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www.sfu.ca/vpacademic**MEMORANDUM**

ATTENTION	Senate	DATE	March 19, 2015
FROM	Jon Driver, Vice-President, Academic and Provost, and Chair, SCUP	PAGES	1/1
RE:	Faculty of Science: External Review Update for the Department of Biomedical Physiology and Kinesiology (SCUP 15-14)		

At its March 11, 2015 meeting, SCUP reviewed the External Review Update Report for the Department of Biomedical Physiology and Kinesiology within the Faculty of Science. The report is attached for the information of Senate.

c: G. Myers



OFFICE OF THE VICE-PRESIDENT, ACADEMIC AND PROVOST

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www.sfu.ca/vpacademic**MEMORANDUM**

ATTENTION	Jon Driver, Chair, SCUP	DATE	February 20, 2015
FROM	Gord Myers, Associate Vice-President, Academic	PAGES	1/1
CC	G. Tibbits and C. Cupples		
RE:	External Review Update for the Department of Biomedical Physiology and Kinesiology		

The External Review of the Department of Biomedical Physiology and Kinesiology was undertaken in March/April 2011. According to the procedures established by SCUP, the Unit is required to submit an update describing its progress in implementing the Action Plan, which was derived from the External Review report, in the fourth year following the start of the External Review process. Please find attached this update, together with a copy of the Action Plan approved by Senate.

Based on this midterm report, my assessment is that the Department of Biomedical Physiology and Kinesiology has made substantial progress toward implementing the Action Plan, within the constraints imposed by its budget.



SIMON FRASER UNIVERSITY
ENGAGING THE WORLD

Memorandum

TO: Dr. Glynn Nicholls, Director
Academic Planning and Budgeting

FROM: Glen Tibbits, Chair
Biomedical Physiology and Kinesiology

RE: **External Review Action Report**

DATE: 25 Jan 2015

Attached please find our External Review Action Report. Please do not hesitate to contact me if you have any questions related to this report.

Best Regards,

A handwritten signature in blue ink, appearing to read 'Glen Tibbits'.


Glen Tibbits

External Review Update for the Department of Biomedical Physiology and Kinesiology

Action	Progress Made
1. Programming	
1.1.1 Undergraduate	
<ul style="list-style-type: none"> Increase number of research faculty involved in UG core courses (ER) 	<p>We have now assigned several research faculty into significant roles in our UG core courses. These changes include: Dr. Max Donelan (tenured Associate Prof) who is now teaching BPK 201 (Biomechanics), Dr. James Wakeling (tenured Full Prof) teaching BPK 301 (Biomechanics Laboratory). Both Max and James have been heavily involved in teaching courses to the Biomedical Engineering students in the School of Engineering but we have modified these courses to free up these faculty to teach more BPK majors specifically in core courses. In addition most of our research faculty are now heavily involved in the learning outcomes of each core course and often in their delivery.</p>
<ul style="list-style-type: none"> Better match between UG program and research faculty interests (ER) 	<p>We have approached this problem in several ways. We now have three majors: Biomedical Physiology (BIF); Behavioral Neuroscience (BNS) (in conjunction with Psychology) and Kinesiology (KIN). Only in the KIN major has there been a less than ideal match between the curriculum and the research faculty interests. We have made several changes to alleviate this problem in the KIN major. These changes include:</p> <ol style="list-style-type: none"> 1) We have removed a number of LD nutrition courses in the KIN curriculum and a certificate in nutrition for which we had no research expertise. We have linked relevant research faculty with the remaining UD nutrition courses that we teach in this area. We have targeted some other courses which do meet this criterion for elimination. 2) We have also made a stronger link in the KIN major between the UG program and research interests by recent faculty hires. For example, last year we hired Dr. Dave Clarke as a tenure track Assistant Professor with strong expertise in mathematical modeling and exercise. He has developed (and is developing) UD courses in exercise prescription which are critical for our KIN majors. 3) At our encouragement, Dr. Clarke is developing strong ties with Fortius Sport and Health (http://www.fortius sport.com) (and other related and newly created institutes) which will give our KIN majors access through practica at these institutes to specific patient groups and cutting edge technology in accessing body composition, physical literacy and health. 4) Several of the staff at Fortius et al. who are <i>bona fide</i> researchers with doctorates in several relevant disciplines will be seeking adjunct status in our department thereby ameliorating the relationship between curriculum and research expertise. 5) Lastly we are in the midst of creating non-invasive imaging acquisition and analysis (e.g. MRI, echocardiography, MEG) courses with imaging experts in Engineering (i.e. Drs. Sarunic and Beg who are both Associate members of BPK and a potential new faculty member in BPK who we are in the process of recruiting. This will give our KIN majors (and other interested students) some significant expertise in the use of various imaging modalities for patient diagnoses and treatments in order to converse effectively with other health care professionals.

<ul style="list-style-type: none"> • More expertise in exercise, nutrition (Surrey initiative) 	<p>As indicated in the previous response, we are strengthening our expertise in the physiological aspects of exercise. Although the Surrey initiative was approved by the SFU Senate, it has not yet been funded by the Provincial government, therefore we have not been able to implement this program or expand the nutritional expertise within BPK.</p>																												
<ul style="list-style-type: none"> • Limited number of faculty relative to load (reduced faculty complement) (ER) 	<p>While we are still seriously understaffed, this problem has been alleviated somewhat by a recent research faculty hire and two pending hires. With a headcount of 1000 students, BPK is the largest department in the FoS, representing about 25% of its majors but with a rather small faculty (research and teaching) complement which still needs to be addressed.</p>																												
<p>1.1.2 Graduate</p> <ul style="list-style-type: none"> • Increase quality and quantity of graduate applicants to our program (ER) 	<p>We have invested considerable time and effort into expanding the number of USRAs available to our UG students. Last year we offered about 20 USRA awards made up of NSERC & VP USRAs and those that we created from donor and other sources of funding. This has allowed many of our top UG students to work in BPK research labs. In the last 2 years 67% of MSc students entering our program have been from our UG program. While one does not want to create an incestuous program, this has been a way to significantly enhance the quantity and quality of our applicants, since these students have had extensive prior lab experience through the USRAs etc. and have therefore been well-trained and pre-screened.</p> <table border="1" data-bbox="885 737 1779 1127"> <thead> <tr> <th></th> <th>At time of ER</th> <th>Current</th> <th>% change</th> </tr> </thead> <tbody> <tr> <td>Graduate program enrollment¹</td> <td>42</td> <td>54</td> <td>+29</td> </tr> <tr> <td>Percent PhDs in program²</td> <td>34</td> <td>56</td> <td>+65</td> </tr> <tr> <td>Percent females in program²</td> <td>50.9</td> <td>57.3</td> <td>+13</td> </tr> <tr> <td>Time-to-completion</td> <td></td> <td></td> <td></td> </tr> <tr> <td>M.Sc. (semesters)³</td> <td>9.8</td> <td>8.0</td> <td>-18</td> </tr> <tr> <td>Ph.D. (semesters)</td> <td>18.6</td> <td>15.5</td> <td>-17</td> </tr> </tbody> </table> <p>¹2006-2008 vs. 2012-2014; ²2009-2010 vs. 2013-2014; ³2008-2010 vs. 2012-2014</p> <p>Notes Our graduate students received 7 tri-council Post-graduate awards in 2013/2014. Dr. Heather More won the award for best PhD in FoS and Quirks and Quarks in 2014.</p>		At time of ER	Current	% change	Graduate program enrollment ¹	42	54	+29	Percent PhDs in program ²	34	56	+65	Percent females in program ²	50.9	57.3	+13	Time-to-completion				M.Sc. (semesters) ³	9.8	8.0	-18	Ph.D. (semesters)	18.6	15.5	-17
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<ul style="list-style-type: none"> • Several perceived problems with the course based Master's Degree (ER) 	<p>We have eliminated this program completely. All students admitted to this program graduated by 2011/2012.</p>																												
<p>2. Research</p>	<p>Our research program is strong with virtually every research faculty member being funded externally. We have maintained and strengthened our 3 research foci: 1) Cardiovascular Physiology (from molecular to system levels); 2) Neuromechanics and 3) Chronic Diseases. We are making a conscious effort to hire research faculty whose work is complementary to that of existing faculty within these foci. We will continue to build on our strengths in</p>																												

	order to have critical mass to share resources and infrastructure as well as for more impactful research. As it a difficult time to procure external funding, the department has tried to help groups with maintenance and repair of critical equipment.
3. Administration	Apart from being understaffed the administration is capable and functional
4. Working Environment	The working environment remains productive and collegial.
5. Other	


 Glen F Tibbits
 2015.01.26
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MEMORANDUM

ATTENTION Glen Tibbits
Chair, Department of Biomedical
Physiology and Kinesiology

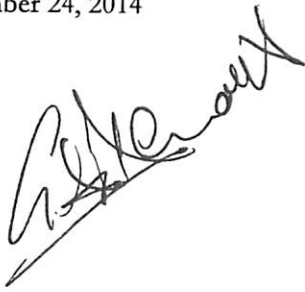
DATE November 24, 2014

FROM Glynn Nicholls
Director, Academic Planning and Quality
Assurance

PAGES 1

COPY Claire Cupples
Dean, Faculty of Science

RE: External Review Update for the Department of Biomedical Physiology and Kinesiology



As per Senate guidelines, the Department of Biomedical Physiology and Kinesiology is to report on progress being made in the implementation of the Action Plan that resulted from its external review in March/April 2011. This report will be presented to SCUP and Senate for information.

Please submit your progress report, using the attached template, by January 12, 2015. Also attached, for ease of reference, is the Action Plan that was approved by Senate on January 9, 2012.

Although your external review took place prior to the requirement to develop educational goals and assessment beginning with the 2013-14 external review cycle, any progress being made in your department in defining program and/or course level educational goals for academic programs would be welcome in your progress report.

Please contact me at 2-6702, glynn_nicholls@sfu.ca, or Bal Basi at 2-7676, bbasi@sfu.ca, if you have any questions or concerns regarding the external review update process.

Attach.

EXTERNAL REVIEW – ACTION PLAN

Section 1 – To be completed by the Responsible Unit Person e.g. Chair or Director			
Unit under review Biomedical Physiology and Kinesiology	Date of Review Site visit March 30 /April 1 2011	Responsible Unit person, Glen Tibbits	Faculty Dean Claire Cupples
<p>Note: It is <u>not</u> expected that every recommendation made by the Review Team be covered by this Action Plan. The major thrusts of the Report should be identified and some consolidation of the recommendations may be possible while other recommendations of lesser importance may be excluded.</p> <p>Should an additional response be warranted it should be attached as a separate document.</p>			
1. PROGRAMMING			
<p>a. Action/s (description what is going to be done):</p> <p>1.1.1 Undergraduate:</p> <ul style="list-style-type: none"> • Increase number of research faculty involved in UG core courses (ER) <p>We have already begun an implementation of team teaching in our core courses. This semester we introduced it into Kin205 and it is part of a revamping of our entire core curriculum. A committee has been struck which is being led by Mr. Craig Asmundson to re-examine our core offering in terms of content, instructors (sessionals vs. instructors vs. research faculty), continuity, integration and development of ideas. This committee is very active, has their own website and very enthusiastic and broad participation from the faculty. We are also evaluating the role of research faculty in core courses (Mr. Stephen Brown has been asked to analyze this on a semester basis) and are setting targets for the involvement of research faculty in core cores. In addition, we are investigating our role in the Biomedical Engineering program which uses several of our research faculty, limiting their capacity to teach within our own unit and how to better integrate it into our own curriculum.</p> <ul style="list-style-type: none"> • Better match between UG program and research faculty interests (ER) <p>This is a real challenge to resolve and is deeply rooted in the politics and history of our department. However, the undergraduate program committee (UPC) has been asked to earmark undersubscribed courses and programs for possible elimination. The ER suggested that we hire faculty in nutrition to help resolve this issue but this has already been done with limited success. We are currently entertaining the possibility of this being part of the expertise of the next faculty recruit. The Ergonomics stream has now been reduced to a certificate program allowing us to reduce our course offerings in this area by three courses.</p> <ul style="list-style-type: none"> • More expertise in exercise, nutrition (Surrey Initiative) <p>This has not been a goal of our program in Burnaby. However, it is a major focus of the Surrey Initiative. Unfortunately, the ENHD program is highly dependent on provincial funding for which there are no guarantees. If the plan is implemented as articulated then this will more than adequately address this concern. However, in the interim we are forging ahead with a scaled down Surrey initiative. I have asked Dr. Diane Finegood to head up the Surrey Initiative. The Dean of Science has been asked for a faculty replacement in this area that is</p>			

based on our limited faculty roster relative to our FTEs. This new faculty member will be recruited under the umbrella of Chronic Diseases (one of 3 major research thrusts of BPK) and we believe that this individual will become an integral member of the Surrey Initiative. Drs. Lear and Finegood are also proposing to develop an Institute (which will be before Senate shortly) which will partially allay this concern.

- **Limited number of faculty relative to load (reduced faculty complement) (ER)**

The Dean is well aware that we are “understaffed” relative to other departments within the Faculty of Science (including Biosciences and MBB) and the number of FTEs that we teach. We hope that this will be rectified by growth of the department over the next few years.

1.1.2 Graduate:

- **Increase quality and quantity of graduate applicants to our program (ER).**

1. The top graduate students in BPK are excellent; we have 2 Vanier award recipients. Furthermore, the BPK Graduate Program has grown since the external review, from 47 students in 2009/10 academic year to 57 (60 including qualifying students) in Sept. 2011. This may in part reflect the departmental name change and the faculty association which was one of the intentions of these recent changes. There is still a need, however, to increase the average quality of the applicants so that BPK faculty can be more selective about which students they accept. To accomplish this, we plan the following actions:

- a. The BPK website is currently being redesigned and updated to attract more HQ students [grad students in particular but also HQ undergraduates (UGs)]. Features under consideration include the use of videos of labs, faculty and graduate students to convey the high quality and innovative research done in BPK and the learning opportunities here.
- b. The number of courses for the M.Sc. has been reduced from 6 to 4 (now approved by Senate) to facilitate progress through the course component of this degree program and allow the student to spend more time on their thesis research.
- c. For the Fall of 2012, the department has agreed to provide three ‘Chair’s Research Assistantships’ valued at \$3,000 each to attract new HQ grad students who are not yet in receipt of an external award. Future allocations will depend on availability of funds.
- d. The GPC will review and discuss direct entry into the PhD program for highly qualified students with high GPA and research experience
- e. The GPC will clarify, and provide within the graduate handbook clearer guidelines and procedures for fast-tracking from MSc to PhD.
- f. The GPC will systematically track student progress through the graduate program. In 2011 the GPC has improved the graduate student annual report form, which now contains all information necessary to check graduate student progress. In 2012, we will convert this to a more user-friendly online format so that data can be uploaded and databased for efficient review by GPC members.
- g. Recently, the requirements for the PhD including changes to the comprehensive exam, have been streamlined and are now more in line with those in Biosciences and MBB facilitating progress through the degree while maintaining stringent criteria for the program.

2. **Bridge more effectively between the UG and grad programs by increasing exposure to and interactions with research faculty for undergraduates.**

We have recently made progress by requiring UG participation in BPK’s 3rd Annual Research Day. Students in KIN 305 (a physiology course required for KIN majors) and KIN 304 were asked to attend Research Day instead of their class that day, and to vote for and make a group choice of the best poster.

In consultation with the UPC, we will explore operationalizing the following ER Team suggestions:

- a. Incorporate more guest lectures by research faculty into undergraduate courses
- b. Consider more split courses, team-taught courses and seminars; spreading the teaching hours of research faculty over multiple courses
- c. Offer flexible ‘topics and issues’ courses reflecting research faculty strengths
- d. Incorporate more research, knowledge translation and career pathways information into UG courses, highlighting that a graduate degree can lead to many different career paths within and outside of academia. Consider a first year ‘overview’ course that encompasses this material.

Diversify BPK Careers Day, an existing yearly event for UG students, to represent more non-academic careers.

e. Increase upper level UG class sizes where needed (eliminating wait lists) to maximize the pool of high level UGs in BPK

f. Increase interaction of high level UGs with Grad students by seeking a venue and event in which they can mix.

- Several perceived problems with the course based Master's Degree (ER).

This program has been abolished. There is a committee of two led by Ms. AK Arnold which is looking into the possibility of a highly focused, profession-oriented course based Master's in Rehabilitation Medicine. A presentation has been made to the Graduate Program Committee which has asked for further information and subsequent presentations will be made to the GPC and the department as a whole.

h. Resource implications ((if any):

Increased number of research faculty. We have also asked for IT support for at least one year to facilitate the processing of admissions, recruitment and general administrative functions.

i. Expected completion date/s:

June 2013.

2. RESEARCH

2.1 Action/s (what is going to be done):

- We currently have a strong research program in place. However, to improve on this we are looking to strengthen the three existing clusters (Chronic Disease; Neuromechanics and Cardiovascular) rather than expand the breadth of the research profile of the department. The Surrey initiative, of course, if funded is a partial exception to this. Thus any future hirings will be made to strengthen existing clusters.

2.2 Resource implications (if any):

Limited with the exception that this is predicated on the hiring of additional faculty.

2.3 Expected completion date/s:

On going.

3. ADMINISTRATION

3.1 Action/s(what is going to be done) :

- Overall of IT infrastructure (Dr. Max Donelan will oversee the IT initiative and the group is making steady progress)
- Streamlining of protocols
- More responsibilities divided among faculty

3.2 Resource implications(if any):

We have requested IT support for at least one year.

3.3 Expected completion date/s:

Dec 2012 and ongoing.

4. WORKING ENVIRONMENT

4.1 Action/s(what is going to be done) :

- The working environment is collegial and very functional a situation which was commented on by the ER Committee. One of the self-imposed duties of Chair is to groom several junior colleagues to be candidates for the Chair position when the current Chair's term is up.

4.2 Resource implications(if any):

None

4.3 Expected completion date/s:

N/A

5. (OTHER)

5.1 Action/s:

-
-
-

5.2 Resource implications(if any):

5.3 Expected completion date/s:

The above action plan has been considered by the Unit under review and has been discussed and agreed to by the Dean.

Unit Leader (signed)		<small>Digitally signed by Glen Tibbits DN: cn=Glen Tibbits, o=Simon Fraser University, ou=Biomedical Physiology and Kinestology, email=tibbits@sfu.ca, c=CA Date: 2011.11.29 16:53:29 -0800</small>	Date
Name ...Glen Tibbits.....	Title...Professor and Chair.....	2 November 2011.....

Section 2 - Dean's comments and endorsement of the Action Plan :

The Department of Biomedical Physiology and Kinesiology (BPK) has undergone significant change in the last couple of years, transferring from the Faculty of Applied Science to the Faculty of Science, and changing its focus (and name) by adding a strong component of physiology to its historical roots in kinesiology. Members of the department and of the external appraisal committee are to be commended for their clear-sighted view of BPK's strengths and weaknesses, and of the opportunities and challenges that accompany this ongoing period of departmental change.

As identified by the appraisal report, there is an imbalance between the numbers of students in BPK and the number of full time, research faculty available to teach them. My own analysis of data available from Institutional Research and Planning shows that BPK is comparable to Biological Science and Chemistry in AFTE's while having only 55% and 67% of the CFL's of those two departments. Although one new research faculty member joined the department in 2010, and two more are scheduled to join in the 2011-2012 academic year, the imbalance persists. BPK makes a strong case for increasing their faculty complement. I am supportive, and have made a BPK hire one of the top priorities in the Faculty's 2012-2013 faculty hiring plan. To ensure the success of this hire and future ones, and ensure that they build on the current strengths and future aspirations of the unit, I strongly encourage the department to clearly define hiring priorities, specifically the academic discipline(s) of the scientist(s) that they seek to hire.

The needs of the undergraduate program(s) are not the only consideration when planning for the recruitment of new faculty members. As outlined below, and addressed in the report, the potential needs of the ENHD program, the desire to maintain leadership in health-related research and teaching, and the future of the graduate program must also be taken into account. In addition, the department should discuss whether it wishes to capitalize on the EPU unit. Faculty member support is essential if this unit is to fit into the academic needs of the Faculty and not become just a fee-for-service facility primarily for non-SFU users. Thus, I strongly encourage the department to develop a strategic plan upon which to build their faculty-hiring plan. While the needs of the ENHD and EPU must be taken into account, they should not restrict the scope of the planning exercise

Adding additional faculty members is only part of the solution. I recommend that BPK consider the costs and benefits of "teaching reductions" among research faculty. Streamlining the curriculum is also of benefit. Thus I am pleased that members of the department have started to take a close look at course offerings and have recognized the need for extensive curriculum analysis, including the elimination of poorly subscribed electives. As recommended in the report, it is starting to rationalize its low enrolment programs (e.g. ergonomics) and is taking a reasoned approach to the role of research faculty in lower as well as upper courses.

BPK has one of the highest levels of external research funding per faculty member in Science, comparable with MBB and Chemistry. However, members of the department have fewer graduate students on average than faculty in these and other life-science programs. BPK's numbers are even lower when one considers that many BPK graduate students are enrolled in the coursework masters program not in thesis based programs. I strongly encourage the department to continue its examination and reform of its graduate programs, as recommended in the appraisal report. I applaud the strong start that they have made in re-assessing the graduate course requirements and taking steps to increase their ability to attract higher quality graduate students. I am pleased that BPK has taken to heart the report's recommendation that they bring the undergraduate programs more into line with the research

interests of the faculty, to the benefit of undergraduate teaching and graduate student recruitment.

The department anticipates further major changes as it seeks to continue its leadership in SFU's expanding health research and education sector. This includes the implementation of the department's Exercise and Nutrition in Health and Disease Program (ENHD). Approved by Senate, this program is still awaiting provincial approval and funding. Establishing this new program, while maintaining established undergraduate teaching programs, improving graduate student recruitment, retention and programming, and maintaining faculty research strength, will be challenging particularly as we enter an era with little anticipated net growth in student numbers or government funding.

The ENHD program attracted enthusiastic support from the appraisers, with good reason. It fits with SFU's strategic research and academic plans. Based at Surrey, it should provide a community link with the burgeoning population south of the Fraser River, and fit well with other health related initiatives planned for the Surrey campus. However, provincial government funding for the program is by no means certain I strongly encourage the department to develop a plan for dealing with this uncertainty. Specifically, it should consider how to mount the program if funds are available, and how to move the department forward in that or other directions if they are not. Either way, there needs to be substantial faculty buy-in. I commend the new Chair for striking an ENHD steering committee. However, I strongly encourage the department to maintain ownership of this important initiative. Research Institutes, such as the one currently being proposed to Senate under the leadership of Drs. Finegood and Lear, are excellent ways to encourage research synergies but their mandate prevents them from offering undergraduate programs such as ENHD.

Faculty Dean

.....
Clayton

Date

.....
1 Nov, 2011