

December 5, 2017

Andrew Szeri, Ph.D.
Provost and Vice President Academic
The University of British Columbia

RE: External Review of The UBC Faculty of Pharmaceutical Sciences

Dear Provost Szeri,

Thank you and Dr. Herbert Rosengarten for the opportunity to serve as external reviewers for the Faculty of Pharmaceutical Sciences at the University of British Columbia (UBC). We reviewed the Self-Assessment Report prepared by the Faculty, the 2017-2022 Strategic Plan, curriculum vitae of the faculty, all confidential letters submitted to your office by individual faculty, and met with numerous representatives from UBC, the Faculty, and external stakeholders over three days from November 29 to December 1, 2017. As you will observe in the following pages, we have organized our remarks around four themes: Building and Infrastructure; Faculty and Staff; Educational Programs; and Dean and Administrative Structure. We comment on the strengths, weaknesses, and opportunities in each of these thematic areas followed by our specific recommendations.

This is a time of great change and opportunity for the profession of pharmacy and the Faculty of Pharmaceutical Sciences. The next five years may be some of the most challenging in the history of the Faculty as the innovative Entry to Practice (E2P) PharmD program is implemented and the Faculty pushes to transform pharmacy practice in British Columbia and beyond, while endeavoring to build and strategically focus the research programs.

Building and Infrastructure

The faculty, staff and students are fortunate to enjoy the use of a world-class teaching and research facility. The building is architecturally impressive and has sufficient space to meet the

needs of the Faculty for the foreseeable future. The research space is well-designed and well-equipped. The Faculty invested over \$25 million dollars to purchase a state-of-the-art instrument suite in support of researchers engaged in wet lab research. Despite its young age, a number of renovations have been carried out to adapt the building to meet the evolving needs of the various programs.

In addition to impressive teaching and research space, the Pharmaceutical Sciences building is home to the Pharmacists Clinic. The clinic is an outstanding example of practice innovation that is recognized across the country. It employs a unique, disruptive model of pharmacy practice that provides an opportunity for about 100 students per year to gain experience in medication management. In addition, the clinic serves the community by managing the medication needs of roughly 150 patients per month with complex medication-related problems. The Pharmacists Clinic is at the forefront of an innovative multi-million dollar proposal to the Ministry of Health in British Columbia in which pharmacists will be embedded in primary care teams across the province to provide comprehensive medication management to patients with a goal of improving health outcomes. Funding for this proposal is anticipated in the near future.

The infrastructure at UBC in support of the goals of the Faculty of Pharmaceutical Sciences appears to be strong. Faculty and staff are pleased with the support provided by the university in areas such as information technology, financial processes and grants management.

The Centre for Drug Research and Development (CDRD), Canada's national drug development and commercialization engine, is a unique resource occupying space in the same building as the Faculty of Pharmaceutical Sciences. This co-localization of the CDRD has the potential to provide collaborative opportunities for scientific interactions at all levels for faculty, postdoctoral fellows as well as graduate, professional and undergraduate students. Although relationships have not been fully developed, the potential exists for mutually beneficial interactions. If properly structured, collaborations could stimulate innovation and entrepreneurial activities among faculty and trainees, in addition to contributing to the educational and research missions. Synergies and opportunities for partnerships should be explored.

Recommendation: Continue to provide the Faculty of Pharmaceutical Sciences with financial assistance related to the debt service on the new building and start-up packages. The proposed

delay in initiating the Bachelor of Pharmaceutical Sciences (BPSc) program (and associated revenue) will make it difficult for the Dean to meet these and other financial demands, especially the costs of start-up packages as faculty retire and need to be replaced.

Faculty and Staff

There are 75 faculty members and 60 staff in the Faculty of Pharmaceutical Sciences at UBC. The faculty complement includes 34 research faculty and an additional 13 faculty members in the Educational Leadership track. Among the research faculty, the Health Outcomes group appears particularly strong with a long-standing reputation for excellence, a critical mass of researchers and a number of well-trained recent hires who appear to be making a strong start to their academic careers. Junior faculty reported that they felt well-supported by the Faculty and all have identified senior faculty members who are able to provide them with advice and guidance. The availability of an Educational Leadership track is a strength for the Faculty. This stream allows faculty members who are primarily interested in teaching and education-related scholarship to achieve tenure and be promoted from instructor, to senior instructor, to Professor of Teaching.

The research and educational activities of the faculty are supported by a talented and well-resourced cadre of staff. Most of the 60 staff members are administratively organized into enabling units that support specific educational activities or other functional areas. The enabling units are well-resourced and the number of staff members appears sufficient to meet the current needs of the Faculty. Several staff members work in curriculum and programmatic assessment, an area that appears to be a particular strength for the Faculty.

Although the external review team received written feedback indicating that some faculty feel increasingly disenfranchised, under-appreciated, and not supported, the meetings that the review team had with faculty suggest that this is not the case for the majority of the faculty. However, it is clear that there is a growing divide between teaching and research faculty. Much of the discontentment appears to be centered on teaching responsibilities. Some faculty have extensive teaching responsibilities, and feel that they are unduly bearing the burdens of implementing the

new PharmD program. This has led to low morale among a segment of the faculty. One approach to address this challenge would be to indicate clearly the responsibilities of each faculty member with respect to their percentage effort dedicated to teaching, scholarship, and service at the time of appointment. Effort allocations should be revisited during each faculty member's annual review. All faculty should know who is responsible for assigning teaching responsibilities and assuring that teaching assignments are aligned with the percentage effort of each faculty member. Teaching responsibilities for mentoring graduate students and postdoctoral trainees, and teaching in graduate courses, should be included in the master teaching assignment spreadsheet. In addition, committee service responsibilities should be assigned to faculty with consideration of their percentage effort allocated for service. This transparent approach could help identify inequities, and provide assurance to all faculty that percentage effort is considered when teaching and service responsibilities are assigned.

Another source of discontentment among some faculty is the perception that the Dean is disengaged with the Pharmacy programs that prepare graduates to practice as pharmacists, and that he is solely focused on research. Although the Dean clearly articulated to the review committee his strong support for the undergraduate pharmacy program, the fact that he is not a pharmacist and has spent considerable time and effort to date in recruiting and hiring research faculty may have led to this misperception. It would be helpful for the Provost to reinforce the UBC administration's desire for the Faculty to be research-intensive. This could resolve some misconceptions, and provide clarity so that faculty understand that the Dean has been charged to grow and develop the research programs.

A concern expressed by some faculty was that the research-intensive faculty do not have critical mass, in most cases, and seem to have lost their "identity" and opportunity to interact with scientific colleagues now that divisional structures have been dissolved. A well-regarded Associate Dean for Research is essential to lead the development of research communities/clusters, and to help build research teams, both within the Faculty and importantly, among the other Faculties at UBC. Interdisciplinary research across UBC needs to be incentivized to help stimulate collaborations. Seed funding should be available, and grant

opportunities should be announced to faculty by the Associate Dean for Research on a regular basis to help increase awareness and stimulate interest in scholarly activities.

Recommendation: Develop and enforce a comprehensive workload policy for faculty. Teaching responsibilities, scholarly productivity, and committee service appear to vary widely and disproportionately across the Faculty. This situation is contributing to a rising divide between academic faculty and research faculty, and within these groups between those with higher (>70 contact hours) and those with lower (<30 contact hours) teaching responsibilities. Major factors identified during discussions were confusion regarding who is ultimately responsible for assigning teaching responsibilities and that graduate student mentoring is not considered. With multiple ongoing educational programs and an organizational structure lacking divisions, teaching responsibilities have become unevenly distributed with faculty most actively committed to the unit's success bearing the brunt of the responsibilities, and some newer, research-intensive assistant professors being burdened with significant committee responsibilities, while some more senior faculty do considerably less on all fronts (teaching, research, and service). A sabbatical program offering an opportunity for less engaged faculty to retrain in contemporary pedagogy or research could be considered as a step toward improving productivity for those committed to doing so. The faculty workload model should clearly define expectations (percent efforts) as well as specific expectations for teaching (hours in and out of the classroom for undergraduate and graduate programs), research and scholarship (peer reviewed publications and grants), service (local, national, and international committees), and clinical practice (as appropriate). Included in this workload model should be a process by which teaching and committee responsibilities across the many programs are assigned fairly, and evaluated on an annual basis. Such a model would also be valuable in terms of succession planning for the Faculty. The Dean may also want to consider the implementation of an organizational structure utilizing division chairs as a way to distribute responsibility and monitor the success of this workload model.

Recommendation: Develop seed funding programs to encourage team science and interdisciplinary collaboration. "Catalyst for Change" articulates four major research themes for the Faculty of Pharmaceutical Sciences. However, there does not appear to be significant funds within the Faculty or University that are targeted specifically for fostering a stronger culture of

collaboration and teamwork. A research retreat including the research-intensive faculty in pharmaceutical sciences and selected partners from across the university, coupled with seed funds to stimulate collaboration, could be transformative for UBC and the Faculty of Pharmaceutical Sciences.

Educational Programs

Considerable planning and thought has gone into the design of an outstanding entry-to-practice (E2P) PharmD program to replace the Bachelor of Science in Pharmacy (BSc (Pharm)) program, which will end in 2018. Like many new PharmD programs in Canada, identifying preceptors and clinical sites to meet the expanded experiential requirements of the new program is a significant challenge, but the Faculty has developed an excellent strategy to increase the capacity for training students in the hospital setting. This involves hiring clinical pharmacists currently practicing in locations spread throughout the province as “Educational Facilitators”. These individuals hold part-time (50%) appointments and will serve as preceptors, identify other suitable clinical training sites and provide support to other preceptors in their region. To date, eight Educational Facilitators have been hired and more hires are planned.

A further strength of the undergraduate program is the high caliber of the admitted students. The Faculty has the luxury of a robust pool of applicants and uses a combination of grades and interviews (Multiple Mini Interviews; MMI) to identify those candidates with the desired characteristics for success in the program and in the practice of pharmacy. One minor point that was noted regarding the E2P PharmD program was that there was no identified contact for professional student issues or concerns. Students said that they typically contacted Jennifer Chatterton, Director, Student Services, when questions arose, but it would be helpful to identify the contact person for the students.

Although much effort and focus and gone into the implementation of the E2P PharmD program, the external review team has significant concerns regarding the Graduate Program. A strong and vibrant graduate program is critical to the success of the research program, and is especially important as early career faculty build their research programs. No plan was articulated for increasing the number and/or quality of graduate student applicants. One major concern is the

low stipends offered to UBC Pharmaceutical Sciences graduate students (\$19,000) compared to competitor programs in Canada and internationally, which range up to \$30,000 or more. Stipends need to be increased in order to attract the best and brightest graduate students to the UBC Faculty of Pharmaceutical Sciences. Furthermore, there needs to be a greater focus on recruitment of high quality graduate students. Increased advertising via flyers and email announcements, recruitment at scientific meetings, recruitment weekend/open day events, and more focused efforts to encourage UBC undergraduate and professional students to consider research careers could help increase the number and quality of applicants. The Provost's office should consider an integrated, biomedical sciences graduate program to facilitate cross-discipline training and research collaborations.

Graduate coursework that aligns with the focused research themes offered by the Faculty of Pharmaceutical Sciences appears to be lacking. This deficiency affects other Faculties at UBC. Graduate students expressed frustration that they are not always able to enroll in the courses that they need to take. A major overhaul of the graduate curriculum should be considered to ensure that graduate students are taught the most contemporary and relevant information in the pharmaceutical sciences to prepare them as leaders in their fields of expertise. Engaging the research faculty in teaching courses at the graduate level is critical to the growth of the graduate program.

Recommendation: Delay initiation of the Bachelor of Pharmaceutical Sciences (BPSc) degree program. The Faculty is fully engaged in the implementation of their innovative Entry to Practice (E2P) PharmD program, and the Flexible PharmD program (first cohort in September 2018) is poised to further catalyze change in pharmacy practice in British Columbia. The financial rationale for building the Bachelor of Pharmaceutical Sciences (BPSc) program is sound as there will undoubtedly be interest from international students. However, the additional teaching responsibilities associated with this program will likely be problematic for an already stressed Faculty, and the educational rationale is unclear. The Faculty already has a large number of existing programs (E2P, Graduate MS/PhD, Continuing Pharmacy Professional Development, Vancouver Summer Program, and small cohorts of students in the Bachelor of Science in Pharmacy and Graduate Doctor of Pharmacy programs), with the E2P and Graduate

MS/PhD programs requiring the full attention of faculty and staff, as detailed above. Not only is the plan to roll out several additional programs (Flexible PharmD, BPSc, and a Clinical Professional Master Program) ambitious, but it appears to be the genesis of rising tensions between the perceived needs to focus on pharmacy education and build research programs within the Faculty. Equally important in terms of this delay will be the opportunity for the Faculty to perform market analyses on the potential job market for the anticipated graduates of the BPSc program. Numerous BPSc programs exist in US pharmacy schools, but these programs serve predominantly as pre-professional degree (PharmD, DDS, MD, PhD) programs, with few job opportunities for BPSc graduates in the pharmaceutical industry. Although the preliminary information gathered to date suggests that there is a market in British Columbia and elsewhere in Canada for graduates of this program, it will be important to confirm this prior to launch, and to use post-graduate surveys to assess the employment and career paths of BPSc graduates. It seems more likely that the job opportunities for Canadian BPSc graduates will fall within the realm of marketing/sales professionals within the pharmaceutical industry as opposed to entry-level scientists. As such, a blend of the pharmaceutical sciences with ample sales, marketing, and business essentials would serve as foundational components of the BPSc curriculum, as opposed to a strict focus on pharmaceutical sciences as currently envisioned. Delaying the initiation of the BPSc program by several years (i.e., 2020 or 2021 start) would permit the Faculty to further advance and refine the E2P program (the Faculty's highest priority educational goal), and strengthen the graduate program, while better positioning BPSc graduates for success.

Recommendation: Recruit more PharmD students into the PhD graduate program. The number of high quality applicants to the PhD program in pharmaceutical sciences is lower than hoped (32 in 2016/17), while there are a large number of applicants (735 in 2017) and matriculants (224 in each cohort) to the E2P program each year. The development of recruitment strategies, scholarship programs, and research opportunities targeted at the 224 highly qualified undergraduates in each E2P cohort has the potential to change the trajectory of graduate student admissions.

Recommendation: Develop a formalized plan for remediation in the E2P program. The innovative E2P program is underway and is successfully training students in contemporary

pharmacy practice. Unfortunately, it is inevitable that a small percentage (1-2%) of students will face academic difficulties and need to repeat educational modules or program years. A formal, written policy of remediation for students encountering such difficulties should be developed immediately, shared with students, and implemented across the E2P program.

Dean and Administrative Structure

The Faculty of Pharmaceutical Sciences is led by Dean Michael Coughtrie. Dr. Coughtrie is a highly respected scientist who came to UBC from the University of Dundee. He is well regarded by fellow Deans at UBC who noted that he has been a champion for excellence across the campus and a leader with respect to UBC Health and the IT Council at UBC. The Dean is commended for dedicating a significant amount of time each year to meet individually with each faculty member for an annual performance review. Recently hired junior faculty members reported that the Dean has been accessible and helpful in providing support and advice. The leadership of the CDRD, as well as representatives of the biotechnology and life sciences community in the province, indicated that the Dean has been supportive and open to discussion about new initiatives related to these areas.

The Dean has assembled a strong leadership team with Associate Deans identified in the areas of Research, Graduate and Postdoctoral Studies, Academic, and Practice Innovation. The Associate Dean, Academic, Sandra Jarvis-Selinger, is not a pharmacist but her background in education, curriculum design and assessment along with her experience in a similar role in the Faculty of Medicine was noted as a particular asset for the Faculty.

Based on discussions with the Provost, Dean and faculty, it was evident that everyone would benefit from improved communications. For example, the Dean was charged by the former Provost to build the research program, encourage innovation and stimulate translation to practice within the Faculty of Pharmaceutical Sciences, but some faculty seem to be unaware of these priorities. Thus, more transparency regarding how the Dean's vision and the decisions he makes align with his charge from the Provost would be helpful. Questions and concerns expressed by some faculty surrounding the need for an Associate Dean for Research reinforced this lack of information. As planning begins for faculty renewal due to numerous, upcoming retirements, it

would be helpful to develop a strategic hiring plan, as discussed below under Recommendations. An additional example of the need for communication and transparency concerns the Merit Review committee. Although this group seems to be functioning very effectively at a high level, it does not appear that the results of the merit review process are communicated back to the faculty, consistent with UBC policy.

The Faculty has a large number of undergraduate and graduate awards that are supported by donations primarily from alumni, but it does not appear that the fundraising targets for the Faculty have been met on a consistent basis. It is recognized that the current fundraising climate is challenging and that the targets may be aspirational. However, it may be appropriate to set more realistic goals for the Director of Development and Alumni Engagement, or provide more resources in this area with a focus on research and re-engaging corporate partners. The Faculty has an active continuing professional development unit offering a range of programming that is primarily aimed at alumni. It was suggested by one individual that engaging alumni in this way to help advance practice would be more effective than sports opportunities or “room naming” opportunities.

The search process and new hires need to be more cross-disciplinary (e.g., pharmacoengineering). The Provost’s office should encourage this by providing start-up funding and salary for faculty who are hired through collaborative agreements where more than one Faculty (e.g., Pharmaceutical Sciences and Medicine or Applied Science) leverage resources.

Recommendation: Develop timelines, metrics, milestones, and responsible parties for every aspect of the Strategic Plan by April 2018. The Faculty developed its Strategic Plan over the past year and published it in July 2017, with the senior management team employing a strategy consultant, completing SWOT analyses, and providing opportunities for faculty, staff, and stakeholder input in the process. Although “Catalyst for Change” outlines an ambitious agenda, it lacks specific details as to what will be achieved (metrics and milestones), the timeline in which it is desired, and the individual(s) who is/are responsible for each strategic objective. A nascent implementation is underway and should be one of the Faculty’s highest priorities. As important as it is that broad faculty/staff input is gathered as the strategic planning process is

completed, it is critical that it be completed expeditiously and that those identified as being responsible for implementation be spread broadly across the Faculty in order to engage everyone, fairly distribute the workload, establish the Strategic Plan as the “to do” list for the Faculty, and assure that timelines are met.

Recommendation: Improve and expand opportunities for the broader faculty community to contribute to hiring priorities for the Faculty, serve on search committees, and provide input into the final selection of candidates. The Faculty will experience significant turnover in the next 5-10 years as senior faculty retire and are replaced. Presently, hiring decisions and search committees appear to be comprised of the senior administrative team, with Associate Deans chairing the search committee, and the Dean serving on the committee. This process has been successful in recruiting some outstanding new faculty and the hiring priorities appear to be consistent with the broad directions outlined in the Strategic Plan. However, despite opportunities to contribute during the strategic planning process and in forums such as the Faculty Advisory Council, some faculty members continue to feel that they have not been adequately engaged in discussions of hiring rationale, priorities, and timelines in relation to the needs of the educational and research programs. In some cases, they also indicated that they would welcome the chance to serve on search committees. The Dean should consider an approach in which he charges and empowers search committees to independently seek outstanding candidates for faculty, staff, and administrative appointments. Search committees could provide an assessment of the strengths and weaknesses of the top three candidates (not in rank order) to the Dean, who then makes the final hiring decision.

Recommendation: Establish an external advisory committee to the Dean and Faculty comprised of leaders from professional associations, health authorities, provincial affairs and health policy, pharmaceutical industry, and alumni. The Dean has done an outstanding job in outreach to external stakeholders. A formalized process in which these varying constituencies are brought together to collaboratively discuss issues in pharmacy practice, education, and research would further establish the Faculty of Pharmaceutical Sciences as the catalyst for change, serve as a forum to confront and discuss controversial issues, and allow individual faculty to better tap into the rich resources in healthcare within British Columbia to advance their research and

educational programs. A separate board focused on improving dialog between the Faculty, the Office of Experiential Education, community partners, practitioners and preceptors should all be considered.

Recommendation: Expand the senior administrative leadership team to include more pharmacists. There is only one pharmacist in the Senior Administrative team, as neither the Dean, Associate Dean – Academic, Associate Dean – Research, nor Associate Dean – Graduate and Postdoctoral Studies have practiced as pharmacists. The current governance model of the Faculty is perceived as a top-down as opposed to a bottom-up model, at a time when Canada and the Faculty of Pharmaceutical Sciences are implementing the PharmD degree as the entry-level degree. Involving more pharmacists in the leadership and decision-making team, more widely distributing governance and responsibility to broader faculty committees, and seeking the input of external stakeholders will broadly engage the faculty and assist the Dean in his already exemplary leadership of the Faculty.

Thank you once again for inviting us to review the Faculty of Pharmaceutical Sciences. Although we have made a number of recommendations that we believe will enable the Faculty to reach its considerable potential and achieve its strategic objectives, we also want to re-iterate that the Faculty has many strengths including a world-class building, excellent students and many outstanding faculty and staff that are dedicated to the future success of the Faculty. This is a critical time for the Faculty with a number of exciting opportunities on the horizon and we hope that our comments will be helpful.

Sincerely,

Dr. Kim L.R. Brouwer (Associate Dean, Research and Graduate Education, UNC Eshelman School of Pharmacy, University of North Carolina at Chapel Hill)

Dr. James T. Dalton (Dean, College of Pharmacy, University of Michigan)

Dr. David J. Edwards (Hallman Director and Professor, School of Pharmacy, University of Waterloo)