Fitchburg State University

Department of Exercise and Sports Science

External Program Review, April 2019

Jeffrey C. Ives, Ph.D.
Professor and Graduate Program Chair
Dept. Exercise and Sport Sciences
Ithaca College

Introduction and Approach to the Review

The purpose of this review is to evaluate the Department of Exercise and Sport Science (EXSS) 2018-19 self-study report, with emphasis on the department's own recommendations and action plan. This review took into account the entire self-study document yet focused on the curriculum, faculty competencies and accomplishments, alumni outcomes, and student learning opportunities in line with the department's mission, vision, and outcomes. Further, this review examined these program characteristics relative to commonly accepted standards in professional and educational settings.

Beyond the self-study report, this review made use of published information on the FSU website, and interviews and discussions with faculty, staff, students, and administrators on a one day site visit.

Executive Summary

The EXSS Department should be commended for timely and committed responses to prior reviews, and their proficiency in making and operating a meaningful and contemporary educational program in the exercise and sport sciences. The 2018-19 self-study has accurately and forthrightly documented the strengths, weaknesses, and needs of the program. Overall, the EXSS department largely meets its stated objectives and admirably serves its students, the University, and the Commonwealth of Massachusetts.

Noticeably strong qualities of the program include a richly experienced faculty that have broad professional experience outside of the university setting, and by all metrics are highly engaged in the full spectrum of academic life. The faculty and administration are cohesive and enthusiastic about the present and future of the department, and students are engaged and respected. Another quality is the diverse and quality internship experiences afforded to the students. The program provides an efficient curriculum design that affords both flexibility and in-depth exercise science coursework. Finally, the breadth and depth with which the department serves the entire FSU campus with fitness and wellness service courses is an accomplishment in and of itself.

Two primary and several smaller recommendations are provided. First is the creation of written curriculum guidelines for any student desiring to go to graduate school in allied health professions. The EXSS program has considered formalizing and making visible such curricular options, but there is an uncertainty about doing so. The current recommendation is that this

becomes the top priority for reasons that include marketing, advising, and curricular integrity. This recommendation includes graduate programs beyond PT/OT, including other allied health professions and ESS graduate programs. In conjunction, it is recommended that selected faculty be assigned as pre-allied health advisors.

The second recommendation is to consider a greater involvement of psychosocial concepts and issues in informing curricular decisions and therefore the knowledge base required of students. These concepts (e.g., biopsychosocial model) are highly relevant to the three EXSS tracks, and include stress and health management, motivation, team dynamics, mental skills, adherence to exercise, behavior change models, the role of culture and community, and more. Requiring a sport and exercise psychology course, or a related course like health psychology, would be one way introduce students to these concepts, but probably not enough.

These two major issues are described in greater detail later in this review, as are other recommendations concerning student research, research equipment, student tracking, and faculty workload. This review follows the format of the self-study outline and touches upon other areas of consideration. Recommendations are presented in bold.

<u>Strengths of the Program</u>

a. Multidisciplinary Program.

The existing coursework provides good depth in the basic and applied physiological and biomechanical components of exercise science, but the multidisciplinary label is challenged by omission of the psychosocial aspects, or more properly, the biopsychosocial aspects of exercise and sport sciences. Among the EXSS self-statements regarding what sets the program apart is *"The relevance of our programs and course offerings with regard to professional trends.*" Sport and exercise psychology, health psychology, and related domains are foundational in the field of kinesiology and provide numerous relevant skills in working with clients across the age and ability spectrum. Even more, professional trends in the field are incorporating biopsychosocial concepts at an increasing rate, such as wellness coaching, mental performance coaches, the use of exercise as a mental health strategy, and so forth. This knowledge base is so important that the Medical College Admissions Test (MCAT) now has a section dealing with the psycho-social-biological bases of behavior. Clinicians – whether S&C or exercise physiologists – must make use of motivational and adherence strategies, behavior change techniques, mental skills such as attention control, relaxation, mindfulness, imagery training, goal setting and self-regulation, and many more. The understanding of social and cultural factors on stress, health and disease, and exercise efficacy is vital for any clinician and researcher, and not simply for the sake of diversity and inclusion. Finally, introduction to sport/exercise psychology gives students insight to other career paths, namely sport psychology consulting, wellness coaching, and athletic team coaching.

For the reasons above, it is strongly recommended that the EXSS/PYCH 2660 Exercise and Sport Psychology, or the Health Psychology course offered by the Psychology

Department, be required as a minimum. Other courses may include IDIS 2200 Stress, Illness, and Coping. Further, faculty may consider how aspects of the biopsychosocial model be incorporated into other courses as appropriate. Similar coursework that has incorporated the biopsychosocial aspects of health can be seen, for example, in NURS 3600 - Health and Physical Assessment.

Understandably, faculty are hesitant to take away from electives, but the current tracks have from 27 to 42 credits in free and LA/S electives. Required courses may be able to fit within the LA/S general education requirements. For professionally focused curricula like the ones offered by the EXSS Department, these electives are relatively abundant.

b. Teaching, Laboratory Space.
The existing classroom and office spaces appear quite adequate and in good condition. Recent updates to the library databases and electronic holdings provide excellent resources for students. Equipment in the primary lab space for clinical exercise physiology is very good and appears more than adequate for both teaching and research needs.

The EXSS secondary lab with EMG equipment is not adequate in term of equipment and space. Equipment placed in the S&C areas (Landry) could use additions. Recommendations for the laboratory space are intrinsically tied into research and thus additional recommendations are provided under the research category below.

It is recommended that any new biomechanics and motor control equipment be considered that is in keeping with the equipment being used in the field. The department's current jump contact mats, GymAware, Brower timing lights, and Keiser functional trainers are good examples, but not sufficient. Additional technologies the EXSS program may want to consider include reaction timing light systems (e.g., FitLight, Smartspeed), portable force plates, and smartphone based data collection and analysis systems. The smartphone systems, which include posture and balance assessment, GPS trackers, fitness trackers, biomechanical video assessment, and more, are the true next generation of applied research tools. Likewise, force plates are becoming standard for high level athlete testing. A camera system mounted in the Landry center, if used to its potential, would be a valuable addition.

The Department has eyes on a camera system for biomechanical analyses. Caution is urged in purchasing equipment (cameras or anything else) that has a steep learning curve and not likely to be used regularly, and perhaps rarely seen outside the research environment. The EXSS department must be judicious in how is divides ups equipment resources among venues. The Landry Center has the most room and the equipment can be most readily used in testing athletes. However, the multi-use aspect of the Landry Center and its distant location may not be the most conducive for students to learn how to use the equipment in a classroom or lab setting.

c. The Faculty as Teachers, Advisors, Scholars.

The qualifications of the full-time faculty are appropriate for the program and curricular delivery, and their involvement in academic life is admirable. Given the high teaching load of 24 credits per year, the level of professional engagement is impressive. This professional engagement is either through traditional research or professional service, and both are appropriately valued. It is important to note that the outside involvement of several faculty members are in exercise related areas – namely coaching and clinical exercise physiology – are strengths of the program that bolsters departmental credibility in delivering applied sciences and professional preparation.

The student-faculty ratio in most EXSS classes is very good, and coupled with lab courses permits faculty sufficient time to engage students in the classroom. The number of advisees per faculty, though, appears problematic. Discussions with students revealed their genuine enthusiasm for the options available to them as exercise science students, but also some frustration with not having earlier and more thorough counsel about these options. A number of students are internal transfers who appeared on the EXSS doorstep without much prior planning or information on EXSS. Perhaps as important, the advisee distribution does not appear focused toward advisors with specific strengths.

It is recommended that students be provided advisors based on area of study, e.g., S&C, clinical exercise physiology, fitness management, pre-allied health, and that curricular and career advising be implemented more cohesively. One suggestion is that at the start of 'advising week' that all students of a concentration meet together for a group advising time. Beyond the standard curricular scheduling, students can be informed about updated internship opportunities, DPT/OT/grad school requirements, options if a student does not get into graduate school, and so forth. Some of this material is covered in the professional practice course, but having such meetings 1-2 times per year over the course of a student's career can have immense benefits. Group meetings like this can then enable any follow up one-on-one advising to be more personalized, and are one way to address the less than optimal student retention rate (~60%).

A 24 credit teaching load is by itself not overly burdensome, but it allows no room for the inevitable challenges to the curriculum. The high percentage of faculty on overload is proof of that, and impacts faculty effectiveness in teaching and research, and student opportunities (e.g., independent studies). It diminishes time for faculty to think, plan, explore, and act, and overall, creates an atmosphere of catching up rather than moving forward.

The service courses offered to the FSU campus by the EXSS Department is impressive and commendable. It is encouraging to see that the FSU campus requires foundational courses in health/fitness/wellness, but it has placed an undue burden on the faculty. About 40% of curriculum load in delivering these service courses appears problematic and at the expense of potential EXSS electives. Though many of these courses are delivered by adjuncts, it still remains that the faculty deliver a proportionally large service to the campus. Adjuncts or part time faculty make up 44% of the faculty names, and others have been called in as temporary

replacements. In and of itself the reliance on part time faculty creates logistical problems in scheduling, consistency of curricular delivery, and engagement and advising with students.

It is the responsibility of all faculty to serve the unit, the college, and their profession, but the EXSS faculty engage in much – perhaps too much – campus service. In conjunction, the detail and effort put into the yearly program assessment appears burdensome, though as this task may become less onerous as the faculty become more experienced.

In sum, the level of faculty involvement in campus activities outside of their own department and students, namely service courses and university service, coupled with a large number of adjuncts, likely takes away from the time, energy, and engagement faculty can have with their own students. This must be addressed, but no specific recommendations are provided.

c,d,e,f Engagement with Students.

The ability of students to meaningfully engage with faculty is an important aspect of the learning experience, and indeed, arguably the most important feature of college life. Among the characteristics of the EXSS program that that set it apart is *"The student-centered atmosphere."* The EXSS program meets this claim by purposeful engagement with students. Engagement in this manner is possible through small class sizes and programmatic features such as mentored experiences in the form of internships, practicums, and independent studies. Though faculty campus workload outside of the EXSS department appears less than optimal to serve the EXSS students, the current structure of the program with required internships and reasonable class sizes does provide opportunities for meaningful faculty-student engagement. It is noteworthy to mention that the EXSS student handbook with curriculum materials and internship information is particularly well constructed and thorough. The internship information and requirements all but insures that the students will be set up for a meaningful and challenging experience.

g. Faculty Research.

Faculty research is consistent with a master's level university and a program that itself does not have a master's degree. When coupled in a broader context with 'scholarship', the faculty are doing well. However, the opportunities for faculty and student research appear limited; this is discussed in more detail below.

<u>Weaknesses of the Program and Opportunities to Extend Existing Strengths</u>

a. Research and Equipment.

Among the aspects of the program that the EXSS faculty deems as important is *"The hands-on experience through laboratory, practicum, internship, and research."* Among these, the research listing appears generous. The desire for the EXSS faculty to develop independent research lines, involve students in research, gain additional funding, develop collaborations, and improve lab equipment (i.e., biomechanics) is encouraging, but perhaps unrealistic if using traditional models of how research is conducted. The biggest issue is time. Sporadic

independent studies and special projects are useful but they do not permit the consistency of scheduling required to enable research programming for faculty or students to develop. Moreover, they create issues with faculty load and released time. A discussion with students (albeit limited) revealed that they would be interested in more hands-on time in the labs and more project or research type activity – and some may even choose that over an internship. Students also wondered if the research methods class came too early in their curriculum, and would be much more enthusiastic about professional conference attendance if they had some data to present.

Overall, the level of scholarly engagement by students is not clear, and the opportunities for student research do not appear to be well planned. This hampers the opportunities for some mentored research experiences.

It is recommended that the EXSS Department develop more intentional and accessible opportunities for student research.

These opportunities need not necessarily increase faculty load, and can be entirely consistent with the applied and hands-on focus of the curriculum. The EXSS Department itself offered some solutions, among them a required (or restricted elective) type of research course (e.g., research team, practicum) is a reasonable option. Internships or clinical practicums could have data collection and analysis components that would fit under evidence-based practice principles. In fact, the use of data to assess individuals and groups can be seen as a key skill for S&C coaches. Students can readily engage in "pre-post" studies, which are fundamental for any coach. Reliability and validity studies may not require much time at all and give the added benefit of bearing witness to topics covered in a research methods class. Alternately, existing lab courses (e.g., EXSS 4005) could use the lab portion to foster research skills and projects. In brief, there are a number of way to use existing courses to collect data and engage in research projects of sufficient quality to be presented both on campus and at regional conferences. Of course, any institutional review board permissions must be gathered, but may be able to be worked into the class requirements.

b. Programs.

There are three programmatic issues the EXSS Department put forth. The first issue involves the lack of electives, that is, a lack of breadth to the curriculum. Aside from implementing curricular changes around biopsychosocial issues and research opportunities (both detailed above), it is suggested that the depth of curriculum along the three tracks is sufficient and trying to expand the breadth may not be the best use of resources. In no way does this suggestion imply that courses such as nutrition are unimportant, but only that there are other priorities.

The second issue involves what is considered a lack of a personal training practicum. While acknowledging that personal training is not the same as S&C, it seems that the differences in personal training programming could be dealt with without much difficulty. Indeed, coursework in exercise psychology, and fitness management could address some aspects of personal training not normally a part of and S&C curriculum. Classes or topical material

focused toward personal training must recognize the interpersonal and innovative nature of successful personal trainers.

As such, the Fitness Management track may benefit from coursework related to entrepreneurship. Perhaps even an alternative to the track's management courses can be the FSU Entrepreneurship minor.

This suggestion is offered because the exercise/fitness/wellness field is overflowing with independent contractors finding niche markets. Entrepreneurship and innovation may be a more important skill set than say, economics.

The third, and most important, programmatic issue involves curriculum and advising for students desiring to go to graduate school in PT/OT and other allied health professions. There is uncertainty and differences of opinion among faculty and administration of what this could or should look like, but in the meantime students are not being served well. Advising in this area cannot rely solely on faculty advising. It is absolutely necessary that the curriculum requirements for these graduate programs (and others, see below) be more visible and laid out in curriculum sheets and catalogs.

It is recommended that the EXSS Department focus efforts into building curriculum options for students desiring pre-allied health preparation. In conjunction, it is recommended that specified faculty serve as "pre-health" advisors and work with the pre-med advisors in the Biology Department (which seemingly should also be upgraded).

Some may see this recommendation as detracting from the primary function of the department to produce exercise and sport science practitioners; essentially downgrading the department as a subservient vehicle to prepare students for graduate school. Others may hesitate to promote graduate allied health opportunities without knowing the acceptance rate of students into these programs. And indeed, it may be misleading to promote a pre-allied health curriculum if few if any students get accepted into graduate school. Nevertheless, many of the EXSS students are already planning on allied health graduate programs, and more will continue to do so, in other words, that train has left the station. The EXSS Department must get on board and provide the best pre-health curriculum and advising it can, and this must be done in conjunction with other pre-health, pre-med advising on campus. The current "committee" of a single pre-med/health advisor in biology appears woefully inadequate and should also be addressed. Clearly this is a discussion at the Division or University level. While not a formal recommendation, it would seem wise that the Division/University seek out affiliations with other schools, for example, the Massachusetts College of Pharmacy and Health Studies. This must be a college-wide initiative, not solely departmental.

The importance of a cohesive pre-health curriculum, including scope and sequence of courses, cannot be overstated. Printed (e.g., web) curriculum recommendations for pre-allied health will be used by prospective high school students, current FSU students and advisors, high school counselors, and more. The listing and advertising of pre-allied health options

serves to educate prospective students – including internal and external transfers – on the possibilities within the EXSS program and rigors of what faces them. Written curriculums enable students to plan ahead and self-direct their own schedule. Perhaps as important, it is an important safety net for students and advisors to insure that curricular requirements are fully specified and protects advisors against incorrect advising and against backlash from students thinking they have been poorly advised.

PT and OT are not the only allied health professions the EXSS Department could prepare students for. It is suggested that the EXSS department expand its pre-allied health to include nursing, physician assistant, chiropractic, and any number of other allied health professions. Indeed, some of these are mentioned on the EXSS website video. With athletic training moving exclusively toward an MS-AT degree, the EXSS department could be well-positioned to provide a "pre-AT" track. Exercise Science has the potential to be a strong major for pre-med students as well, but that may take a bit more thought at this time. No recommendation is made on how best to implement these recommendations, as the EXSS faculty are best suited to determine what may work best for the department. However, it need not be a separate track.

The EXSS program considers other graduate school programs (other than pre-allied health) as viable, even necessary, outcomes of both the S&C and exercise physiology tracks, yet little defines what curricula might satisfy graduate programs in these areas. It is recommended that there be guidelines and advising materials available to students desiring other graduate programs; namely those graduate programs in clinical exercise physiology or strength and conditioning. As an aside, many of these graduate programs require or look favorably upon experience in research and coursework in research methods and statistics, particularly when it comes to awarding graduate assistantships.

In conjunction with curricular materials, it is imperative that certain faculty be designated advisors to the pre-health students. The earlier recommendations about advisors and advising are no more important than in this area. These faculty would keep up to date on prerequisite criteria and work with other similar advisors on campus.

<u>Additional Findings and Recommendations</u>

1. Alumni Tracking.

   Among the desires of the EXSS program is that they will be set apart by *"The reputation of producing graduates who are leaders in the profession."* It is difficult to substantiate this claim due to limited alumni tracking and response rates on surveys. Tracking can be notoriously difficult and time-consuming and is out of a faculty member's job description. Yet, alumni tracking is absolutely necessary to promote a program, to substantiate claims, and provides the most relevant assessment data.

2. The Future: Accreditations and Graduate Programs.

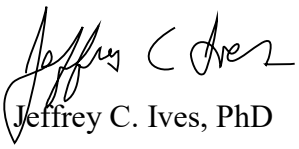
   The EXSS program appropriately makes use of curricular guidelines set forth by the major professional organizations (i.e., ACSM, NSCA) and is considering following potential

accreditation pathways. Though years away, the EXSS faculty are urged to proceed gingerly, with full knowledge of the burden and restrictions that accreditation brings. Further, the recent curriculum changes be allowed to mature before embarking on any new initiatives.

In a like manner, the EXSS program should ponder with care an MS degree. Given the regional nature of the university, a 4+1 or 3+2 program would be logical, but more important is niche that draws upon the skills and interests of the faculty. Taking cues from competitor institutions (e.g., Bridgewater State, Merrimack, Springfield) is wise, but ultimately, the program would need to find its own way with its own strengths. For example, the current partnership the EXSS program has with athletics could be expanded greatly, perhaps to include graduate assistantships in team coaching and S&C.

3. The Department's Mission and Vision should be more prominently displayed on the website.

Respectfully Submitted,



Jeffrey C. Ives, PhD

April 29, 2019