

Implementation Plan: Department of Exercise Science

The Department of Exercise Science offers health-related programs of study both at the undergraduate (BSc Major in Exercise Science, BSc Athletic Therapy, BSc Specialization in Exercise Science/Clinical Exercise Physiology, and BSc Honours in Exercise Science) and graduate (MSc Exercise Science) levels. The Department is committed to providing a curriculum with a strong scientific foundation that allows students to interpret, apply and conduct health science research. In addition to undergraduate professional programs in Athletic Therapy and Clinical Exercise Physiology, the Department has expertise in fundamental science and in health evaluation and intervention.

Within its Department Objectives, the Department of Exercise Science expresses its commitment *“to teaching and research in exercise, health, and physical activity, with emphasis on athletic therapy and clinical exercise physiology”*. In addition to a common goal *“to improve the health of the target audience (athletes, persons with chronic diseases and disabilities, healthy individuals, etc.) through the use of exercise,”* they indicate that studying in Exercise Science will *“provide professional knowledge and skills to interpret, apply and conduct applied health science research”* and *“to assess, evaluate and design programs that can maintain and improve health, fitness and athletic performance”*. The current strengths in the Department include a collective expertise directed at investigating how exercise and life habits prevent disease and help recovery from injury. This extends from the mechanistic understanding of the physiology behind the underlying cells and systems (*i.e.*, how the body and cell processes contribute to function) to a more global and encompassing health perspective that moves beyond exercise intervention. With researchers in areas ranging from physiology, biochemistry and nutrition, immunology, and biomechanics to health evaluation and interventions, cardiopulmonary rehabilitation, behavioural medicine, and population health, the opportunity exists for students to move between different levels of the mechanistic pursuit of understanding health and disease. Students have the opportunity of combining theoretical and practical aspects to develop a thorough understanding of the field.

When this appraisal was initiated, the complement of faculty and staff responsible for delivering these academic and research programs included 15 tenure-track faculty members (including one Tier I Canada Research Chair and one Tier II Canada Research Chair), one technical officer, seven lab instructors, one Departmental Secretary and one Assistant to the Chair. In addition to classrooms, undergraduate teaching laboratories, and individual research laboratories, the Department also maintained affiliations with the Centre for Structural and Functional Genomics, the Centre for Microscopy at Concordia, the Center for Research in

Human Development, the Centre for Studies in Behavioural Neurobiology, and the PERFORM Centre.

Research success within the Department is evidenced by the funding from private, provincial and federal sources awarded to faculty members in fundamental, applied and clinical research. Moreover, this success is reflected in the number of publications in quality international peer-reviewed journals. Further opportunities for continued research success are evident from the recent hires of dynamic new faculty members and the world-class instrumentation and facilities in the Science Pavilion and the recently completed PERFORM Centre. To continue the development and advancement of the Department of Exercise Science, a number of suggestions have been put forward through this appraisal process. These suggestions can be grouped into broad but interrelated areas: the direction of the Department, undergraduate and graduate education, and research. The Faculty of Arts and Science has reviewed the Department Appraisal Committee, External Examiners and University Appraisal Committee reports and provides the following comments on these recommendations.

Recommendation 1: The Department generates a document that defines its unified vision and strategic plan and describes its identity and plan for the future. This is particularly important given the rapid growth in the research capabilities and expertise of the Department (in areas ranging from applied to fundamental research) and the range of diverse programs (from professional to academic) housed in the Department. This discussion can be initiated immediately in the context of the current University Strategic Planning exercise. A Department document that engages all stakeholders within the department can be generated for May of 2016.

Recommendation 2: The Department must continue to invest attention into curriculum development and program design. The Department needs to complete a curriculum review to more clearly define program learning objectives and expected outcomes. This process can be carried out in conjunction with the departmental strategic planning exercise to organize, streamline and prioritize programs in the Department's plan for the future. This review has already been initiated and as a result of this process changes to the Clinical Exercise Physiology program are being considered. The review must extend to the Honours and Majors programs and the core physiology courses. Based on the information provided by the Department, this curriculum review process is already in progress. This exercise fits well with a strategic planning exercise for presentation in the Spring of 2016 and can be led by the Departmental Curriculum Committee.

Recommendation 3: As part of the ongoing curriculum review process the Department must develop a leadership team, conceivably containing representatives from each of its academic programs. These leaders can define and promote the strengths of specific programs. They also can ensure that each program is aware of complementary aspects of the other programs and can promote synergies between and among the programs. Moreover, they can confirm that the program courses are well aligned with the appropriate professional orders to best ensure that graduates can achieve appropriate certification. Finally, this team can strengthen the Department by ensuring that faculty members have a connection to the Department in addition to their specific diverse disciplines. This committee, developed within the Department by the Fall of 2015, can provide input into the strategic planning and curriculum review exercises.

Recommendation 4: The Department must improve communication among all of its members. Part-time faculty, laboratory instructors and technical staff all play important roles within the Department and especially in program delivery and should be included on departmental committees as appropriate. The input from these members of the Department is particularly important in the curriculum review process. This can be instituted immediately.

Recommendation 5: The Department needs to explore opportunities for enhancing the student experience in its undergraduate programs. This may include increasing the number of laboratory sessions to improve practical skills, increasing the number of internship hours and opportunities, and developing new research opportunities for students. Along with this, the Department can institute opportunities for its students to present their research, *e.g.*, an Exercise Science Research Day, or through colloquia, seminars and journal clubs. The latter may help to promote research opportunities in the Honours program and strengthen the links between the undergraduate and graduate programs. The Departmental Curriculum Committee should initiate this discussion immediately and bring the discussion to the Department in January 2016.

Recommendation 6: Student Services at the Faculty and University levels can be approached by the Department to see what is available and what can be made available for students in Exercise Science. For example, as new students enter their programs, the Department may be able to work with student services to develop new student orientation sessions. Faculty members can be encouraged to work with the Centre for Teaching and Learning (CTL) to improve the quality of their course delivery. CTL also can provide information in areas such as the common course outline template and strategic learning. Finally, Career and Placement Services can help in organizing career fairs for students. The Chair and Undergraduate Program Directors can initiate these discussions immediately for implementation of some of these options in the Fall of 2015.

Recommendation 7: The Department has to look for ways to integrate itself more strongly into the Faculty and University. This could include offering undergraduate courses, which may be of general interest and attract a wide audience (perhaps through eConcordia) or graduate courses which highlight a specific expertise within the Department and will be of interest to graduate students in other specific research areas (*e.g.*, Biology, Chemistry and Biochemistry, Physics, Psychology). In the same vein, graduate students within the Department should be made aware of courses in other departments which are relevant with respect to their areas of interest. The Chair and the appropriate Undergraduate and Graduate Program Directors can initiate these discussions immediately.

Recommendation 8: As graduate education happens both in the classroom and through mentoring by supervisors and advisory committees in a research environment, the Department should consult with the School of Graduate Studies and the other science departments to help in defining best practices for graduate student supervision. This may include exploring such areas as requiring regular progress reports, defining milestones, committee meetings, thesis format, student stipends, etc. The Graduate Program Committee can initiate these discussions immediately and report back to the Department by August 2016.

Recommendation 9: The Department will continue to work towards introducing its PhD program. In addition to developing a formal proposal with the assistance of the Associate Dean and the School of Graduate Studies, the Department needs to continue to enhance its research profile and define its research priorities. This will include expanding research collaborations within the Department and establishing effective ways of integrating the PERFORM Centre into the Department's research profile. Conversations between the Chair, the Dean, the Vice-President Research and Graduate Studies and the PERFORM Centre Director must continue.

Recommendation 10: In terms of defining the roles of administrative personnel within the Department who can support the graduate and undergraduate programs and/or the day to day running of the Department, a request can be submitted to Human Resources immediately to initiate a position review of administrative personnel.