THE UNIVERSITY OF BRITISH COLUMBIA FACULTY OF MEDICINE

Internal Review of the UBC James Hogg Research Centre (JHRC)

November 10, 2011

1. Introduction

Members of the review team

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Prior to the 1-day review, the review team was provided with a comprehensive Self-Study Report of the JHRC (aka iCAPTURE), and we spent 1 hour with Dr. George Mackie to discuss the review process. At his request, Dr. James Hogg spoke to Dr. Conway on the phone on Nov. 8. The review team met at SPH on November 10, meeting sequentially with groups comprised of Senior Staff Members (5), Junior Staff Members (4), Postdoctoral Fellows (4), Graduate Students (5) and Faculty Members (4). These individuals were selected by the Director of the JHRC, the Associate Director and the Operations Leader. The committee also spoke by phone with Dr. Gavin Stuart (Dean of Medicine), Dr. Grady Meneilly (Dept Head, Medicine) and with Dr. Mike Allard (Dept Head, Pathology). Near the end of the day, we met with the Director (Dr. Bruce McManus) and the Associate Director (Dr. Darryl Knight) of the JHRC. We also had introductory and closing discussions with Dr.George Mackie (Associate Dean, Research) and Dr. Yvonne Lefebvre (VP, Research and Academic Affairs, Providence Health Care Research Institute) at the start and finish of the day. A 45 minute tour of the lab space was also provided.

2. Summary of External Review of 2005

In June 2005, the JHRC underwent an external review by Dr. Dean Sheppard and Dr. Duncan Stewart who provided a report to Dr. Yvonne Lefebvre and to the executive of the JHRC. The report included several comments and recommendations. These are hereby summarized in point form.

1. They were impressed by the leadership and management.
2. They remarked on the strength of the summer studentship education program.
3. There was concern expressed about the lack of hard funding for young faculty, with no definitive plan in the case that "grant tenure" falls through. This was felt to be compounded by the lack of a clinical practice plan and minimal Cardiology participation in the JHRC.
4. It was noted that in spite of good intentions, there was a significant communication gap between PIs and upper management and that this resulted in a sense of alienation, with too much interference for relatively trivial matters.
5. It was suggested that more effort was needed to encourage young faculty to develop autonomy and independence to pursue curiosity driven research projects. The lack of this process was felt to be partly due to limited opportunity for meaningful communication, to express dissenting views and to question operational structure.
6. The reviewers were impressed by the overall management structure in place at the JHRC, including for example HR, purchasing and financial management. They remarked on the dedication and talent of the Operations Manager, but underlined that there exists at the least, a perception of conflict of interest due to the relationship of the Operations Manager and the co-Director (Dr. Bruce McManus).
7. Although it was recognized that the JHRC had recruited excellent young faculty, the reviewers felt that this occurred "opportunistically", and a more strategic approach was recommended.

8. The reviewers raised concerns about the longterm financial health of the JHRC, particularly since the $1.5 million per year from Providence Health Care Research Institute (PHCRI) was to become open to annual negotiation. It was suggested that new funding sources be explored.
9. The review committee raised several questions about the long-term goals of the JHRC in terms of its identity within the context of what was to be a Research Institute at PHRCI.

The following recommendations were made by the External Review Committee. Responses by the current executive, directed by Dr. McManus, are italicized.

1. Recruit outstanding scientist to direct the JHRC, with resource commitment. *Following an external and internal search, Dr. McManus, who was the co-Director of the JHRC until 2005, was hired as the Director. This was accompanied by ongoing infrastructure support that is negotiated annually.*
2. As a high priority, it was suggested that the JHRC resolve the perception of administrative conflict of interest at the executive level. In *October 2005 Ms McManus stepped down from her Operations Leader role, taking on activity in the management of other large projects (e.g. PROOF).*
3. Expand research vision of JHRC. *This was partly based on the premise that there might soon be new and more physical space for the Centre, i.e., Legacy. This did not happen. The JHRC is trying to broaden its cardiovascular and pulmonary research network by emphasizing relationships that yield translational and inter-disciplinary activities. The Providence Heart & Lung Institute was created in 2008 and the Institute for Heart and Lung Health (IHLH) in 2010, the latter which aims to embrace all BC locations.*
4. Enhance environment to nurture the careers of young faculty in the JHRC. *There have been attempts to assign independent space to new recruits, although not always successfully due to limited options. New recruits are expected to apply for funding in their first 2 years.*
5. Raise science at JHRC to the next level ... by recruiting the best and the brightest.... providing ... start-up funds, protected time and research tools .... and allowing ... freedom to define important questions ..." *Since 2005, 5 new investigators have been recruited (Bernatchez, Daley, Francis, Camp, Boyd), and several trans-disciplinary programs have been established (e.g., Allergen, PROOF and IHLH "umbrella").*

3. Internal Review - 2011

i. Preamble

We very much appreciated the opportunity to review the JHRC. The Self Study Report that was provided to us by the JHRC Executive was comprehensive, well-organized and informative. We also appreciated the honest input from participants at the meetings and understand that all members of the JHRC are committed to the success of the JHRC and that any criticisms and/or voiced concerns were meant to be constructive.

**** NOTE: During the preparation of this report, the reviewers were informed of the decision of the Director of the JHRC to step down from his position effective July 1, 2012. We understand that an Interim Director will be appointed by Dr. Yvonne Lebebvre, VP, Research and Academic Affairs, Providence Health Care Research Institute. Although the contents of this report were not changed in substance, some of the recommendations have been accordingly adapted to more appropriately address the current situation.**

ii. Quality, productivity and impact of research and scholarly activities

There are over 250 personnel in the JHRC. This includes 33 PIs, 15 of whom are clinician-scientists, the rest being basic-scientists. There is strong evidence that the JHRC is excelling in research and scholarly activities. Its mission is entirely aligned with the strategic plan of UBC, the FoM and the Hospital/Health Authority. Five PIs hold Canada Research Chairs and several have obtained major awards. Over 700 papers were published between 2005 and 2010. In the field of lung research, the JHRC has a first class reputation as a leading, high-impact, translational research centre within SPH, at UBC, nationally and internationally. Research funding exceeded $10M in 2010-2011.

A major strength of the JHRC is its ability to phenotype disease and this is facilitated by its blood and tissue banks which are relatively unique in North America. The most impactful research being carried out is investigator and small group-driven. By all available metrics, the lung research component of the JHRC is the strongest. There is a highly ranked COPD research program within the JHRC. Interestingly, there is no equivalent focus in Cystic Fibrosis at the JHRC, in spite of enormous clinical strengths in the hospital. Heart and cardiovascular research does not enjoy the same international prominence at the JHRC, and by the metrics provided, they do not rank highly as the pulmonary research at a national level. Attempts to enhance the quality of this component of the program are being made by fostering young investigators in that field. This has yet to result in a strong programmatic presence. There appears to be an expectation/hope that the hiring of a new UBC Head of Cardiology will enhance the quality of cardiovascular research at the JHRC.

Several barriers to optimizing productivity and scholarly activities were raised by faculty, staff and trainees. The ongoing inability to access lung pathological samples from VGH for research studies remains a significant barrier to research studies at the JHRC which needs to be resolved. This issue has also apparently contributed to the challenge of recruiting a research-oriented lung pathologist.

The scientific leadership and expertise at the JHRC has been instrumental in the development of the Centre for Excellence for the prevention of organ failure (PROOF) Program, and with Dr. M. Fitzgerald, the Institute for Heart and Lung Health (IHLH). PROOF has brought considerable benefit and added prominence to the JHRC, particularly in the field of biomarker development. Emanating from the JHRC have been 2 spinoff companies, over 70 MTAs, 9 licenses and 140 patents.

iii. Quality of the training environment and support provided to trainees

There are approximately 20 PDFs and a greater number of graduate students at the JHRC. In spite of its reputation as a translational research centre, and almost half of the JHRC PIs being clinician-scientists, there are few MD-trainees at the JHRC. The national and international stature of the JHRC - particularly on the lung side - is a major draw for trainees at the graduate and post-graduate level. The quality and opportunities offered by the JHRC's training program were strongly voiced by graduate students and post-doctoral fellows. There appears to be a strong collegial and collaborative atmosphere among PDFs and even more so among graduate students, and this cuts across JHRC labs. The IMPACT program is a major

component of the JHRC's training program and provides excellent opportunities in terms of seminars and workshops. JHRC trainees who are not part of IMPACT are unfortunately excluded from some of these opportunities, creating inequities in training opportunities, as well as a sense of alienation by non-IMPACT trainees. A new Education Coordinator was hired 3 months ago, and she is attempting to improve the training programs. Serious concerns expressed by trainees include a perceived lack of interest and direction by the leadership of the JHRC, the need for ongoing maintenance and upgrading of critical core facilities, a need for improved translational interactions and access to clinical biopsy specimens, greater recognition of contributions of PDFs (e.g. grant-writing), more engagement of trainees at high-profile local meetings (e.g. FEST), and practical advice on career planning. Surprisingly, many of the trainees expected that if they stayed long enough and were productive enough, they would be appointed to faculty positions.

iv. Quality of the leadership and strategic direction

The current Director of the JHRC has made major contributions to its growth. Through his efforts, the JHRC has obtained major funding, including from the CFI, and successfully maintained critical infrastructure support through an excellent relationship with SPH and the Providence Health Care Research Institute. During his tenure, five new investigators (Bernatchez, Daley, Francis, Camp, Boyd) were recruited into the JHRC, with an objective being to move cardiology up a notch toward the academic level of the lung program. The training program has continued to be productive and of high quality. His unique entrepreneurial spirit has resulted in the successful establishment of the Centre for Excellence for the prevention of organ failure (PROOF) Program, of which he is the Lead Investigator and Director, and the creation of the recently launched, BC-wide Institute for Heart and Lung Health (IHLH), which he co-directs with Dr. M. Fitzgerald. The latter program is indeed a remarkable achievement which has led to previously unheralded cohesion between the lung and heart "camps", brought together a range of constituencies throughout UBC and the affiliated hospitals that hitherto had remained disconnected, and finally positioned heart and lung disease research and translation as a pre-eminent goal of the Faculty of Medicine.

In spite of - and partly because of - these major achievements, the assumption of multiple administrative responsibilities by the Director has come at considerable cost. There is wide consensus from almost all of the faculty, staff and trainees whom we met, that the Director is spread too thin, and that his administrative duties are far too great. There are perceptions that he exerts more energies toward PROOF as compared to the JHRC. This has caused a sense of confusion as to the vision and direction of the JHRC.

Concerns about a top-down administrative approach were voiced by multiple members of the staff, trainees and faculty and appears to be a legitimate concern, particularly as it pertains to what are perceived by many JHRC members to be decisions that are arbitrary. The quarterly meetings and the executive structure, which had served the JHRC very well in the past, appear to have hardened factions within the JHRC as it has grown and do not appear to yield the desired forum for meaningful discourse, transparent and participatory decision-making. There is no external scientific or strategic advisory board.

When we met with the current leadership of the JHRC, they indicated that the priority for future recruitment was a pathologist, immunologist, virologist, developmental biologist, and engineer. It was not clear when we met with faculty members that they had been involved with or were aware of these recruitment priorities or strategies. Similarly, it appeared that there are limited lines of communication between the JHRC and university departments and divisions in the development or implementation of these strategies that would impact beyond the JHRC.

The conflict of interest issue that was raised in the previous review emerged as a major concern that indeed, permeated much of the discussion during the review. The fact that the Director's wife and daughter and the Associate Director's wife all work in either the JHRC or the overlapping PROOF program is undeniably a cause of low morale in the JHRC. It is perceived as indicative of poor judgment by the leadership and has caused considerable mistrust. The recent lay-off of the safety officer at a time when family members are hired, only served to stoke these feelings. Although there may not be any improprieties to justify these concerns of

conflict of interest, the perception is clearly there and is having a strong negative effect throughout the JHRC that is likely to undermine its reputation and performance.

v. Efficiency and effectiveness of the administrative functions within the JHRC

Based on our meetings, the administrative personnel are highly professional and perform their duties as required. There were no concerns raised about reports or applications being late, incomplete, or inaccurate. We cannot comment on efficiency or the adequacy of internal controls. There appeared to be cohesion among the staff, and for the most part, clarity as to their roles. Concerns were raised by some about a lack of communication and direction from the executive and sometimes frustration that budgets were limited. Information Technology resources are of high quality and IT personnel are responsive to most of the needs of the JHRC. Trainees expressed frustrations about the restrictions on the use of specific hardware and complained that this affected their capacity to effectively analyze data.

vi. Sustainability of the JHRC

The lack of specific succession plans for the next Director of the JHRC, opens up a window of opportunity to actively engage faculty and staff in the critical process of selecting a leader, thereby gaining centre-wide input for the development of a fresh vision with well-stated goals and objectives.

In addition to executive changes, there is a progressive attrition in senior scientists at the JHRC that is likely to impact more on the clinical scientists than on the basic scientists, and more in cardiac sciences than in respiratory sciences. Although not yet diminishing in stature, the senior scientists, such as Drs. J. Hogg, P. Pare and B. McManus, will soon enter their "twilight" years of academic performance. Although some excellent mid-career investigators have been appointed in the last ten years, there is a concern that some of the more junior investigators have yet to clearly establish independent academic careers and will require monitoring, mentoring and protection from clinical or administrative duties.

The JHRC currently receives annual financial support from Providence Health Care Research Institute (PHCRI) of approximately $1M a year that is used primarily to fund core facilities and administrative staff, as well as for some discretionary bridging funds for PIs. This was reduced from $1.5M/year and is now negotiated on an annual basis. This reduction was of concern to some faculty, but there appears to be a long-term commitment by the VP, Research and Academic Affairs of PHRCI to sustain these funds. Cost-recovery systems are in place for some core facilities, but it is not clear that these are well-managed or productive. Beyond seeking support from publicly funded agencies (e.g. CIHR), steps to raise additional core funds from other sources (e.g. fundraising from public/private sectors) have not yet been implemented.

vii. The JHRC in the context of PROOF and the IHLH

Both PROOF and the IHLH have provided major new opportunities for the JHRH and the wider heart and lung academic and clinical communities in BC. Nonetheless, there is considerable confusion throughout the JHRC about its position and relationship with PROOF, and to a lesser extent with the IHLH.

Although the PROOF program operates essentially as a 5-year renewable grant, there is considerable overlap with the JHRC. The current Director of the JHRC is also the PI of PROOF, some of the JHRC investigators are involved with PROOF, and some of the research space within the JHRC is occupied by PROOF members. This raises questions and conflict of interest concerns among some faculty and staff as to exactly how funds, space and resources are allocated.

PROOF requires renewal in the spring of 2013 and the current Director indicated that this is one of his major priorities. This may jeopardize the JHRC in two ways: i. The renewal process itself will necessarily divert the executive's attention away from the JHRC. ii. If PROOF is not renewed, it would have a negative impact on the sustainability of the JHRC, since some JHRC activities and investigators appear dependent on PROOF funding.

Within the context of the IHLH, the plan as presented by the executive is that the JHRC will retain its presence and brand as a research centre that is under the umbrella of a broader BC-wide IHLH. The specific

mechanisms by which the JHRC will integrate into the IHLH remain unclear. The specific roles of the JHRC and the IHLH in building bridges between basic and clinical research in the respiratory and cardiology realms remain uncertain and undefined.

4. Recommendations

Many of the following recommendations are similar to those provided by the External Reviewers' 2005 report.

i. Recruitment of Director

The highest priority is to recruit the next Director. If possible, external candidates should be considered, but only if there is a realistic expectation of new faculty funding to attract an appropriately qualified individual. A prolonged period of interim leadership should be avoided as there is some urgency to address some of the challenges facing the JHRC. Moreover, the interim leader should not be in a position of conflict of interest (see Recommendation 4.ii below). While we did not perform a review with the intent of identifying a new Director, it appears likely that there are excellent internal candidates.

It is important that the administrative responsibilities of the next Director be restricted to the JHRC. Consideration should be made to selecting a clinician-scientist for the next Director, as the translational aspect of the JHRC will increasingly require attention. This will allow him/her to create strong partnerships between the faculty at JHRC and clinicians at SPH and the other faculty in the IHLH. The next Director should not only have a clear vision of where the JHRC should go, but also should have the appropriate skills to execute this vision. Well-defined demarcations and relationships with PROOF and with the IHLH must be established and communicated throughout the JHRC. The future leadership of the JHRC should provide open participatory and transparent leadership which accepts constructive criticism. This would also be an opportune time to introduce changes to the structure of the executive and to add an external scientific/strategic advisory board (see Recommendation 4.viii). A small group committee approach may be helpful in encouraging input from forward-looking personnel, more effectively addressing space and infrastructure initiatives, ensuring broad grassroots participation, and obtaining wide input and contributions to the decision making process.

ii Resolve the perception of conflict of interest and/or commitment

The perception of conflict of interest and/or commitment at the executive level has been discussed for at least 10 years, and threatens to undermine the JHRC. This issue needs to be confronted and resolved as soon as possible. Policies and procedures must be implemented to rapidly and effectively resolve conflicts of interest and/or commitment in conjunction with the new Director, the executive of the JHRC and where necessary, an external review committee. As the hiring of family members may be considered within the same or related units where a conflict of interest and/or commitment could be perceived, the Dean's Office in the Faculty of Medicine should work with the JHRC to ensure UBC's policy on conflict of interest and/or commitment[1] is well communicated to guide and manage such hiring decisions.

iii. Future recruitment

The JHRC is now facing the inevitable attrition of the scientific giants of the JHRC including Drs Hogg, McManus and Pare. It is essential for the future viability of the JHRC to recruit additional mid-career faculty and nurture existing junior faculty. It will be important to maintain the infrastructure cores, expand the biobanks and trainee program. The cardiovascular program within the JHRC needs to be enhanced. The current recruitment of the next Head, UBC Division of Cardiology is an opportunity to further develop the clinical relevance of cardiac research at the JHRC and set it on a course that parallels that of the respiratory component. Care should be taken to avoid the JHRC becoming unfocussed with diffuse expertise that extends beyond respiratory, critical care and cardiac disease.

[1] See UBC Policy 97 at http://universitycounsel.ubc.ca/files/2012/02/policy97.pdf.

iv. Knowledge translation and funding raising

The JHRC should increase its knowledge translation program to emphasize its relevance within SPH and the broader community. This would help secure and expand its current space within a hospital and help fund-raising for additional faculty with the co-operation of the SPH Foundation, the UBC Development Office, the Heart and Stroke Foundation, the BC Lung Association, the Cystic Fibrosis Foundation, etc. The JHRC has clinician-scientists who are in a position to facilitate support from "grateful patients/families". JHRC faculty and staff should all be engaged in these knowledge translation and fundraising efforts.

v. Financial stability and growth

The ongoing annual support from the VP Research of PHCRI is an important yearly revenue stream for the JHRC. It would be most helpful for the longterm sustainability of the JHRC if a portion of this support could be used strategically to help bridge targeted recruitment(s) in partnership with the FoM department(s). The JHRC should continue to aggressively seek out funding opportunities at the CIHR (e.g. SPOR) and other agencies that will tap into their core strengths (biobank, disease phenotyping) and exploit their opportunity to engage SPH clinicians in academic research. Initiatives could be centered around new, integrated translational projects that involve existing JHRC scientists/groups and clinical researchers and taking advantage of the significant infrastructure and expertise already fostered by the JHRC in the field of heart and lung disease. As noted in the 2005 External Review, the research community as a whole would greatly benefit from a clinical "alternative" practice plan, thereby promoting fundamental, clinical and translational research. Such a cultural shift would also encourage young physicians to more seriously consider academic careers.

vi. Education and training

Trainees should be encouraged to learn and contribute as much as they can while at the JHRC, with the expectation that they will take that knowledge out to the wider scientific world. This 'stepping stone' approach attracts the best trainees, increases the profile of the home institution, and leads to the cream of the crop returning if they are successful elsewhere after they leave. Through closer involvement of the educators, faculty and leaders of the JHRC, greater efforts should be exerted to engage the trainees in the planning and development of their programs. Expectations that PDFs will seamlessly track into faculty positions is entirely unrealistic. Indeed, it would be detrimental to the academic growth and expansion of the JHRC. Career counseling should be provided to graduate and post-graduate trainees, with practical guidance on how to carve a productive career, extending their knowledge and skills far beyond the walls of the JHRC.

vii. Research space

Although not voiced as a major concern by most of the JHRC faculty or staff, the reviewers were concerned that access to high quality research space will soon become a major issue and will impact on future program development, expansion and recruitment. The mouse facility is pressed for space and money and relies on industry contracts (~30% of the space) to sustain it and its staff. BioBank storage facilities will ultimately meet their capacity. The reviewers encourage JHRC leaders and faculty to incorporate short- and long-term transparent strategies to address all space and infrastructure issues, and to actively engage in any expansion and renovation plans that SPH and the PHCRI are contemplating.

viii. Incorporate an external scientific/strategic advisory board

A local but external scientific and strategic advisory board should be formed to provide intermittent feedback on a more timely basis than the internal/external reviews that occur every five years.

The initial report was prepared and submitted by:

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Revised version March 25, 2012 was prepared and submitted by Drs. Howard Feldman, with input from Drs. George Mackie, Yvonne Lefevbre, Ross MacGillvray and Ms. Tammy Brimner, following written comments and edits received from Dr. McManus