collaborative governance structures could be strengthened to find ways to create a more coherent teacher candidate experience across the many courses within an intensive 11-month program.*
- *There are some operational challenges related to a non-academic unit coordinating a program in which courses are provided by four distinct academic departments, necessitating even greater transparency and clarity regarding decision-making authority.*

Key Recommendations and Faculty's Responses:

- **Recommendation:** *Improve and increase faculty commitment to teacher education.*
Response: Tenure-track faculty teach about one-quarter of courses offered by three of the departments and none in one department. The overall number of tenure-track faculty teaching courses has decreased slightly each year since 2012, so there is room for growth. A provision of including at least one BEd Program course in faculty workloads could be considered as a way of increasing involvement. It should be noted that there is currently 100% tenure track faculty participation in the two principal governance committees (CCASA and TEAC).
- **Recommendation:** *Create formal mechanisms for collaboration across departments to improve program coherence—which might include a faculty retreat.*
Response: A focus of the Teacher Education Advisory Committee for the past few years has been how to increase program coherence through an exploration of, for example, integrated content from each of the four departments rather than 4 to 8 separate courses offered by each, as well as holding more frequent meetings of Teacher Education Program coordinators, subject area coordinators and

cohort coordinators, which was undertaken in 2017-18. A deeper exploration of increased coherence as well as broader integration of Indigenous content and perspectives could provide valuable foci for a faculty retreat.

- **Recommendation:** *Reconsider the grading system and ensure that whatever system is adopted, the associated measurement principles are understood and implemented consistently.*

Response: The Teacher Education Advisory Committee recently explored the question of using Pass/Fail vs letter grades after learning there is considerable variance in how the current system is applied across courses and instructors. The Pass/Fail grading system used in almost all BEd courses was put in place after a Faculty-wide consultation and approval process in the early 2000s and then evaluated in 2003 after which the system was deemed worthy of continuation. Given renewed interest in this topic, this is an opportune time to re-examine grading principles and practices.

- **Recommendation:** *Elevate the status of Indigenous Education in the teacher education program.*

Response: The UBC Indigenous Teacher Education Program (NITEP) holds an honoured place within the larger Teacher Education Program as well as the Faculty. The commitment to the ACDE Accord on Indigenous Education, while visible in one required course within the program, needs to echo across all departments and courses, and work is still necessary to ensure this happens. The Office of Indigenous Education facilitates multiple opportunities for engagement and professional learning, and a number of faculty, grad students and alumni are growing their understandings and practices as a result. Prioritization of this work across departments is necessary to ensure that students are exposed to Indigenous perspectives and epistemologies in many more of their courses, class activities and disciplinary paradigms.

- **Recommendation:** *Identify strategies to continue the work of improving interpersonal relationships across the Faculty, including those that may have been challenged by the philosophical and pedagogical differences of perspective that surfaced during many years of teacher education program revision.*

Response: Faculty are engaging in direction-setting, and decision-making related to the Program is taking place through departmental representation on various committees. More mechanisms (in addition to department meeting reports) to convey ideas discussed in these meetings and relay feedback from departments would enhance and increase input to the work of committees. Additional opportunities, e.g., working groups, focus discussions, interdepartmental collaborations, etc., to bring forward suggestions and concerns would serve to increase not only involvement in visioning future versions of the program but also to develop a broader sense of ownership and alignment of beliefs as to what comprises an excellent teacher education program.

- **Recommendation:** *Create a Teacher Education Professor Policy Guide that ensures the communication of larger conceptual framework, connections between courses and cohorts, sample course syllabi, descriptions of cohorts.*

Response: The development of a policy guide could be an output from the work of current Teacher Education program/subject/cohort coordinator meetings and/or a dedicated working group.

Counselling Psychology Programs

Faculty of Education

Summary of Accreditation Review 2016

Accrediting body: Canadian Psychological Association (CPA)

The letter affirming the re-accreditation of the PhD program in Counselling Psychology by the CPA was addressed to the University President, Dr. Santa Ono, and dated November 30, 2016. The re-accreditation was for a period of five years.

The letter indicated that, based on data provided in the program's self-study and the site visitors' report, the program continued to meet the CPA accreditation standards for programs in Counselling Psychology.

The letter noted the many strengths of the program related to these standards, including

- *strong commitment to diversity in recruitment, retention and training*
- *size and productivity of the faculty*
- *collaboration with other programs, e.g., SCPS and MERM*
- *responsiveness to previous re-accreditation recommendations*

The letter also identified several questions that the CPA Accreditation Panel asked the program to address in its annual reports to the Panel. These included:

- *need to increase the psychological assessment component of the PhD program.*
- *student funding*
- *low number of required direct-client contact hours and supervision hours in the program*
- *relatively small proportion of students applying for internships through APPIC*
- *low number of students being registered as psychologists shortly after graduation*
- *drop in number of applications to the program.*
- *changes to the New Westminster Counselling Centre*

There is a request to report on progress in streamlining of the MA-PhD programs so that the total length of student time is reduced.

The Accreditation Panel asked how anticipated retirement and resignations would be addressed.

(The program has addressed and continues to address these issues.)

In a letter addressed to the University President, Dr. Santa Ono, and dated November 16, 2016 the Counselling Psychology program was granted re-accreditation from the Council on Accreditation of Counsellor Education Programs (CACEP) for a period of six years for both the M.Ed. and M.A. programs.

The letter of re-accreditation noted the following six strengths of the program:

1. *The programs are located in an accredited Canadian university with a strong international reputation (Standard I A). It provides a dynamic training environment in a socially diverse city. The program has developed strong working relationships with practicum sites and cooperating agencies (Standard I C). Excellent technical support is available for faculty and students to engage in research activities (Standard I D).*
2. *The mission statement, orientation, goals, and objectives of the programs are clearly written (Standards II A and B).*
3. *The breadth of available training provides numerous rich opportunities for students including the development of areas of focus in School Counselling, in Counselling in Higher Education, in Community and Agency Counselling, and in Vocational Rehabilitation Counselling (Standard III).*
4. *The student population is well represented by students from diverse backgrounds (Standard IV A2). Students have online access to an excellent, comprehensive handbook about the MA and MEd programs (IV.D.2.b).*
5. *Full time faculty have superior qualifications. They are highly productive researchers and contribute to the literature in the counselling field. Several have played a strong leadership role within CCA (Standard V A1). In addition, the program attracts and retains faculty from diverse ethnic, racial, gender, and personal backgrounds (Standard V A3).*
6. *The facilities available both on- and off-campus for the development of clinical skills are excellent (Standards VII 5, 6, 7). In addition, the program has access to one of the largest library systems in Canada (Standards ID and VII 10 and 11).*

At the time of our re-accreditation, CACEP requested 21 clarification or action items for us to respond to by the time of annual progress report. Our annual report was submitted on November 7th, 2017. In addition to any changes to the programs within the year, this report outlined our responses and changes to the 21 action items. Our annual report was subsequently approved and our re-accreditation reaffirmed on April 30th, 2018. The next annual report is due on November 15, 2018.

School Psychology Program
Faculty of Education
Summary of Accreditation Review: 2017

Accrediting body: Canadian Psychological Association (CPA)

Relevant Background

The Ph.D. program in School Psychology was originally accredited in 2012-2013 for three years. It was scheduled for self- study and a re-accreditation site visit in 2015-2016. Given significant faculty shortages, a request was made to defer the self- study and site visit for one year. The request was granted but given the need to defer the program was placed on probationary status for one year. Following the subsequent self-study and site visit, we were notified in November 2017 of program reaccreditation for four years.

Key Findings of the Review Committee

The program was commended on the:

- *core faculty's ongoing efforts to build and maintain a strong training program despite the current concerns around staffing and the program's limited resources.*
- *clear developmental approach to training, as well as the positive trajectory in refining procedures to ensure strong training and time to completion. The Panel noted that the program had done a remarkable job of attending to quality improvement given their current staffing shortage, and appeared very self-reflective about functioning and potential curriculum changes.*
- *attention to diversity issues, as evidenced by the focus on diversity throughout the curriculum.*
- *efforts to improve student time-to-completion, including the yearly progress reviews conducted with each student and the commitment to ensuring that dissertation proposals and data collection are completed prior to beginning internships.*
- *quality of the students, the satisfaction of the students with the program, and the program's focus on increasing student research productivity.*
- *efforts to reduce the number of students working more than 20 hours per week outside the program, including its efforts to increase student assistantships.*
- *breadth of the practicum training opportunities.*

Key Recommendations and Areas to Monitor through Annual Reports:

- *Despite the program's efforts to maintain operations, unforeseen staffing changes and a recent hiring freeze have significantly increased faculty workload. The program was exploring other avenues to further normalize workload for core program faculty. There is concern that despite the proposed changes, the workload for current faculty is not sustainable in the long-term. Clarify how staffing shortages have affected the distribution of labour for the faculty. Update the Panel on steps taken by the program to ensure the sustainability of staffing levels in the long-term, particularly in the event of other unforeseen leaves of absence.*
- *While some improvements have been made with respect to student funding, clarify for the Panel the level of funding that is guaranteed for students in the first four years of the program.*

- *Update the Panel on the impact of the program's proposed curriculum changes.*
- *Certain foundational content areas (e.g. biological bases of behaviour) were "met by an undergraduate course". Clarify the program's processes for assessing the equivalency of undergraduate courses, and how those processes adhere to the accreditation Standards.*
- *The program's test supply budget appeared barely adequate to meet the needs of their students. Update the Panel on any steps taken to ensure appropriate access to current measures needed for student training.*
- *An update is needed on any steps taken by the program to increase student research and office space.*
- *More consistency is needed in documentation of students' practicum hours.*
- *Clarify for the Panel whether all clinical supervision is being provided by licensed psychologists*
- *The program's process for assessing the equivalence of non-accredited internships was not available for review, and the onus appeared to be on the students to provide this information to the Director of Training and Internship coordinator.*

Unit's Response:

- We continue to struggle with reduced faculty resources. A search has begun for a new faculty hire in Child and Youth Mental Health in hope that a new Associate Professor will be in place by September 2019. Another faculty position may open in September 2020 but that would be pending a retirement. Even if both searches are successful we will still be at the minimum number to maintain our programs and will still have less program faculty than our peer programs in Canada. This is our most pressing need and in some ways is out of our control.
- We are reaching out to other faculty in the department to explore research supervision. Our students are strong and highly competitive for external funding and we are finding a number of colleagues interested in research supervision or co-supervision.
- Our program revisions allow for more focus on advanced coursework at the doctoral level in both assessment and intervention. We will offer special topic courses on a rotating basis. We are also continuing our collaboration with clinical and counseling psychology to find ways to better coordinate needs in some areas.
- The 4-year funding packages required by G+PS help address the issue of student funding. As a result, all incoming PhD students will have 4 years of funding. We also continue to explore ways to fund our students and ensure they continue to have strong competitive applications for SSHRC and CIHR.
- We continue to identify new practicum placements and all supervision includes a registered psychologist.
- We have continued with reduced admissions numbers for the PhD program and are exploring options for reducing the MEd and MA student numbers.
- We have revised our procedures for documenting previous coursework in psychological foundations.
- We have created a checklist and procedures for students to identify an internship placement if they are not successful in securing an APPIC placement for internship.
- We have not been successful in identifying targeted workspace for doctoral students but continue to explore possibilities.

Enrolment Services

Summary of External Review: January 2018

Key Findings of the Review Committee:

- *Under the respected leadership of the University Registrar, the unit has set clear goals to support the university's academic mission and is well-regarded by its constituents and stakeholders.*
- *Of note is the work that has been done to increase the participation of under-represented student populations.*
- *Enrolment Services team members are experienced and knowledgeable in their portfolios. The individual units have a high degree of cooperation and collaboration.*
- *There has been a thoughtful, deliberate focus on professional development to position staff well for changes ahead.*
- *Careful planning will be needed to implement the Integrated Renewal Program while ensuring the smooth continuation of regular operations.*
- *More synergy and coordination of efforts between the Vancouver and Okanagan campuses could increase efficiency. The reviewers heard a desire for a deeper collaborative relationship between the two campuses, although many participants cited ES as a model of cross-campus collaboration.*
- *The reviewers praised the success of both campuses in improving support for recruitment and retention of Aboriginal students, and wondered if more resources could be dedicated to these - efforts.*
- *Students voiced satisfaction with UBC's student services, citing the ease of the registration process, attention to financial wellness, availability of Enrolment Services Advisors, and opportunities to provide feedback. Suggested improvements included adding more online tutorials about basic services and more information about Degree Navigator.*
- *There was strong consensus that data quality and data governance will be key to effective data conversion for the IRP.*
- *There is a critical need at both campuses to better understand classroom capacity and utilization to facilitate long term strategic planning. Improving the class scheduling systems will require a collaborative effort across the university.*

Key Recommendations of the Review Committee and Unit's Response:

- **Recommendation:** *The Integrated Renewal Program should thoughtfully dedicate resources to systems development.*
Response: Effective data conversion will be critical to the IRP, and data conversion activities have been ongoing for some time with ES, Planning & Institutional Research (PAIR), and UBC IT working collaboratively.
- **Recommendation:** *To create the necessary capacity for the unit to accommodate the Integrated Renewal Program, and the ability of the Registrar to take on a sponsorship role with the IRP, the university should follow through on its plan to hire a deputy registrar and engage in careful resource planning so that the project and home offices will be adequately staffed. The unit might also want to refrain from starting any major projects at this time.*

Response: The hiring of a Deputy Registrar has been funded and is in progress. Significant work has been undertaken in support of resource planning for the IRP and for regular operations within ES. There is confidence that the plan will support success on all sides. One example of these efforts is that Subject Matter Experts are being identified and secondments mapped to the program timeline to ensure adequate resourcing for operations and for the program in hiring of backfills for operational roles. These plans will be continuously monitored and adjusted where necessary to meet operational requirements and program timelines.

- **Recommendation:** *Develop a cross-campus Marketing Council to better support a coordinated approach and align recruitment initiatives.*

Response: This recommendation appropriately recognizes the need to ensure the Prospective Student Marketing and Communication unit directs UBC's prospective undergraduate student marketing messages and activities. At the same time, there is a need to increase coordination with other UBC units. The opportunity exists to create a new body which would help guide marketing messages and campaigns across the entire UBC student journey from prospective to current to alumni status. To that end, a proposal to create a cross-campus UBC Marketing Continuum Council is being developed.

- **Recommendation:** *Consider adding a resource to the Strategic Aboriginal Enrolment Initiatives [SAEI] portfolio to build upon the good work that is already in progress.*

Response: ES is supportive of this recommendation, which will allow the unit to continue the momentum from successful initiatives over the past few years that have led to an increase in the Aboriginal student population at UBC. There is currently one role in ES to manage this work, but additional resources are required to support retention and graduation. SAEI has proposed the addition of two full-time positions: Aboriginal Student Retention Strategist and Aboriginal Graduate Student Liaison. In addition, it will be an ES priority to secure continuing funding for the successful pilot programs that received 3-year funding from UBC's Excellence Fund and the Ministry of Advanced Education, Skills and Training.

- **Recommendation:** *It is essential that work continues on data integrity issues.*

Response: It is recognized that a significant body of work is involved in getting student data as clean and robust as possible. ES is committed to this endeavour and will continue to work in collaboration with a number of key partners (i.e. Enterprise Data Governance team, UBC IT, IRP, faculties, etc.) to identify and address data integrity and quality issues and to support the University's data governance strategy.

- **Recommendation:** *The university should carefully assess the potential for class scheduling improvements.*

Response: The Scheduling Services team has developed an alternative project plan which focuses on making improvements to our current scheduling model. This plan will take an approach that will: 1) identify quick wins to ensure continued momentum and stakeholder engagement, 2) make impactful changes and improvements to the current scheduling processes and utilize simulations to inform future improvements, and 3) develop short-term solutions that will be adaptable and scalable for future modeling.

Bachelor of Forestry Program, Majors in Forest Operations and Forest Resource Management

Faculty of Forestry

Summary of Accreditation Review: March 2018

Observations and suggestions by the external review team of the Canadian Forestry Accreditation Board:

Strengths:

- *The Faculty has a high quality, energetic, enthusiastic, committed and cohesive staff and teaching faculty; including a dedicated Student Services team and international student orientation program. There is a commitment by Dean Innes and faculty to create a strong working relationship between upper UBC administration and the Faculty.*
- *The Faculty of Forestry has done an excellent job in addressing previous fiscal shortfalls. It has been very successful at staff and student recruitment and the expanded enrolment has helped to improve the budget constraints observed during the 2012 review.*
- *The new Instructor Stream looks very promising. It appears that the Faculty is actively addressing quality of teaching to ensure high quality educational experience through an effective teaching evaluation process and ongoing peer review process.*
- *We applaud the leadership role that the Faculty has taken to address Aboriginal issues, increased Aboriginal content in courses and addressing the Truth and Reconciliation Commission.*
- *The Faculty has done an excellent job in recruiting new staff to replace departures and retirements.*
- *The efforts to address English language skill appear to be paying off for all students. The concept of identifying 4 courses as evaluation courses for English language skills is excellent.*
- *Strong research presence by the Faculty provides enhanced funding for professors to increase knowledge and experience by attending and participating in conferences, and when on sabbaticals. In addition, new research results are presented to students thereby enhancing educational experience of students and learning opportunities.*
- *Faculty has designed an effective approach to exposing students to professionalism and ethics including in-course lectures, as well as annual presentations, by ABCPF and CIF.*
- *The Faculty is offering 2 field camps and takes a hands-on approach to assign students to what it perceives is the appropriate course.*
- *The Jumpstart Program should be considered for expansion to all forestry students.*
- *The Tri-mentoring program (linking junior/senior students) was described as a success by junior students. It is recommended that this be given more exposure to first and second year students.*

Weaknesses/Issues and Concerns

- *The Faculty has done an excellent job of coping with space constraints, but it is now “at or near” capacity for classrooms and lab space. Increase in numbers is leading to a decrease in hands-on field experiences. Professors increasingly rely on TA’s for delivery, especially for outside activities.*
- *The Review Team is concerned that FRST 339 is an optional course for CAF students. This concern was previously identified in the 2012 CFAB Review. It was not highlighted for implementation at that time. This course is important to success in FRST 452. Our review confirms this and recommends that FRST 339 is essential to all streams for accreditation.*

- *We are concerned about the lack of a functional general Advisory Committee, although we applaud having the Aboriginal Advisory Council.*
- *The Faculty's efforts in developing First Nations programs and incorporating First Nations presence into several courses are excellent. However, the Review Team received comments from Students, Faculty and Employers indicating there is a need for further Indigenous content and sensitivities.*
- *Co-op and transfer students face scheduling difficulties as some third-year core courses are only offered in one term. The Review Team understands that this is being addressed for future years but would request assurance that this is being done.*
- *In the 2012 CFAB Review it was stated "It is not clear whether the curriculum committee coordinates the subject material covered in the courses and develops linkages across courses." We recommend cross linkages between courses and for professors to meet in groups to discuss course content.*
- *The increased enrolment is resulting in a significant overload on some professors including their ability to be personally involved in the evaluation of Competencies of students.*
- *The Review Team recommends that the CFAB Accreditation Standards be presented to Forestry students in FRST 100 to help them understand why they are taking some courses and to help them choosing some courses in order to improve their national employment opportunities.*
- *The format for capstone course FRST424 (Forest Management) has been changed to accommodate the significant increase in students. The students are given more in class instruction rather than in the field instruction and students are using canned documentation and not interacting with "clients" as they did in the past. The Team concurs with the students and many employers' comments that field experience is a necessary component of the forestry program.*
- *The demographics of the Faculty are a concern with several pending retirements of key positions. Well rounded individuals with both educational and practical experience should be sought to fill these positions.*

Concluding Remarks

It is the opinion of the Review Team that the Faculty of Forestry continues to excel in both teaching and research. Its reputation as being one of the leading forestry faculties on a national and global scale is supported by the fact that the BSF program continues to attract accomplished faculty, high quality undergraduate and graduate students nationally and internationally, industry support and significant research dollars.

The Faculty has successfully addressed a number of observations and suggestions made after the 2012 site visit including:

- *English language Skills for Chinese Transfer and domestic students have been addressed with the introduction of the assessment of language skills as a part of the content of 4 courses. It is anticipated that this will assist all students to improve their communication skills.*
- *Low/Decreasing Enrolment and Student Retention: The Faculty recognized that low and declining enrolment at the undergraduate level and student retention after first year were threats to the viability of the accredited forestry programs at UBC. Measures taken, such as increased international student enrolment, expansion of programs including the Urban Forestry degree, and the CFAB Accredited Masters degree have significantly expanded enrolment. In addition, courses such as FRST 100 have helped to engage students into the future opportunities in forestry and have enhanced retention.*

Faculty of Graduate and Postdoctoral Studies

Summary of External Review: March 2018

Key Findings of the Review Committee:

- *The Faculty is seen as a well-functioning service unit that contributes in a variety of ways to enhance the graduate student experience and connect students with the resources to help them succeed. In addition to its service function, the faculty offers valuable leadership on academic matters that is progressive and important.*
- *The Faculty has excellent relationships with Student Services and Enrolment Services. Extremely positive comments were received on the integrated approach between G+PS and Student Services specifically related to housing, childcare, and career services, although work is needed on graduate student orientation.*
- *The Faculty has worked diligently at data stewardship with impressive results.*
- *While the process for adjudicating awards seems to be working well and seamlessly, concerns were raised about the timing of adjudication, which for some programs does not coincide effectively with recruitment cycles.*
- *There are some unclear jurisdictional lines in graduate program development and administration at the university. The rationale for having some programs administered outside of G+PS is unclear. This leads to confusion for students, staff and faculty.*
- *The reviewers raised a perception by some that the emphasis of the office on innovation in graduate education implies that traditional disciplinary research is undervalued.*
- *The faculty has expanded to include postdoctoral fellows as well as graduate students, yet the perception is that postdoctoral support is constrained by insufficient financial support and a narrow mandate. A transformative investment in postdoctoral training should be made.*
- *The Interdisciplinary Studies Graduate Program attracts excellent students who do well academically and in placement after graduation. Operationally, however, the program faces some challenges.*

Key Recommendations of the Review Committee and Faculty's Response:

- **Recommendation:** *The mandate and role of G+PS and its leadership team should be clearly communicated to senior leaders and associate deans with graduate responsibilities across the university.*

Faculty's Response: This is an important suggestion and there are several methods we can use to accomplish greater awareness of the leadership role of G+PS. In addition to seeking a stronger presence in key offices and committees, we will revisit and lead consultations on G+PS's mandate and update our website.

- **Recommendation:** *Through broad consultation, consider the creation of an Executive Council that would be strategic and directive. Organizationally it would be above the Graduate Council thereby enabling the Graduate Council to focus on administrative and procedural matters.*

Faculty's Response: We appreciate this suggestion and have ourselves considered this periodically. We can see the potential value of establishing a council of internal and external advisors to strengthen our ties to senior graduate education stakeholders within and beyond the university.

Should we decide to create such a council, we would frame it as advisory rather than “directive” in the imperative sense.

- **Recommendation:** *Communicate with programs and/or faculties as early as possible about awards and GSI funding available for the current intake cycle. Confirm the availability of any “banked” awards. G+PS should, whenever possible, work towards allocating some awards to units while holding a reserve of these awards for a central competition.*

Faculty’s Response: We agree and have already instituted these changes.

- **Recommendation:** *G+PS should play a central role in a review of the rationale and impact of having some professional or applied programs outside the G+PS administrative structure and others within.*

Faculty’s Response: We have carefully reviewed the models and have argued for G+PS academic and administrative oversight of professional programs (at the very least, for new ones), and will continue to do so with the new leadership in Faculties and the Provost’s Office.

- **Recommendation:** *Examine how best to support doctoral students for academic success and career success that aligns with program-specific goals and objectives and in addition consider the merits of other models of PhD training (e.g. direct entry).*

Faculty’s Response: We believe that all of our activities and strategic initiatives support doctoral students for academic success and success in careers both in the academy or outside it. Our strategic plan includes further avenues to support students for academic and career success, and those will be energetically pursued. The merits of direct-entry PhD and ‘fast-track’ transfers to the PhD are periodic topics of discussion with Graduate Council and graduate programs.

- **Recommendation:** *Whether postdoctoral studies should remain within G+PS or have a separate office directly under the VP Research and Innovation (or elsewhere) should be re-examined.*

Faculty’s Response: Because the PDFO’s activities and goals so clearly overlap with those of the rest of G+PS, we feel it was very appropriately placed there. (Its location in the graduate school was also recommended by the previous review team.). Other central units also play critical roles in supporting postdocs - for example, Faculty Relations and the Centre for Teaching and Learning Technology - and all forms of support need not, or cannot, be limited to one unit.

- **Recommendation:** *There should be a liaison identified in each faculty between PDFs and the faculty of G+PS (or whichever unit has pdf responsibility) to ensure coordinated efforts.*

Faculty’s Response: PDF liaisons for each Faculty (which we call PDF coordinators) have been in place for some time now. We agree that there could be enhanced coordination and networking between them, however, and we will address this over the coming year.

- **Recommendation:** *G+PS should review and, where necessary, revise policies and practices to support and incentivize interdisciplinary programs including and beyond the ISGP.*

Faculty’s Response: The primary issues affecting interdisciplinary graduate programs reside beyond the scope of G+PS policies and practices, and will be tackled as best as possible through the implementation of the strategic plan.

James Hogg Research Centre

Faculty of Medicine

Summary of External Review: September 2017

Key Findings of the Review Committee:

- *There is strong evidence that the JHRC is excelling in research and scholarly activities. Its mission is entirely aligned with the strategic plans of UBCV, the Faculty of Medicine and the Hospital/Health Authority.*
- *National and international recognition of the JHRC has increased over the last 5 years in the fields of pulmonary, cardiovascular, and critical care research. This is evident by the number of prestigious awards received by both junior and senior faculty. The national and international impact of the Centre can be seen in its prolific publication record.*
- *Grant success in many major competitions has increased substantially over the last five years.*
- *The caliber of faculty, particular junior faculty, is strong, and all new junior PIs hold major salary awards from the CIHR and /or the Michael Smith Foundation for Health Research.*
- *The self-study was comprehensive, well-organized and informative, and participants in this review were clearly committed to the success of the JHRC and of heart & lung research and patient care in general.*
- *Investigators at the different sites (LSI, VGH, Children's) are not fully aware of what is going on at the JHRC, particularly in the area of cardiovascular research.*
- *Overall, in spite of pockets of strength distributed throughout UBC, there is a lack of cohesion in heart and lung research in Vancouver.*

Key Recommendations of the Review Committee:

- *A sustainable financial plan for the JHRC needs to be developed immediately and communicated to faculty and staff. Operating budgets need to be closely scrutinized. Needs assessments should be performed for all expenses. Opportunities to share personnel (and salary costs) with other groups at St. Paul's Hospital (SPH) should be considered. The JHRC Operations Director, the Director of the JHRC and personnel from UBC/FoM Finance should be working together closely and meeting on a regular basis.*
- *The Director should, in concert with other JHRC clinician-scientists work closely with the Foundation(s) to raise funds.*
- *Wherever possible, research facilities and resources should be integrated with similar facilities/resources at different UBC sites, to minimize duplication, optimize use, and reduce costs of personnel and infrastructure.*
- *There is an urgent need to recruit young faculty, particularly as the most senior scientists will soon enter their senior years of academic performance and there is a paucity of intermediate scientists to fill the void.*
- *Is it possible for even more research space to be added to the plans for the new facility for SPH beyond that which is allocated for the JHRC? Having a larger critical mass of fundamental research scientists in any discipline is valuable and furthermore helps support core facilities.*

- *To increase visibility and establish a closer-knit community of heart and lung research at UBC and in Vancouver, and a cohesive approach, we strongly recommend that a city-wide Vancouver Heart & Lung Institute (VHLI) be established, potentially with the current JHRC forming a node at SPH and connecting it with other nodes at the other sites. Hiring a Director of the recommended VHLI must be the highest priority. A 1-2 day review of all activities across the heart & lung clinical and research communities in Vancouver would be a good place to start, with a view to articulating a bold short-term and long-term vision.*
- *This is an opportune time to introduce a practice plan that will support patient-based research (e.g. stem cells, regeneration, tissue engineering, genetics, genomics, imaging).*

Unit's Response:

- While the recommendations for the JHRC are essentially for the next Director to implement over the next 5-year term, we are pleased to say that we have already been able to respond positively to many of these recommendations to a significant extent.
- We fully agree with the recommendations to the Faculty of Medicine with regard to developing a sustainable financial plan for the JHRC and communicating it to staff/faculty. We are pleased to report that we have performed a preliminary assessment of core budgets, have implemented cost-recovery strategies, and that the Centre Operations Director, the Centre Director and UBC/PHCRI Finance are working together closely and meeting on a regular monthly basis.
- We have established monthly meetings with the SPH Foundation to address raising funds to support research at the Centre.
- Many PIs were surprised by the reviewers' statement that the Centre "has little visibility internationally, nationally and indeed, only to a limited extent, locally" particularly in view of the reviewers' prior comments about the Centre's increasing national and international recognition. The Centre is widely recognized as a world class UBC research centre that already ranks as 3rd or 4th in FoM Research Centre funding over the past 5 years and could form the foundation of a growing and transformative patient-centred Vancouver Heart & Lung Institute that would benefit all in the community.
- We agree that research facilities and resources should be integrated with similar facilities/resources at different UBC sites, where possible. As a result of increased grant success more work is anticipated in the animal facility and other core labs for 2018 so that a balance in the "black" is now anticipated.
- We agree with the reviewers' noted need to recruit young faculty in the fields of both heart and lung research. This is a compelling issue that exists at the Faculty level that is largely beyond the control of the Centre. Short of endowed chairs, the grant success has in a way covered for or enabled this problem. We have recruited aggressively within the budgetary constraints of our environment and have nurtured our mid-career scientists so that we have a promising cohort of scientists to take over leadership roles.
- To respond to the reviewers' suggestion that "Trainees would benefit from a more cohesive and PI-engaged environment", we have established a "Training and Environment Committee" to promote a supportive, rich, training environment. This committee consists of trainees at all levels, staff, and PIs. We see that as an ongoing activity over the coming years.

Faculty of Pharmaceutical Sciences

Summary of External Review: November 2017

Key Findings of the Review Committee:

- *The Dean has assembled a strong leadership team. The research and educational activities of the Faculty are supported by a talented and well-resourced cadre of staff.*
- *The Dean is commended for dedicating significant time to meet individually with each faculty member for an annual performance review. Recently-hired junior faculty members reported that he has been accessible and helpful and that they feel well-supported by the Faculty.*
- *The Pharmacists Clinic is a well-recognized example of practice innovation that provides an opportunity for about 100 students per year to gain experience in medication management, in addition to serving the community.*
- *The Faculty is located in a world-class teaching and research facility. The location of the national Centre for Drug Research and Development within the same building as the Faculty holds strong collaborative potential.*
- *Communication from the Dean's Office to the Faculty is identified as an area for improvement.*
- *The reviewers expressed concern regarding the uneven distribution of teaching loads.*
- *Changes in divisional structures may be impeding researchers' opportunities to interact with scientific colleagues. One way to address this is to encourage and incentivize interdisciplinary research across UBC to stimulate collaborations.*
- *The entry-to-practice (E2P) PharmD program is outstanding. The Faculty has developed an excellent strategy to address the resulting need for more experiential learning sites. The calibre of students admitted to the program is high.*
- *A major overhaul of the graduate program should be considered, in order to address such issues as recruitment numbers, stipend amounts, alignment of coursework with research priorities, and availability of required courses.*
- *The search process and new hires need to be more cross disciplinary.*

Key Recommendations of the Review Committee and Faculty's Response:

- **Recommendation:** *Develop and enforce a comprehensive workload policy for faculty to address the Committee's finding that teaching responsibilities, scholarly productivity, and committee service appear to vary widely and disproportionately across the faculty.*

Response: Implementation of the new Entry-to-Practice program since September 2015 overlapped with the program it replaces (BSc Pharmacy) until May 2018. Thus a significant number of faculty were double teaching. Furthermore, the E2P PharmD program comprises a more labour intensive teaching curriculum and is more clinically focused leading to some research faculty losing teaching opportunities. The faculty has been working on the development of a workload model and policy for some time. The first component (covering teaching in our undergraduate programs) has been piloted using data for the 2017-18 academic year. We are examining ways of providing better support to new and existing faculty members in relation to their teaching activities through a more formalized faculty development program.

- **Recommendation:** *Delay implementation of the BPSc Program and its associated additional teaching responsibilities until the implementation of the PharmD and Flexible PharmD. Prior to launch it should also be re-confirmed with market study that there will be market demand for graduates of this program in BC.*

Response: The earliest realistic date for the first intake into proposed BPSc program is September 2020, and given that the first 18 months will involve mostly courses in the Faculty of Science, our Faculty's major teaching commitments would not begin until January 2022. This will provide the opportunity to complete the hiring of faculty and staff necessary to support the program's implementation. Our environmental scanning work suggests that there is a strong academic and economic rationale for developing this program, including a high future demand for jobs, and there significant interest from local, national and international industries.

- **Recommendation:** *Develop seed funding programs to encourage team science and interdisciplinary collaboration.*

Response: We agree that more could be done to encourage such collaborations and seed funding is one important element in this. We have a number of initiatives in this area (e.g. an interdisciplinary PhD scholarship) and expanding our efforts will be a priority for the incoming Associate Dean Research, along with budget allocations to support this goal.

- **Recommendation:** *Recruit more PharmD students into the PhD graduate program. Graduate program enrolments are lower than hoped, whereas E2P enrolments are strong.*

Response: We agree that it would be desirable, and the small number of undergraduate professional program graduates who have applied to the graduate program have performed extremely well. However, there are significant disincentives such as the uplift in tuition costs. While we plan to improve recruitment strategies into the graduate program, we believe a more attractive solution may be to offer a combined PharmD/PhD program and this will be explored. We have created the post of Associate Dean Graduate and Postdoctoral Studies who has been charged with leading a fundamental review of the program. We fully appreciate that the funding package (including minimum stipends) will need to be improved and this is a high priority. The Faculty has committed to a minimum stipend of \$23,500 from September 2018 and \$25,000 per annum from September 2019.

- **Recommendation:** *Improve and expand opportunities for faculty members to contribute to hiring priorities, serve on search committees and provide input into final selection of candidates.*

Response: Annual hiring plans are shared with faculty members who have the opportunity to discuss at Faculty Advisory Council meetings. In light of this recommendation, for the development of future hiring plans the Dean will consult formally with the Faculty's Research and Academic Committees and subsequently seek input from the broader community.

Many of the observations related to communication, transparency and inclusion have been addressed elsewhere or have been implemented since the External Review site visit (e.g. development of strategic hiring plan, communication of merit review outcomes, etc.). Each Associate Dean and other Dean's office units provides a written update of all activities ahead of every Faculty Advisory Council meeting.

Department of Mathematics

Faculty of Science

Summary of External Review: March 2018

Key Findings of the Review Committee:

“The committee was very impressed with the department overall. It is a very collegial department with true excellence in research and teaching.” “While comparative rankings of world universities have a wide variance, all place the department second in Canada ... This reputation is earned both by the excellence of the research of the faculty and by the leadership in mathematics centres, especially the Pacific Institute for Mathematical Sciences (PIMS) and the Banff International Research Station (BIRS). Another major institute, Mitacs, also adds to the influence inside Canada. The department is deservedly very proud of their record of prizes and honors.”

“There are some urgent issues that we identified. These are (i) lack of resources to fulfil rapidly growing teaching obligations, (ii) unacceptable physical infrastructure, and (iii) a shortage of classroom space. A longer-term issue we identified was (iv) difficulty in moving beyond the established research group structure of the department when hiring, establishing upper-level course content or recruiting graduate students.”

Key Recommendations of the Review Committee:

Undergraduate Teaching

- The Committee believes that the Department needs from 3 to 5 new research-stream faculty who are excellent in both teaching and research, thereby significantly contributing to both the teaching and research missions of the Department.
- The Committee recommends that, as much as possible, the Department should use graduate students and postdocs either in higher-level courses or in smaller calculus sections (< 50 students).
- The Committee suggested that the research mentor of a postdoc should be made the person primarily responsible for the quality of the postdoc's teaching. Such a policy encourages research faculty to take teaching into account when they hire postdocs.

Infrastructure

- The Committee understands that the UBC administration has approved Executive I status for a new mathematics building and urges the university to elevate the new building to Executive II status.

Hiring

- The Committee recommends that the Department strike a committee to study the issue of difficulty in moving beyond the established research group structure of the department when deciding on hiring, establishing upper-level course content or recruiting graduate students.
- The Committee recommends that the Department initiate a discussion with the Faculty and higher University administration with a goal of providing additional help in providing opportunities to increase female and diversity hires.

Staff and Budget

- The committee recommends that the Dean critically review the way that the Mathematics Department's budget allocation is determined and the way that tuition revenue flows to the Department through the Faculty to ensure that it is fair and is not shortchanging the Department.

Department and Faculty Response:

Undergraduate Education

- The Department has been authorized to conduct searches for and hire four research faculty in 2018-19, including a Tier 1 Canada Research Chair.
- Improving student learning, which can be achieved in part by reducing class sizes, is a priority for both the Department and Faculty. Hiring four new research faculty in 2018-19 with strong teaching skills will be an important step in achieving this goal. For teaching assignments in 2019-20, the Department will prioritize assigning post-doctoral scholars to smaller classes, ideally those where students enter with some University Math experience.
- In 2017, the Department required the identification of a primary mentor for each post-doctoral scholar, and since 2015 the Department's Instructional Skills Orientation (ISO) has been mandatory for PDF's before they teach at UBC. Using data from the ISO, the Department's full-time Science Education Specialist (funded by the Faculty of Science) works with the Peer Teaching Committee to support instructors.

Infrastructure

- The compelling academic need for a new mathematics building is clear, as the project's recent Executive I designation confirms. The University's Five-Year Capital Plan identifies a new Mathematics Building as a "priority academic project" and a master program for the building has been constructed. The primary challenge to advance this important project to Executive 2 status is the identification and securing of funding, from provincial, university, and donor sources.

Hiring

- The Department does not agree that the established research group structure is a barrier to innovation, but commits to re-examining this issue. It is important to note that the current search for a Tier 1 Canada Research Chair in Mathematics contains no stipulation regarding research field, and the Department is conducting searches for assistant professors in Applied Stochastics and in the Mathematics of Information, neither of which are linked to the specific research clusters enumerated in the Department's 2018 Self-Study Report.
- The Department, Faculty and University place a high priority on, and are fully committed to, increasing the diversity of our faculty. Enabling best practices, coordination across the institution, and funding from different stakeholders are important keys to success.

Staff and Budget

- Over the past several years substantial (new) recurring funding has been added to the Department's budget, which is now balanced on both a one-time and structural basis. Additional resources will likely be required to meet the growing demand for Mathematics teaching.

Department of Physics & Astronomy
Faculty of Science

Summary of External Review: October 2017

Key Findings of the Review Committee:

“The Department was last reviewed in 2008 and in the intervening decade has successfully addressed many, but not all, of the concerns identified in that review.”

“State-of-the-art laboratory and office space have been provided for the condensed matter experimentalists, many of the condensed matter theorists, and a few AMO experimentalists in the newly constructed Quantum Matter Institute. Teaching labs and classrooms in the Hebb building are currently being renovated.”

“Fourteen new faculty have been hired, and a chronic deficit of almost 10% of the Department budget has been almost eliminated. The Department has been remarkably successful at attracting external research funding. The staff is generally committed, enthusiastic, and collaborative.”

“There have been many experiments and successes in implementing new evidence based methods for undergraduate teaching, as well as a strong outreach effort.”

“Remarkably and perhaps uniquely among strong research universities, the Department appears to have established a culture in which excellent teaching is highly valued.”

Key Recommendations of the Review Committee:

- **Research** - *The Department and University work together to find avenues to allow for new faculty searches, in areas beyond experimental condensed matter physics.*
- **Undergraduate Education** – *Students interested in graduate school should acquire significant research experience and the Department should consider modifying the BSc curriculum to allow students to tailor some of their courses to achieve their specific education goals.*
- **Graduate Education** - *In order to compete successfully with the strongest universities worldwide, significant changes to the graduate program are recommended including reducing the mean time from B.Sc. to Ph.D. to 5.5 years or less, reviewing the timing and format of the comprehensive exam, and developing an effective support structure for graduate students independent of the Ph.D. advisor.*
- **Departmental Community** – *An internal committee should be formed to explore and implement ways of reinforcing and improving the cohesion and climate of the Department, and to better incorporate post-docs into the departmental community.*
- **Space and Infrastructure** – *The Department and University should continue to carry out renovations to Hennings to optimize space utilization and to provide common areas that will facilitate both scientific and social interactions.*

Department and Faculty's Response:

- **Research** – Renewing our faculty is key to the success of the department (and UBC) moving forward. In Physics and Astronomy, recent professorial hires have been focused on condensed matter physics in support of our world-class quantum matter group. The lack of faculty retirements has caused serious budget problems, which the Department and Faculty have worked hard to solve over the past two years. With the Department budget now balanced, we are poised to begin hiring in fields other than condensed matter physics, but realistically such hiring will be limited until we start to see faculty retirements.
- **Undergraduate Education** - All Physics Honours students are required to take PHYS 449, a year-long capstone thesis course centered around an original research project, and Majors students have the option of taking PHYS 349, a half-year version of this course. Majors students who are interested in a fuller research experience can request to join the PHYS 449 cohort and take part in that class. In consultation with the Faculty of Science, the Department has initiated a full curriculum review to establish a set of technical, conceptual, and broad educational goals. The first target for change will be the extensive lab courses, spurred by the current complete renovation of the Hebb building which houses all of Physics' teaching labs. We expect the result of these efforts to be a program that has multiple paths to identified degree outcomes, which will allow students to have more choice in selecting topics and projects that inspire them to learn most effectively.
- **Graduate Education** – The Department is upgrading its graduate student database to more effectively monitor graduate student progress and to better track time to degree. Separate committees have been struck to review the time to degree and comprehensive examinations at peer institutions. In order to better support graduate students, the Department has established an Equity and Diversity Committee run by graduate students with faculty representation. These efforts are being coordinated with UBC's Wellness and Equity and Diversity offices.
- **Departmental Community** - With the construction of the new Quantum Matter Institute building, the Department is more dispersed physically than in the past and proactive steps are required to maintain Department cohesion. As a first step, some Department faculty meetings are now being held in the AMPEL building. One of the main issues in meeting this challenge is the lack of any space to have scientific discussions in Hennings (the main Physics and Astronomy building). We will promote postdocs giving local seminars to familiarize other groups with their work and increase the opportunities for postdocs to teach, increasing their connection with faculty and students.
- **Space and Infrastructure** - At present a number of faculty and student offices in the Hennings building can be uninhabitable for several months of the year and the lack of interaction areas makes building scientific and social cohesion difficult. Short of a complete building overhaul, we believe there are opportunities for targeted upgrades that can have a significant impact; such upgrades would go a long way to improving both the physical conditions and the working atmosphere of the department.

Department of Zoology
Faculty of Science
Summary of External Review: November 2017

Key Findings of the Review Committee:

“The Department of Zoology is thriving. By any measure (grant success, publication number and/or quality, quality of graduate students and post-doctoral fellows (PDF), faculty awards), the research enterprise of the Department is among the top few in Canada and is internationally recognized for its excellence. The undergraduate program in Biology, offered by Zoology in collaboration with the Department of Botany, is large and complex, and ensures that students gain a solid grounding in the field of biology writ large, while providing opportunities for in-depth study within areas of special interest. Despite its size, the undergraduate program is marked by innovation in teaching. The source of much of the innovation is the teaching faculty, who contribute substantially to the teaching and administration of the undergraduate program. The relationship between teaching faculty and research faculty is collaborative and mutually respectful. The Department is well-staffed and the staff feels appreciated. Reward programs are available to recognize excellence in staff performance. Academic and administrative relationships with other departments in the Faculty of Science and with the Dean’s office are cordial and cooperative. Research faculty are housed across four buildings that provide modern, effective space and infrastructure for their research needs; the same will be true of teaching faculty once the new Undergraduate Life Sciences Teaching Laboratories building is completed. Above all, Zoology is an unusually collegial department - individuals in every capacity within the Department operate harmoniously and with evident enjoyment.” “We also wish to point out here that the Department and University’s responses to the recommendations of the 2012 departmental review have been largely successful and mostly completed (with the exception of the on-going construction of the new teaching facility).”

Key Recommendations of the Review Committee:

- **Research** – Ensure that cohesion is maintained among the Department’s cell and developmental biology, ecology, evolutionary biology, and comparative physiology and biomechanics groups which are housed in four different buildings. Suggestions include extending the very successful BRITE/BRC PDF program in biodiversity to all research groups, making the Life Sciences Centre (LSC) more accessible to Zoology personnel, and re-investing in the physiology research group.
- **Undergraduate education** – Begin planning to recruit and replace teaching faculty who will be retiring in the next few years. Rationalize and solidify support for teaching initiatives. Invest in much needed renewal of teaching lab equipment.
- **Graduate education** – Build bridges and enhance connections between research clusters. Identify strategies to reduce the time to degree completion and prepare students for non-academic careers.

- **Staff and administration** – *Explore ways to improve services for the cell and developmental biology group housed in the LSC.*
- **Space and infrastructure** – *Address high cost of holding facilities for vertebrate animals.*

Department and Faculty's Response:

- **Research** – We are working on ways to enhance intradepartment and research group connections across different buildings by developing a department-wide PDF program and increasing access to Zoology research areas in the LSC. A faculty search is currently underway in physiology, with more planned in the near future. Specific emphasis is being placed on recruiting faculty whose research is rooted in one of Zoology's disciplines, but whose interests bridge to other disciplines.
- **Undergraduate education** - Our strategy for hiring tenure-track instructors has been driven by specific teaching needs, and this will likely continue. Building on the successful Carl Wieman Science Education Initiative, the Faculty of Science has created permanent Science Education Specialists embedded in the Departments, including Zoology. The Department and Faculty are identifying resources to ensure that our new Biosciences Lab Teaching building will be equipped with modern, well-maintained teaching equipment.
- **Graduate education** – Additional efforts to build bridges between the different zoology research groups are discussed above. Times to degree completion are trending downward: In 2016-17, M.Sc. students averaged 2.8 years to completion and Ph.D. students averaged 5.8 years to completion. Efforts are underway to reduce completion time further.
- **Staff and administration** - Major departmental services such as mechanical and electronics workshops, Zoology Computer Unit, departmental vehicles, and administrative support are available to all Zoology faculty across our four locations. Changes in the building access system for the LSC that are now being implemented will put control of access for Zoology faculty and trainees in the Zoology Administration office.
- **Space and infrastructure** – The high cost of conducting vertebrate research is well recognized by the Department and Faculty and we are working on ways to reduce costs for our researchers rather than shift our emphasis to invertebrate research.