

**Department of Exercise and Sports Science  
Fitchburg State University  
Self-study report for AY14-AY18  
March 4, 2019**

## Table of Contents

Executive summary . . . . .	3
Overview and vision . . . . .	5
Overview of the department . . . . .	5
Program's, vision, mission, and objectives . . . . .	5
Mission . . . . .	5
Vision . . . . .	6
Objectives . . . . .	6
Relationship of the University's Mission . . . . .	6
Overview of Exercise and Sports Science Program. . . . .	7
Internal demand of the department. . . . .	7
Significant Changes Since the Last Review. . . . .	9
Assessment . . . . .	11
Program Inputs . . . . .	11
Program Reputation . . . . .	11
Students by Program . . . . .	12
Faculty. . . . .	13
Staff Support . . . . .	14
Resources . . . . .	15
Program Processes for Undergraduate . . . . .	16
Curriculum . . . . .	16
Students . . . . .	24
Faculty.. . . .	24
Quality improvement Initiatives . . . . .	26
Program Outcomes . . . . .	26
Program. . . . .	26
Student . . . . .	29
Analysis and Action Plan for the Future . . . . .	41
Strengths of the program . . . . .	41
Opportunities to address existing strengths . . . . .	43
Weaknesses of the program . . . . .	43
Opportunities for addressing weaknesses . . . . .	44
Positioning the program to address future direction of the discipline . . . . .	44
Action Plan . . . . .	45
Appendices . . . . .	50

## EXECUTIVE SUMMARY

The Exercise and Sports Science department prepares graduates for professional careers as well as advanced graduate studies in fields such as: physical therapy, occupational therapy, strength & conditioning, cardiac rehabilitation, fitness management, and wellness. The department aims to provide excellence in teaching and learning in the areas of clinical exercise physiology, fitness management, and strength and conditioning. In addition, the EXSS department supports all university students by helping them attain the foundations for personal wellness.

Students in the clinical exercise physiology track take specific liberal arts and science electives that when combined with their EXSS courses allow them to graduate with the prerequisites needed for acceptance into physical therapy, occupational therapy, or physician assistant graduate programs. Students in the fitness management concentration combine their EXSS course with business courses in order to graduate with the background needed for employment in the fitness industry. Students in the strength and conditioning program complete 1-2 credit courses in coaching, assessments for strength and conditioning, weight training for athletes, as well as 6 credits of hands-on practicum along with their other EXSS courses. Students in all concentrations have the opportunity to conduct research, present data at conferences, complete internships and apprenticeships, and attend conferences. Requirements for all students majoring in EXSS include completion of core EXSS courses, required liberal arts science courses, completion of a 240 hour internship, attending a conference, obtaining CPR certification, maintaining a minimum of a 2.0 GPA in all college courses, maintaining a minimum of a 2.5 GPA in the major, and earning a minimum of a 2.0 in Introduction to Exercise Science and Anatomy and Physiology I. Graduates from the EXSS program are successfully employed in many different settings such as hospitals, universities, fitness facilities, and strength and conditioning facilities. Many graduates obtain certifications in the field including American College of Sports Medicine, National Strength and Conditioning Association, National Academy of Sports Medicine and International Society of Sports Nutrition.

Classes across the major offer small student/faculty ratios with the largest courses capped at 24 students per class. The EXSS department not only serves the university through the major but also supports the university Liberal Arts and Science's curriculum by offering courses that provide foundation for personal wellness including, Health and Fitness, Exercise Nutrition and Heart Disease, and the honors course, Wellness in Today's World. The department employs 9 full-time tenured (6) and tenure-track (3) faculty members. Currently, there is one Full Professor, 5 Associate Professors and 3 Assistant Professors. In addition, seven adjunct faculty members are also employed to support the program.

The EXSS department was last reviewed in 2014. The external reviewer noted the steady increase in student- faculty ratio, the lack of facilities available to support strength and conditioning, as well as a lack of "on campus" hands-on-learning opportunities such as apprenticeships and independent and dependent studies. To address the last two concerns the Landry Strength and Conditioning Center was opened in 2018 and a concentration in Strength and Conditioning was developed with the first offering in the fall of 2018. To support hands on learning in this area, "on-campus" practicums were included in the curriculum for this program. In addition, since the last

review in 2014 the department has developed three new courses including one 4 credit laboratory course, incorporated a minimum grade requirement, and developed a strength and conditioning concentration as well as four 1-2 credit course to support the concentration.

Based on this self-study, we would like to further expand hands-on learning opportunities through the purchase of motion analysis software and body composition analysis equipment. Both would be used in the laboratory setting to enhance student learning of core concepts in EXSS and also have the potential to be used in fitness and performance analysis of student athletes or in research. We will also consider the possibility of expanding the curriculum to include a course and/or practicum in personal training, where students could train members of the Fitchburg State community in the fitness center to help them achieve their fitness goals. We currently have a dearth of electives in EXSS, as well as little room within the curriculum for students to take free electives. We will research topics for the development of electives as well as potential restructuring of our concentrations to create flexibility for students to take electives in EXSS topics of interest while still maintaining the necessary courses in the chosen fields of study. Finally, we plan to explore the possibility of developing a graduate program.

## OVERVIEW AND VISION

### 1. Overview of the department

The Exercise and Sports Science (EXSS) Department offers undergraduate degree programs that are both multi and interdisciplinary. Multidisciplinary in that it integrates anatomy, physiology, physics, psychology, and learning theory to describe and explain responses and adaptation to exercise and training and applies that knowledge to enhance physical potential for health, for sport, and in rehabilitation. Interdisciplinary in that it draws from biology and business administration to provide a foundation in these disciplines to support exercise science applications as well as to enhance career preparedness.

Students in the major experience a focus on science-based academics. This science background is necessary to understand the concepts inherent in EXSS courses like exercise physiology, functional anatomy, cardiovascular and electrophysiology, biomechanics of sport, and many others. Students who continue on to graduate school in exercise science, physical therapy or similar advanced degree programs may find additional coursework like organic chemistry, physics and calculus are commonly required.

EXSS majors have several possible avenues following graduation based on these various applications to the discipline. The EXSS major provides students with the training they'll need to pursue a career in an industry that offers a multitude of choices.

The EXSS Department also provides service to the university by offering courses that meet the university wide Liberal Arts and Science Health and Fitness requirement.

The department achieves its mission with nine full-time faculty members and a staff assistant. The faculty is diverse in their content expertise and experiences. Faculty disseminate knowledge through a variety of high impact teaching strategies that include writing intensive projects, class presentations, collaborative assignments and projects, laboratory work, and culminates with service learning in the form of internships.

Exercise and Sports Science students explore issues and analyze evidence through “hands-on” experience that are conducted through the department’s exercise physiology and functional anatomy laboratories, the Landry Strength and Conditioning Center, and the Recreation Center.

### 2. Program’s, vision, mission, and objectives

#### **Mission:**

The Exercise and Sports Science Department’s mission is to prepare graduates for professional careers and advanced graduate studies in fields such as: physical therapy, occupational therapy, strength & conditioning, cardiac rehabilitation, fitness management, and wellness. This is accomplished through a combination of interactive classroom and unique hands-on laboratory experiences and internships. The EXSS Department utilizes evidence-based research to guide the curriculum thus preparing students for careers in the healthcare and fitness industries. We support all university students helping them attain the foundations for personal wellness.

We will be set apart by:

1. The relevance of our programs and course offerings with regard to professional trends.
2. The student-centered atmosphere
3. The reputation of producing graduates who are leaders in the profession.
4. The hands-on experience through laboratory, practicum, internship, and research

**Vision:**

The Exercise and Sports Science Department will be a destination campus for a degree in exercise science, being recognized in the Northeast region and beyond for its excellence in teaching and learning in the areas of clinical exercise physiology, fitness management, and strength and conditioning. We will be known for our commitment to preparing competent professionals, prepared graduate students, and lifelong learners.

**Objectives:**

- Provide relevant, scientifically-based professional education to students who choose Exercise and Sports Science careers, either in the clinical, athletic, or fitness setting.
- Provide leadership opportunities through apprenticeships, specified internships, and presentations and publications.
- Support the University's liberal arts requirement in the area of health and fitness.
- Provide opportunity for students to learn lifetime leisure skills.

**3. Relationship of the University's Mission**

The mission of the University emphasizes excellence in teaching and learning, by blending both arts and science with professional programs. The University also fosters lifelong learning and civic and global responsibility, both in and beyond the University community.

The Exercise and Sports Science Department's curriculum is very heavily science based. The curriculum provides the foundation for the students to be prepared for careers in the fitness industry or preparation to attend graduate school. To facilitate learning, many of the courses have a formal lab scheduled, or lab activities included, so students can relate classroom activities to real life experiences that will occur in the field. This is in keeping with the University's mission of combining the liberal arts and sciences and professional programs.

To demonstrate excellence in teaching, many of the courses are taught using the subject matter required for certification by the American College of Sports Medicine, National Strength and Conditioning, and other similar professional organizations. Faculty pedagogy consist of lecture, demonstration, lab and the latest technology.

Learning experiences required for Exercise and Sports Science students to graduate are attending professional conferences and a 240 hour internship. Both of these professional experiences provide the students with an understanding of how important lifelong learning is to maintaining excellence in their chosen profession. Throughout the school year, students have many opportunities to attend campus wide lectures, demonstrations and movies on a variety of related topics. The variety of lifelong experiences are in keeping with the University's mission of extending a student's education beyond the classroom.

Considering civic responsibility, Exercise and Sport Science students have participated in the Falcon 5k road race, where the money from the race is donated to a worthy cause in the community. Students have also participated in the Special Olympics, which is held on campus annually, and the health fair at Fitchburg High School.

#### **4. Overview of Exercise and Sports Science Program**

The Exercise and Sports Science major is designed with three career concentrations: clinical exercise physiology, fitness management, and strength training & conditioning. The major is both multidisciplinary and interdisciplinary.

There is a common core of Exercise Science courses to ensure a solid foundation in the various disciplines that comprise this multidisciplinary field of study, and to ensure the ability to apply knowledge in a variety of practical experiences. There is an opportunity also to develop breadth and depth in the field of Exercise and Sports Science as each concentration has specific requirements, as well as free electives. Please refer to the 4 year plans of study in the section on Curriculum in this document for specific course requirements of each concentration.

The Fitness Management, (120 or 121 credits depending on the number of 4 credit science electives) curriculum consist of a combination of science based courses and Business Administration courses. As the Health Club industry continues to grow and be profitable, numerous opportunities exist for qualified students to obtain employment in this industry, with opportunities ranging from personal trainer to manager to owner. Appropriate education is essential; employers are already seeking those who have the knowledge base to work with a variety of populations. Students acquire the necessary skills to manage and operate a business effectively and may also complete a Business Administration minor. A major component of the curriculum is a 240-hour internship typically completed during senior year.

Clinical Exercise Physiology (120 credits) focuses heavily on the sciences in order to prepare students for graduate school in such majors as physical therapy, cardiac rehab, and other allied health programs. There is a growing employment market for the clinical exercise physiologist who will work in a variety of settings where exercise is used in the prevention and treatment of chronic diseases. Students in this concentration take upper level electives where they consider cardiovascular function through application to exercise and disease states as well apply learning from prior courses to a clinical setting. Senior year students must complete a 240 hour internship to graduate.

Graduates from the Strength and Conditioning concentration (120 credits) will have the knowledge necessary to pass nationally recognized strength and conditioning certification exams, will possess the skills and abilities to be successful working with recreational to professional athletes in a commercial setting or with collegiate or professional teams, and will be skillfully prepared to complete a graduate program in the field. Students in this concentration complete courses in a variety of areas related to sport performance (e.g., assessment and weight training courses for athletes, nutrition, sports medicine) as well as 6 credits of in-house practicum in strength and conditioning. Senior year students must complete a 240 hour internship to graduate.

#### **5. Internal demand of the department**

In addition to serving Fitchburg State University through the major, the department also supports the university Liberal Arts and Science's Health and Fitness requirement through the courses EXSS 1000: Health and Fitness, EXSS 2060: Exercise Nutrition and Heart Disease, and HON 1151: Wellness in Today's World. Former courses also meeting the Health and Fitness requirement include Experiential Approaches to wellness and Applied Concepts in Fitness for Police.

Service to the University in teaching courses that fulfill the Health and Fitness requirement has been a large part of the teaching load for the EXSS department (approximately 40% of EXSS course offerings). Despite offering approximately 14 sections of such courses each semester, these courses always fill early during registration, suggesting the need for additional sections to be offered. Furthermore, the high demand for Health and Fitness courses combined with meeting the demand for EXSS majors has resulted in a large need for part-time faculty to teach Health and Fitness courses, with approximately 70% of these courses being taught by part-time faculty. The tables below summarize the courses offerings and students served during the review period.

#### **Undergraduate Day Course offerings meeting the Health & Fitness Requirement (Fall 2013-Spring 2018)**

Total # of traditional Health & Fitness Sections offered: 102

Total # of online Health & Fitness sections offered: 17

Total # of traditional Exercise, Nutrition and Heart Disease sections offered: 13

Total # of online Exercise, Nutrition and Heart Disease sections offered: 3

Total # of courses taught in other disciplines to meet the Health & Fitness requirement: 4

(i.e. *Experiential Approaches to Wellness*; *MPTC: Applied Concepts in Fitness for Police*; *Wellness in Today's World*; *LECAP*; *Independent Study*)

Average of sections offered per semester: 14

Total # courses taught meeting Health and Fitness requirement: 139

Total # of students in all courses: 3,599

#### **GCE Course offerings meeting the Health & Fitness Requirement (Fall 2013-Spring 2018)**

Total # of traditional Health & Fitness Sections offered: 4

Total # of online Health & Fitness sections offered: 16

Total # of traditional Exercise, Nutrition and Heart Disease sections offered: 0

Total # of online Exercise, Nutrition and Heart Disease sections offered: 12

Total # of other courses taught to meet the Health & Fitness requirement: 10

(i.e. *LECAP*; *Independent Study*; *Study Abroad*)

Total # of Summer Bridge Health & Fitness Sections offered: 10

Average of sections offered per semester: 2

Total # of courses taught that met the Health and Fitness requirement: 52

Total # of students in all courses: 700

In the spring of 2017, *Wellness in Today's World* was developed as a Health and Fitness course for the Honors program. The former required course, *Experiential Approaches to Wellness*, had not been taught in two years. Additionally, feedback from students, the Honors program director, and the instructors of the course themselves suggested that the course might be more effective without the orienteering component. This course, designed upon request of the Honors program director, was being proposed as an alternative to *Experiential Approaches to Wellness* to fulfill the Health and Fitness requirement for students in the Honors program. The new requirement was approved in the spring of



2017 and taught for the first time in the fall of 2017 with an enrollment of 19 students. One section of the course was offered Fall 2018 with an enrollment of 17 students.

## 6. Significant Changes Since the Last Review

Since the last review in 2014, Exercise and Sports Science has participated in a number of initiatives and undergone a number of changes. The external review identified several areas of potential growth within the department. The reviewer noted that there has been a steady increase in student-faculty ratio. At the time of the review, there were nine full-time faculty, which is the number of full-time faculty currently in the department. The faculty members are different, however, as several faculty present during the previous review cycle retired or left for personal reasons, and were replaced by new hires. Faculty hired during this time have expertise in exercise physiology, exercise with special populations, athletic training, biomechanics, and injury prevention.

The external reviewer noted the lack in facilities to support the strength and conditioning activities in our major. In January of 2018, the Landry Strength and Conditioning Center was opened to fill this void. This enabled the department to pursue a concentration in Strength and Conditioning. The table below outlines the Action Plan goals from the department's last program review.

Goal	Action/Date met	Comments
Develop a new course, <i>Introduction to Research in Exercise Science</i>	<i>Introduction to Research in Exercise Science</i> approved in 2015	This is now a required course in the EXSS major
Develop a new course, <i>Neuromechanics of Human Motion</i>	<i>Motor Control of Human Movement</i> approved in 2015	This 4 credit lab course replaces the former requirement of two 3-credit courses in biomechanics and motor control
Investigate the possibility and appropriateness of an EXSS pre-major	A minimum grade requirement in <i>Anatomy and Physiology I</i> and <i>Introduction to Exercise Science</i> was approved in 2016 for the early identification of students with the highest probability of success in the major	These two courses were identified as strong predictors of success in the EXXS major. Students must earn a 2.0 or higher in both classes before progressing in the major.
Explore the addition of a concentration in Strength and Conditioning	A new concentration in Strength and Conditioning was approved in spring 2018. This included the development of new courses to support the concentration.	New courses include: <i>Assessment in Strength and Conditioning</i> , <i>Introduction to Sports Medicine</i> , and <i>Practicum in Strength and Conditioning</i> (four, 1-2 credits each)

Consider development of IDIS programs in Fitness and Coaching	Not met	
Consider development of concentration in sports medicine or pre-physical therapy/pre-occupational therapy	Decided not to pursue, as our undergraduate program in clinical exercise physiology plus several general education electives fulfills prerequisites for graduate programs in both physical therapy and occupational therapy.	Discussions over the past year have lead the department to reconsider this idea. As such, we plan to review the clinical exercise physiology concentration with the possibility of splitting it into two concentrations. This is included in our action plan for the current evaluation.
Expand apprenticeship, independent study, and dependent study offerings to provide more opportunity for hands-on learning	“on-campus” practicums (4 semesters) are required for the Strength and Conditioning practicum (first offerings in AY19)	The department recognizes the need for support from administration for independent studies to support faculty-led student research.
Submit request for high speed motion analysis system	Strategic budget request submitted 2019	

During this time, we also changed the name of Senior Seminar to Professional and Career Development and moved it to the junior year. This was in response to students who felt the information from the class would have been more valuable to them earlier on in the curriculum. We also removed General Biology II as a requirement for the Clinical Exercise Physiology concentration and developed courses in Applied Nutrition and Wellness in Today’s World (for honors program). Finally, we worked with faculty and administrators at Mount Wachusett Community College to establish an articulation agreement between their Physical Therapist Assistant program and the EXSS major at Fitchburg State.

## ASSESSMENT

### 1. Program Inputs

#### a. Program Reputation

##### i. Distinguishing Characteristics

The Exercise and Sports Science (EXSS) Major at Fitchburg State University offers a well-rounded multidisciplinary curriculum that includes a strong emphasis on the three disciplines of exercise science (physiology, motor control, and biomechanics) and culminates in a professional internship experience. There are three degree concentrations (tracks) within the EXSS Major: Clinical Exercise Physiology, Fitness Management and Strength and Conditioning (added Fall 2018). All three degree concentrations are designed to offer opportunities to gain depth and breadth in the discipline through specific classes that prepare our students to gain employment in their chosen profession or, if an advanced degree is required, continue on to graduate school. Students in all three concentrations must complete a 240 professional internship to graduate. The major offers a small student/faculty ratio with the largest class size in major courses capped at 24 students per class.

##### ii. Congruence Between Program Goals and National Standards

The concentrations' curricula prepares students for a number of certifications in the field including American College of Sports Medicine, National Strength and Conditioning Association, National Academy of Sports Medicine and International Society of Sports Nutrition.

Students in all concentrations have the opportunity to undertake research projects, present data at local, regional and national conferences, complete internships outside the university and apprenticeships within the university, and attend regional and national professional conferences.

##### iii. Visibility

The EXSS program is showcased by our students' performance both during, and after, their time at Fitchburg State University. All EXSS Majors must complete a 240 hour internship. Often, these internships are undertaken at businesses across the commonwealth. Site supervisor feedback has been outstanding as 9 out of 10 interns were given a 95-100% assessment from their site directors. Furthermore, graduates from the EXSS program are successfully employed in many different settings such as hospitals, universities, fitness facilities, and strength and conditioning facilities.

EXSS students have participated in the University's Student Faculty Summer Research Collaborative the past two summers. Students in this program collected data within the Fitchburg community and also presented their work to members of the campus and local community at the end of each summer. An article about the program was published in the Sentinel and Enterprise newspaper in July of 2017.

The following examples represent additional ways in which the EXSS department is presented in a positive light. EXSS faculty and students present at University, regional, and national conferences. The EXSS Department will also be featured in a documentary (currently in production) on obstacle-course racer, Faye Stenning. The EXSS Department currently oversees Facebook and Instagram pages that present EXSS events.

##### iv. Congruence Between Program and Future Needs of Profession

In response to the growing demand for strength and conditioning coaches and recommendations from the previous program review, the EXSS department added a strength and

conditioning concentration. This concentration is the only undergraduate program available in Massachusetts at a state institution (others are offered at private universities), thus providing students in the Commonwealth with an affordable option to enter into this field.

Many allied health clinical professions (e.g., Athletic Training, Occupational Therapy, Physical Therapy) are now requiring an advanced degree. Students who complete an EXSS degree at Fitchburg State University have the academic background and foundation for these programs. Many EXSS graduates have successfully applied and been accepted to these programs.

## **b. Students by Program**

### **i. New Student Enrollment Trends**

With the exception of AY14, the number of incoming freshmen declaring as EXSS majors has remained steady (range: 34-38), representing 4.7 to 5.6% of the incoming freshmen class. The number of incoming freshmen declaring EXSS as a major decreased in AY18, but it is too early to know if this reflects a trend. The number (and percent) of incoming transfer students declaring as EXSS majors has been more variable, peaking in AY14 (N=46, 10.6%) and consistently declining through AY 17 (N=29, 6.6%), but rising in AY18 (N=41, 9.5%).

### **ii. Minimum Qualifications Students Must Have in the Program**

1. Complete core EXSS courses, including a 240-hour internship
2. Complete required liberal arts science courses (concentration-dependent)
3. Attendance at professional conference
4. Cardiopulmonary Resuscitation (CPR) certification
5. Maintain overall cumulative GPA of 2.0 or higher in all college courses
6. Maintain a cumulative GPA of 2.5 or higher in EXSS courses
7. Minimum grade of 2.0 in Introduction to Exercise Science (EXSS 1011)
8. Minimum grade of 2.0 in Anatomy and Physiology I (BIOL 1200)

### **iii. Enrolled Student Profile**

At Fitchburg State University, institutional diversity is on the rise. From AY13 through AY17, institutional diversity has steadily increased, rising from 18.4% of students self-identifying as a race/ethnicity other than white to 28.0% (Appendix 2). A similar trend is seen in students declaring as Exercise and Sport Science (EXSS) major, increasing from 17.9% (AY13) to 30.4% (AY17). Further, the proportion of students self-reporting as 'First-Generation College Student' also has increased.

Within EXSS, the trends in enrollment when stratified by sex is similar to the institutional trends. There is a slight downward trend in percent of students at the institution and in EXSS who self-report as female, with both reaching the lowest percent in AY17 (52.4% and 50.9%, respectively).

From AY13 through AY17, there appears to be an increasing decline in total enrollment in EXSS classes relative total enrollment in all classes at FSU (AY13=5.9%; AY17=4.4%). It is unclear as to why in contrast, the total enrollment in EXSS classes relative total enrollment in all classes at FSU for undergraduates in Graduate and Continuing Education has increased over the same period (AY13=4.1%; AY17=5.3%). One possibility is the increase in the number of traditional day students taking offerings in health and fitness and exercise physiology through GCE.

Retention rates for full-time freshmen who re-enrolled the following fall semester dropped in AY15 and AY16 for EXSS majors (41.0% and 45.7%, respectively) relative to other years within the

major as well as institutional retention rate in major for all years. It is plausible that this may be related to larger-than-usual incoming cohort (freshmen and transfer majors) in AY 14, which also may partially explain the large increase in retention for EXSS majors seen in AY17 (67.7%).

**iv. Number of Majors: Overall and by Track**

The number of EXSS majors peaked in AY14 (N=279) and has declined slowly through AY2018 (N=212). This peak corresponds with peaks in incoming freshmen majors (N=61) and in incoming transfer majors (N=46) during AY14. The slight decline in EXSS majors from AY14-AY15 may be due to relatively larger graduation group (N=64) coupled with relatively large incoming freshmen/transfer majors (N=107) in AY14 without an increase in the number of incoming freshmen majors and/or incoming transfer majors the subsequent year (N=75). The decline in EXSS majors from AY17 to AY18 likely reflects the large graduating class in AY17 (N=70). During the review period, the proportion of students selecting the Clinical Exercise Physiology track has remained relatively stable (81.5%)

	AY13	AY14	AY15	AY16	AY17	AY18
# Freshmen	34	61	38	35	34	27
# Majors	237	279	273	269	237	212
# Internships completed	51	42	43	60	62	39
# Graduates	33	64	24	55	70	41

**c. Faculty**

The department currently employs 9 full-time tenured (6) and tenure-track (3) faculty members. Presently, there is one Full Professor, 5 Associate Professors and 3 Assistant Professors. Seven adjunct faculty members are also employed to support the program.

The varied exercise science specializations of the faculty members provide support for the three different concentrations offered within the department (Clinical Exercise Physiology, Fitness Management, and Strength and Conditioning). In addition to teaching duties, faculty members of the Exercise and Sports Science Department conduct research and present at professional conferences. Faculty members also serve on departmental and university committees and participate in the academic functions of the university.

The Exercise and Sports Science Department faculty have a variety of professional skills, with many having certifications from the American College of Sports Medicine and the National Strength and Conditioning Association, among others. The faculty have presented their work at regional, national and international conferences. This work has included research on the effects of caffeine ingestion, skeletal muscle fatigue, behavioral correlates of physical activity, and energy intake effects on athletic performance. Many faculty members are active coaches and participants in athletic events, thus providing unique insight into the effectiveness of the latest sport-related scientific trends. Faculty credentials and curriculum vitae are reported in appendix 3.

#### **d. Staff Support**

The department employs one, full-time 10 month Administrative Assistant II – Grade 17. The duties required in this role are as follows:

- Provides administrative support to all members of the academic department in preparation of course materials, reports, composing and editing correspondence, administrative forms/reports, preparation of department attendance records, and other materials common to an academic office. Performs miscellaneous general office duties, such as: monitoring department inventory and ordering supplies as necessary, answering telephones and distributing messages, sorting and distributing mail, coordinating purchasing and payment activities for the department, maintaining department files and assisting with special orders.
- Maintains EXSS labs by monitoring inventory and ordering supplies and lab equipment; tracks equipment borrowed by students, prepares schedules for labs, sets up and manages service contracts for lab equipment.
- Assists the department chair in preparing reports.
- While working with department chair, reviews course lists and assists with analyzing needs for courses per semester; prepares and maintains faculty block schedules. Uses EMS to build, revise and maintain course schedules for the academic year.
- Produces various reports from Banner, tracks undergraduate students of the program and collaborates with faculty to analyze departmental reports; may prepare reports and presentations using Microsoft Word, Excel, and Power Point.
- Assigns and maintains advisee lists for each faculty member. Initiate the department advising period. Assists students with preparing for their advising appointments. Assist students with preparing paperwork to transfer into and out of the department and other departmental forms.
- Maintains and updates departmental web page/s for the department while working with the chair for content and information.
- Uses Banner System to request purchases and process authorizations for payment; verify goods/services received and resolve discrepancies with vendors; assist department chair with budget preparation by researching costs for budget requests and preparing budget paperwork. Responsible for processing all financial transaction paperwork, such as: purchases, travel, budget tracking and resolution of purchasing and account payable issues. Uses Microsoft Excel to track purchases and expenditures for department budget and faculty travel expenses.
- Hires, trains, and supervises student workers. Approves hours worked in SSTA.
- Maintains reports to track students who have applied to the program as well as those already in the program; verify program status, and sort data as needed for evaluations, reports, etc.
- Analyze data in managed reports in order to track the qualifications for scholarship candidates.
- Assists with the distribution and collection of student evaluations per semester.
- Assist each semester with student registration and add/drop, process those requests; release PIN to students.
- May plan and coordinate departmental events, reserve facilities, contracts for presenters, setup, arrange for catering, design and mail invitations, flyers, programs, and posters.
- Provides support to search committees for full time and part time vacancies.
- May require additional duties associated with other university offices or departments.

- Notifies students of upcoming meetings, events, changes in courses, and any important departmental information. May assist students in processing paperwork common to an academic department.

**e. Resources**

**i. Fiscal**

*The Centralized Budget at Fitchburg State University:*

The following items are part of the centralized budget: full-time and part-time salaries, telephones, postage, department copy machines (multi-function devices), printing services, computers and office space. Accordingly, the department does not need to allocate any individual monies for these items.

*Exercise and Sports Science Department Operating Budget*

The EXSS Department is allocated an annual budget which is used for the following types of expenses: office supplies, educational materials, equipment, laboratory supplies, repairs, technology, etc. The department may request funding for one-time expenditures in addition to the operating budget during the annual budget cycle. The following table includes the approved operating budgets for EXSS during the review period.

	<b>FY2014</b>	<b>FY2015</b>	<b>FY2016</b>	<b>FY2017</b>	<b>FY2018</b>
Approved Operating Budget	19,711.00	21,544.00	20,229.00	19,218.00	19,218.00
Travel	3,600.00	3,600.00	3,600.00	3,600.00	3,200.00
EBRQ-Extra-Ordinary Budget Requests			23,300.00		
Grants & Faculty Incentive					
Travel/Projects/Research	500	1,292.78	1,900.00	2,310.00	2,700.00
PROI -Projects -Instructional Equipment	18,648.00	22,219.35		9,400.00	2,995.00
Student Research Grants			750		
Recruitment		1,166.68	395.63		2,400.00
<b>Totals:</b>	<b>42,459.00</b>	<b>49,822.81</b>	<b>49,822.81</b>	<b>34,528.00</b>	<b>30,513.00</b>
Contractual Continuing Scholarship	\$6,759.00	\$6,957.00	\$7,200.00	\$7,389.00	\$6,752.00
Federal Work Study Funds Expended	\$4,400.00	\$5,426.00	\$4,720.00	\$3,500.00	\$2,684.00

*Professional Development*

Professional Development funds are made available to full-time faculty. In FY18, \$400 per faculty member was allocated annually in the departmental operating budget for this purpose. Specifically, these funds are used for travel to conferences. The department chair determines the distribution of funds based upon faculty requests. In addition, professional development funds are available annually to faculty to complete continued scholarship through the university.

**ii. Other resources**

**Space**

The Exercise and Sports Science Department resides at 155 North Street. In addition, we utilize a laboratory space in the Recreation Center and also complete labs in the Recreation Fitness Center, gymnasium, the Landry Center and outdoor track. See appendix 4 for more detail on specific resources available at 155 North Street, the Recreation Center, and the Landry center.

### **Technology**

Each faculty member has a laptop computer and access to a personal and shared file drive stored on the university server. Each classroom on campus is equipped with Tier 1 technology that is synced with the projector in the classroom and server on campus

### **Library Resources**

The Amelia V. Gallucci-Cirio Library offers resources, services and facilities that support the EXSS department and its students. These resources, services and facilities are addressed in the attached library's report on support for EXSS (appendix 5). The email draft was intended as a basis to meet and talk with the Exercise and Sports Science Faculty about the resources and services currently available as well as well as ideas for improvement.

## **2. Program Processes for Undergraduate**

### **a. Curriculum**

#### **i. Process for curriculum development and recent activity**

Curriculum development has been largely driven by departmental assessment. For example, assessment of student papers revealed that students' ability to critically evaluate emerging information in the field was weak. To address this, we developed an introductory course in research methods. This course is intended to not only expose students to reading, evaluating, and using primary research, but also introduce them to the research process and basic statistics used in the field of exercise science. This class became part of the core curriculum for all EXSS majors in the fall of 2015. Another example is the establishment of a minimum grade requirement for Introduction to Exercise and Sports Science and Anatomy and Physiology I. Review of historical data from the SSC workbooks revealed that fewer than 6% of students earning a D or F in these two introductory courses went on to graduate with a degree in EXSS. This led the department to institute a minimum grade requirement of 2.0 for those two courses. EXSS is a rigorous major. Our goal with the minimum grade requirements is to identify students early on who may not be successful in EXSS and subsequently advise them towards a more appropriate major. This policy took effect in AY2017.

Other curricular changes have come out of observation by, and discussion among, faculty as well as consideration of student feedback. Examples from the current review period include removing General Biology II from the Clinical Exercise Physiology concentration, combining the Biomechanics and Motor Learning courses into one course with a lab component, and adding a course in Applied Nutrition. General Biology II focuses on evolution, plant biology, and comparative animal biology, topics that are not directly relevant to the study of exercise science. While General Biology II does introduce hypothesis testing, as well as data collection and analysis, EXSS students now receive the same information in a research methods course within the EXSS major. Now, students interested in pursuing graduate programs in physical therapy and occupational therapy may elect to take General Biology II as part of their advanced LA&S option courses. As there is some natural overlap between Biomechanics and Motor Control, it made sense to combine the classes into a singular class that



includes laboratory experiences across both areas. The new course is a 4 credit course with a lab once a week. There was a demand among students for an alternative to Sports Nutrition. In particular, students who were more interested in pursuing clinical careers or fields that do not have direct involvement with athletes (like cardiac rehabilitation, occupational therapy, or physical therapy) desired a course with a focus on nutrition basics for the average person. Applied Nutrition was developed with this in mind and has been offered once a year since the fall of 2015. Student feedback from early in the review period suggested that topics covered in Senior Seminar would be more beneficial if offered to students in their junior year. Thus, Senior Seminar was changed to Professional and Career Development (change in name but not course content) and moved to junior year.

Reflection on market trends drove our biggest curricular change, the addition of a new concentration in Strength and Conditioning. Our research revealed a growing need for professionals in the strength and conditioning field in both athletics and within the general population at commercial facilities. Further, there has been growing interest in the field among our majors, with many students choosing to complete internships in strength and conditioning and a number of alumni going on to careers as strength and conditioning coaches. Our research also revealed the dearth of undergraduate programs offered at public institutions in New England. With our newly approved (spring 2018) concentration in Strength and Conditioning, we are the first public institution in the state of Massachusetts to offer an undergraduate program in Strength and Conditioning.

## **ii. Description of the curriculum and curriculum requirements**

As described in the program overview, the EXSS major is both multi- and inter-disciplinary. All concentrations share a common core of courses with additional concentration specific requirements aimed at preparing students to apply to graduate school or pursue a career in that particular field. The core requirements and concentration-specific course requirements are described below.

### **Liberal Arts and Sciences Requirements for all EXSS majors:** *(15 credit hours)*

Anatomy and Physiology I (BIOL 1200) – 4 credits

Anatomy and Physiology II (BIOL 1300) – 4 credits

Introduction to Psychological Science (PSY 1100) – 3 credits

### **Common EXSS Core:** *(46 credit hours)*

Introduction to Exercise Science (EXSS #1011) - 3 credits

Functional Anatomy (EXSS #2050) – 3 credits

Intro to Research in Exercise Science (EXSS # 2065) – 3 credits

Exercise Physiology I (EXSS # 2071) – 4 credits

Exercise Physiology II (EXSS # 2072) – 4 credits

Human Motor Development (EXSS #2500) – 3 credits

Exercise Testing and Prescription (EXSS #3450) – 4 credits

Sports Nutrition (EXSS #2300)- 3 credits **OR** Applied Nutrition (EXSS #3000)- 3 credits

Scientific Foundations of Strength Training and Conditioning (EXSS #3120) – 3 credits

Biomechanics & Motor Control of Human Movement (EXSS #4005) – 4credits

Fitness Management (EXSS #4040) – 3 credits

Professional & Career Development (EXSS #4200) – 3 credits

Internship/Apprenticeship – 6 credits

**Attendance at a Professional Conference**

**CPR certification**

**Track Requirements:**

**Clinical Exercise Physiology**

General Biology I (BIOL #1800)- 4 credits

Chemistry for Health Sciences (CHEM 1200) – 4 credits OR General Chemistry I (CHEM 1300) – 4 credits

Cardiovascular Physiology and Electrophysiology (EXSS #4045)- 3 credits

Exercise Response and Adaptations in Special Populations (EXSS #3600)-3 credits

**Fitness Management**

Chemistry for Health Sciences (CHEM 1200) – 4 credits OR General Chemistry I (CHEM 1300) – 4 credits

Intro to CIS for Business (BSAD #1700) – 3 credits

Microeconomics (counts in LA&S) (ECON #1200) – 3 credits

Health Promotion (EXSS #2400) – 3 credits

Principles of Management (BSAD #3200) – 3 credits

Fundamentals of Marketing (BSAD #3300) – 3 credits

Intro to Managerial Accounting (BSAD #2020)- 3 credits

Business Law I (BSAD #3500) – 3 credits

**Strength and Conditioning**

Applied Statistics (MATH # 1700)-3 credits

Introduction to Sports Medicine (EXSS #2023) -3 credits

Weight Training for Athletes (EXSS #1450) -1 credit

Assessment for Strength Training and Conditioning (EXSS #3002)-1 credit

Fundamentals of Coaching (EXSS #4000) – 3 credits

Practicum in Strength Training and Conditioning 1A (EXSS #3011) – 1 credit

Practicum in Strength Training and Conditioning 1B (EXSS #3012) – 1 credit

Practicum in Strength Training and Conditioning 2A (EXSS #4002) – 2 credits

Practicum in Strength Training and Conditioning 2B (EXSS #4003) – 2 credits

# 2018-2019

## CLINICAL EXERCISE PHYSIOLOGY TRACK (B.S. Degree)

### FRESHMAN YEAR

#### *Fall Semester*      *17 Credits*

EXSS 1011	Introduction to Exercise Science	(3)
BIOL 1200	Anatomy & Physiology I	(4)
BIOL 1800	General Biology I (SMT) (LAB)	(4)
ENGL 1100	Writing I (ART)	(3)
PSY 1100	Intro to Psychological Science (CTW)	(3)

#### *Spring Semester*      *16 Credits*

EXSS 2500	Human Motor Development	(3)
BIOL 1300	Anatomy & Physiology II	(4)
ENGL 1200	Writing II (ART)	(3)
MATH XXXX	College-Level Math (SMT)	(3)
XXXX	LA&S Elective	(3)

### SOPHOMORE YEAR

#### *Fall Semester*      *17 Credits*

EXSS 2050	Functional Anatomy	(3)
EXSS 2065	Intro to Research in Exercise Science	(3)
EXSS 2071	Exercise Physiology I	(4)
CHEM 1200 <i>OR</i>	Chemistry for Health Sciences (SMT) <i>OR</i>	(4)
CHEM 1300	Gen Chemistry I (SMT)	
XXXX	LA&S Elective	(3)

#### *Spring Semester*      *16 Credits*

EXSS 2072	Exercise Physiology II	(4)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)
XXXX	Free Elective	(3)

### JUNIOR YEAR

#### *Fall Semester*      *15 Credits*

EXSS 2300 <i>OR</i>	Nutrition for Exercise & Sport	<i>OR</i>	(3)
EXSS 3000	Applied Nutrition		(3)
EXSS 3120	Scientific Foundations of Strength Training & Conditioning		(3)
EXSS 4200	Professional & Career Development		(3)
XXXX	LA&S OPTION Course		(3)
XXXX	Free Elective		(3)

#### *Spring Semester*      *13 Credits*

EXSS 3450	Exercise, Testing and Prescription	(4)
EXSS 4045	Cardiovascular and Electrophysiology	(3)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

### SENIOR YEAR

#### *Fall Semester*      *14 Credits*

EXSS 3600	Exercise Response & Adaptation in Special Populations	(3)
EXSS 4005	Biomechanics & Motor Control of Human Movement	(4)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)
XXXX	Free Elective	(1)

#### *Spring Semester*      *12 Credits*

EXSS 4040	Fitness Management	(3)
EXSS 4950	Internship	(6)
XXXX	LA&S OPTION Course	(3)

**Total Credits: 120**

# 2018-2019

## FITNESS MANAGEMENT TRACK (B.S. Degree)

### FRESHMAN YEAR

#### *Fall Semester*      **16 Credits**

EXSS 1011	Introduction to Exercise Science	(3)
BIOL 1200	Anatomy & Physiology I	(4)
MATH 1250	Intro to Functions (SMT)	(3)
ENGL 1100	Writing I (ART)	(3)
PSY 1100	Intro to Psychological Science (CTW)	(3)

#### *Spring Semester*      **16 -17 Credits**

EXSS 2500	Human Motor Development	(3)
BIOL 1300	Anatomy & Physiology II (OPTION III)	(4)
ENGL 1200	Writing II (ART)	(3)
BSAD 1700	Intro to Computer Info Sys for Business	(3)
XXXX	LA&S Elective	(3-4)

### SOPHOMORE YEAR

#### *Fall Semester*      **17 Credits**

EXSS 2050	Functional Anatomy	(3)
EXSS 2065	Intro to Research in Exercise Science	(3)
EXSS 2071	Exercise Physiology I	(4)
CHEM 1200	Chemistry for Health Sciences (SMT LAB)	(4)
BSAD 3200	Principles of Management	(3)

#### *Spring Semester*      **16 Credits**

EXSS 2072	Exercise Physiology II	(4)
BSAD 3300	Fundamentals of Marketing	(3)
ECON 1200	Principles of Economics: Microeconomics	(3)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)

### JUNIOR YEAR

#### *Fall Semester*      **15 Credits**

EXSS 2300 <b>OR</b>	Nutrition for Exercise & Sport	<b>OR</b>	(3)
EXSS 3000	Applied Nutrition		(3)
EXSS 3120	Scientific Foundations of Strength Training & Conditioning		(3)
EXSS 4200	Professional & Career Development		(3)
BSAD 2010	Introduction to Financial Reporting		(3)
XXXX	LA&S Elective		(3)

#### *Spring Semester*      **13 Credits**

EXSS 3450	Exercise, Testing and Prescription	(4)
BSAD 2020	Introduction to Managerial Accounting	(3)
XXXX	LA&S OPTION Course	(3)
XXXX	LA&S OPTION Course	(3)

### SENIOR YEAR

#### *Fall Semester*      **15 Credits**

EXSS 2400	Health Promotion	(3)
EXSS 4005	Biomechanics and Motor Control of Human Movement	(4)
BSAD 3500	Business Law I	(3)
XXXX	LA&S Elective	(3)
XXXX	Free Elective	(2)

#### *Spring Semester*      **12 Credits**

EXSS 4040	Fitness Management	(3)
EXSS 4950	Internship	(6)
XXXX	LA&S OPTION Course	(3)

**Total Credits: 120-121 depending on LA&S electives**

# 2018-2019

## STRENGTH & CONDITIONING TRACK (B.S. Degree)

### FRESHMAN YEAR

#### *Fall Semester*      **16 Credits**

EXSS 1011	Introduction to Exercise Science	(3)
BIOL 1200	Anatomy & Physiology I	(4)
ENGL 1100	Writing I (ART)	(3)
MATH 1700	Applied Statistics (SMT)	(3)
PSY 1100	Intro to Psychological Science (CTW)	(3)

#### *Spring Semester*      **16 Credits**

EXSS 2500	Human Motor Development	(3)
BIOL 1300	Anatomy & Physiology II	(4)
ENGL 1200	Writing II (ART)	(3)
XXXX	LA&S Elective	(3)
XXXX	Free Elective	(3)

### SOPHOMORE YEAR

#### *Fall Semester*      **16 Credits**

EXSS 2050	Functional Anatomy	(3)
EXSS 2065	Intro to Research in Exercise Science	(3)
EXSS 2071	Exercise Physiology I	(4)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)

#### *Spring Semester*      **17 Credits**

EXSS 2072	Exercise Physiology II	(4)
EXSS 3120	Scientific Foundations of Strength Train & Conditioning	(3)
EXSS 2023	Introduction to Sports Medicine	(3)
EXSS 3011	Practicum in Strength Train & Cond/ 1-A	(1)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)

### JUNIOR YEAR

#### *Fall Semester*      **14 Credits**

EXSS 1450	Weight Training for Athletes	(1)
EXSS 2300	Nutrition for Exercise and Sport	(3)
EXSS 4200	Professional & Career Development	(3)
EXSS 3012	Practicum in Strength Train & Cond/ 1-B	(1)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

#### *Spring Semester*      **14 Credits**

EXSS 1460	First Aid/CPR / AED	(1)
EXSS 3450	Exercise, Testing and Prescription	(4)
EXSS 3001	Assessment for Strength Train & Cond	(1)
EXSS 4000	Fundamentals of Coaching	(3)
EXSS 4002	Practicum in Strength Train & Cond / 2-A	(2)
XXXX	LA&S OPTION Course	(3)

### SENIOR YEAR

#### *Fall Semester*      **15 Credits**

EXSS 4003	Practicum in Strength Train & Cond / 2-B	(2)
EXSS 4005	Biomechanics & Motor Control of Human Movement	(4)
EXSS 4040	Fitness Management	(3)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

#### *Spring Semester*      **12 Credits**

EXSS 4950	Internship	(6)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

**Total Credits: 120**

Please see appendices 6 and 7 for the EXSS 2 year rotation and EXSS 2018-2019 handbook, respectively.

### **iii. Curriculum trends in the discipline**

There is a growing need for professionals in the strength and conditioning field in both athletics and within the general population at commercial facilities. The Bureau of Labor Statistics projects 15% growth in the field of S&C from 2012-2022 versus 11% growth for all other professions. (BLS.gov). The International Health & Racquet Sports Association (IHRSA) has published that there are 34,460 Health Clubs in the United States with total industry revenue of 24.2 billion dollars. A google search of using the term “Strength and Conditioning” reveals over 20 fitness facilities in Massachusetts that include “Strength and Conditioning” in the name. Additionally, there are over 40 CrossFit strength facilities in Massachusetts that would seek to hire students with a strength and conditioning background. These commercial facilities provide opportunities for strength and conditioning professionals to find gainful commercial employment. (IHRSA 2016). The development of the Strength and Conditioning concentration within the EXSS major was in response to the increased market demand for professionals in this field.

### **iv. Course delivery methods**

In EXSS, we use a combination of lecture and lab classes. The majority of classes meet twice a week for 75 minutes and incorporate standard lecture and in-class activities. Exercise Physiology, Exercise Testing and Prescription, and Biomechanics and Motor Control of Human Movement each require a lab which meets once a week for 2 hours. These labs allow students to engage in hands-on activities where they are using equipment in our lab spaces and learning exercise testing techniques that they will use in the field. Many of our other courses, though not lab courses, use the lab spaces and University fitness center periodically for class activities. In addition, the athlete’s weight room at the Landry Arena is regularly used for practicing advanced weight lifting techniques in the Strength and Conditioning class.

All courses in the EXSS department are offered in a traditional face-to-face format. In addition, we offer sections of Health and Fitness and Exercise, Nutrition, and Heart Disease online.

### **v. Learning experiences**

All students in the EXSS major must complete a 240-hour internship to graduate. This internship provides students the opportunity to expand their knowledge in an area related to exercise science, apply what they have learned in the EXSS curriculum in a professional setting, and gain experience in a professional field of their choosing. While the department has relationships with a variety of hospitals, clinics, fitness centers, and other professional facilities where students may choose to complete their internships, they are not limited to these locations. Students may seek out other professional settings to complete their internships, provided the experience is related to exercise science and provides the type of learning experience outlined in the internship guidelines. Additional details on our internship program can be found in the internship handbook provided in this report.

Students in the newly approved Strength and Conditioning concentration will complete 4 semesters of practicum in which they will learn the proper assessments and sport-specific workouts to be used with our various athletic teams. They will work with our student athletes in the Landry Arena weight room under the supervision of faculty member and head strength coach Jeff Godin to learn how

to assess and train college athletes. This hands on experience prepares students for internships the field and to sit for the National Strength and Conditioning Association's Certified Strength and Conditioning Specialist exam. It will also make them more competitive applicants for employment in the field of strength and conditioning.

Students also have the opportunity to work with faculty on research. Some have chosen to continue research on class projects that has resulted in the production of a poster presented at the Undergraduate Conference on Research and Creative Practice. Others have worked with faculty on their research. These experiences are described in detail later in this report, in the section on "Program Outcomes for Undergraduate Students".

#### **vii. Concentrations**

Each of the concentrations in Exercise and Sports Science fits directly into the mission of the department by providing students with courses, internships, and hands-on application that will prepare them for entry into the workforce or graduate programs. More specifically, students in the Clinical Exercise Physiology concentration are instructed to take certain liberal arts and sciences electives that, when combined with their required EXSS courses, will complete prerequisites for physical therapy, occupational therapy, or physician assistant graduate programs. Students in the Fitness Management concentration take a series of business courses and often complete a business minor, providing necessary background for success as managers in the fitness industry. Finally, the Strength and Conditioning curriculum requires students to complete 6 credits of hands-on practicum, where students are working under the advisement of a strength coach to learn how to use performance data in the development of sport-specific training programs as well as how to implement such programs with sports teams. This concentration also includes courses on coaching, assessments for strength and conditioning and weight training for athletes, which provide the background knowledge students need to excel in the practicum.

Through offerings of Health and Fitness; Exercise, Nutrition, and Heart Disease, and a variety of activity courses, the EXSS department teaches courses that provide the foundation for personal wellness.

During the review period, the reputation of the EXSS program has grown, largely through the impact of our interns and graduates. Internship site supervisor have been impressed with our students' level of preparedness and professionalism and often seek to recruit more interns from our program. Additionally, our reach continues to extend as graduates of our program find employment in clinical, fitness, and athletic settings. In this way, we are beginning to actualize our goal of being a destination campus for a degree in exercise science and preparing successful graduates.

#### **viii. Department programs/policies that affect curriculum**

The process for curriculum development was described at the beginning of this section. Any decided upon curricular changes are discussed by faculty and developed into an AUC proposal, which is reviewed and approved by our departmental curriculum committee before moving on to the AUC. We do not have additional department policies that affect the curriculum.

#### **ix. Effectiveness of the curriculum**

In Fall 2018, we launched an alumni survey, reaching out to former students who graduated five years prior. Though the response rate was small (24%), we received very positive feedback about the EXSS program. A common thread among responses was the perceived value of the internship (92%)

and other hands-on experiences (58%) as well as the small class size (58%). Students are often offered employment from their internship sites. One graduate commented, “This degree and the field of EXSS has allowed me to travel all over the country, meet some amazing people, and [it] allows me the opportunity to wake up every morning and make an impact on the lives of the student athletes I get to coach.” Out of 12 respondents, 7 are employed in the field, 4 are attending or have attended graduate school, and 6 obtained professional certifications.

**x. Achievement of objectives from perspective of students, alumni, faculty, and employees**

Faculty assessment of program learning outcomes is discussed in the section on assessment.

**b. Students**

**i. Learning expectations and learning support**

Students are supported by EXSS faculty both in and out of the classroom, through offering of office hours and availability to meet with students at various times. Our faculty are good at connecting students to resources, such as academic coaching, the tutor center, and Expanding Horizons.

**ii. Retention initiatives**

Outreach includes meeting invitations from the department chair to all new transfer students and regular email campaigns encouraging non-registered students to meet with advisors and sign up for classes. Faculty also engage in intensive advising to closely monitor student’s course schedules and grades. Students on academic probation within the major work closely with their academic advisors in the major to work out a plan for success.

**c. Faculty**

**i. Teaching responsibilities**

Faculty in the EXSS department teach 12 credits per semester with the exception of when release time is provided (e.g., for department chair release, payback of accrued credits, or APR). Recent APRs have been approved for the head strength coach (6 credit APR per year) and the coordinator of the STEM Living Learning Community (3 credit APR per year). Faculty assignments are based primarily on faculty expertise and interest. When possible, teaching assignments for a given semester are designed to not include more than 3 separate courses. Many faculty also select to teach in the department of GCE.

**ii. Advising responsibilities**

Faculty also advise ~30 EXSS majors each. This includes meeting with students during the academic advising period to discuss progression in the major and select courses for the following semester. Advisors also meet frequently with students regarding a variety of other issues.

**iii. Number and type of assignments**

Each faculty member in the EXSS department is assigned 12 credits per semester, with adjustments made for alternative professional assignments and payback of accumulated overload. The majority of courses are 3-credit lecture-based courses. The department also teaches 3 4-credit lab courses. Faculty within the department teach courses in the EXSS major as well as courses that fulfill the University’s Health and Fitness Requirement. The majority of health and fitness courses are taught by part-time faculty. It should be noted that many faculty have accumulated teaching credits for teaching over 24 credits per year (lab sections, honors thesis, independent study, and dependent study).



As a result, a number of course releases are granted each semester as payback for time accrued. Family leave, sabbatical, and replacement of one faculty member who left the university have also strained our faculty resources. The following table shows the total number of credits taught by adjuncts as well as the number of those credits used to replace FT faculty (including payback of accumulated teaching credits as well as for APRs, sabbaticals, and family leave). The remainder of adjunct-taught credits reflects the teaching needs of the department beyond that which can be met by FT faculty.

Academic year	# credits taught by adjuncts (total)	# credits taught by adjuncts replacing FT faculty
AY14	87	Data not available
AY15	74	56
AY16	66	27
AY17	64	56
AY18	70	42
AY19	76	54

All faculty serve on a variety of departmental and university-wide committees, such as:

- Departmental assessment committee
- Departmental student affairs committee
- Departmental curriculum committee
- Departmental equipment committee
- Departmental search committee
- Technology advisory committee
- Undergraduate research conference committee
- Liberal arts and sciences council
- AUC curriculum committee
- Human subjects committee
- Biosafety Committee
- First year experience committee
- Honors advisory committee
- International advisory committee
- Community read committee
- University assessment and research committee
- Library advisory committee
- Parking committee

Furthermore, EXSS faculty have served on various working groups across campus and as club advisors, an advisor for the STEM Living Learning Community, and the head Strength and Conditioning Coach for Athletics. While a 6 credit APR is given to the head Strength and Conditioning Coach annually, the job responsibilities of this position are extensive: designing and implementing year-round, sport specific training programs for all sports teams at the university; running team workouts; conducting performance assessments of athletes and analyzing related data; tracking athlete

performance and injuries; supervising student interns; updating facility policies and procedures; evaluating resource needs.

Many faculty are also active in research, much of which involves students. This work is described in the section on Scholarly and Creative Productions.

#### **iv. Professional development initiatives**

While there is no formal professional development strategy, faculty are encouraged to engage in professional development opportunities on campus as well as participate in professional conferences. Faculty are provided funding annually to travel to professional conferences.

#### **v. Faculty retention initiatives**

EXSS has retained high-quality faculty through creating a warm, supportive environment where a strong sense of collaboration in teaching, advising, and scholarship exists. EXSS faculty are team players, sharing the work needed to be done to move the department forward. Senior faculty also have a history of unofficially mentoring junior faculty. Furthermore, efforts are made to accommodate scheduling requests, which includes creative solutions for family leave. Those who have left our department have done so for personal/family reasons, not for dissatisfaction with the University or EXSS department.

#### **d. Quality improvement Initiatives**

During the review period, we have obtained additional lab equipment for use in teaching and research, including a metabolic measurement system, treadmill, EKG system, venous occlusion plethysmography unit, physical activity monitors, blood glucose and cholesterol measurement units, blood lactate measurement units, several anatomical models, and athlete monitoring equipment and software. Some of these purchases were made through strategic budget (formerly extraordinary budget) requests.

Recent efforts to improve the quality of the EXSS program include:

- Development of a strength and conditioning concentration
- Development of a lab safety manual (in progress)
- Development of a minimum grade requirement in Introduction to EXSS and Anatomy and Physiology I
- Revision of EXSS departmental assessment plan
- Hiring of faculty member with a background in athletic training and injury prevention

### **3. Program Outcomes**

#### **a. Program**

##### **i. Graduates rating of the program**

The following is a summary of data from the Graduating Student Feedback Survey for students in the EXSS major from 2014-2017. During this time, 57 students responded to the survey. The data support a high degree of satisfaction with the instruction and educational opportunities within the EXSS department.

Question from Graduating Student Survey	Student Response
Overall quality of instruction	45%=excellent, 41%=very good, 14%=good (0% fair or poor)
Size of classes	63%=excellent, 25%=very good, 13%=good (0% fair or poor)
Overall quality of texts and other instructional materials	34%=excellent, 45%=very good, 14%=good, 7%=fair (0% poor)
Availability of faculty outside of class time	55%=excellent, 25%=very good, 18%=good, 2%=fair (0% poor)
Timeliness and relevance of course content	47%=excellent, 40%=very good, 13%=good (0% fair or poor)
Quality of extra-curricular experiences related to my major (e.g., practicum, internship, etc.)	39%=excellent, 45%=very good, 12%=good, 4%=fair (0% poor)
Match between career goals and course-of-study requirements.	38%=excellent, 41%=very good, 18%=good, 4%=fair (0% poor)
Overall level of challenge	39%=excellent, 48%=very good, 13%=good (0% fair or poor)

**ii. Career placement and continuing education opportunities- number and types of career and advanced education**

Students who graduate with a degree in Exercise and Sports Science have the ability to enter the workforce immediately or pursue a graduate degree. The following lists include employment possibilities, although some may require a graduate degree:

<b>Careers in Clinical Exercise Physiology</b>	<b>Careers in Fitness Management</b>	<b>Careers in Strength and Conditioning</b>
Cardiac rehabilitation	Commercial health/fitness clubs	Strength coach for professional sports teams, Division I, II, and III collegiate athletics, and commercial strength and conditioning settings
Cardiopulmonary exercise testing	Corporate/employee wellness programs	Sport scientist
Chiropractic*	Fitness equipment design	Research in strength and conditioning or sports science
Exercise technician	Fitness equipment installation	
Exercise physiologist	Fitness equipment marketing/sales	
Hospital-based wellness programs	Management consultant	
Occupational therapy*	Municipal fitness/recreation programs	
Pulmonary rehabilitation*	Personal trainer	
Physical therapy*	Small business Owner	
Prosthesis design		
Physician assistant*		
Research in health and exercise*		
Resident care facilities		
Shoe design		

\*Requires graduate level studies

### **iii. Alumni Feedback Survey**

No EXSS alumni responded to the email survey launched in the spring of 2018. However, an EXSS departmental alumni survey was launched Fall 2018 to students who graduated from the program 5 years prior. 63 surveys were sent out. 14 e-mails bounced back as they were not current, so 49 surveys were delivered. 12 alumni responded (24.5% response rate). Of the 12 alumni, 7 reported that they work in the EXSS field. The 7 who reported working in the field reported the following work settings: hockey coach, health club/gym setting, performance setting, and entrepreneur. Of the 5 students who reported that they did not work in the EXSS field, 2 were in nursing school (one to become a nurse practitioner), and one is in school to get their MBA with a concentration in Healthcare. One of the 5 students who reported that they did not work in the EXSS field is currently working in a laboratory setting, and only 1 student reported working in a completely unrelated field. Five of the 12 students hold a NSCA CSCS Certification, and 1 received a Master FitCoach Certification through their work.

## **b. Student**

### **i. Learning Outcomes**

The Exercise and Sports Science faculty have spent considerable time setting up a detailed plan for assessing student learning. Over the past two years, the faculty of the Exercise and Sports Science Assessment Committee, in accordance with the University-wide Assessment and Research Committee, have revised this plan to hone in on five student learning outcomes (SLOs).

### **ii. Assessment overview of the program**

Prior to AY 2018-2019, EXSS had the following student learning outcomes:

1. Demonstrate effective verbal communication
  - a. In a general formal presentation
  - b. In a formal scientific presentation
  - c. In an informal setting
2. Demonstrate effective writing
3. Demonstrate competence in health-related fitness testing
4. Demonstrate competence in performance-related fitness testing
5. Demonstrate competence in exercise programming for healthy populations
6. Demonstrate competence in exercise programming for higher level athletic performance
7. Demonstrate ability to adapt strength and cardiovascular conditioning protocols for special populations
8. Demonstrate ability to collect and interpret physiological data
9. Demonstrate ability to describe and demonstrate safe and effective strength and conditioning methods.
10. Demonstrate ethical reasoning
11. Demonstrate knowledge in a variety of content areas
12. Demonstrate ability to apply knowledge in work-related settings
13. Demonstrate ability to critically evaluate emerging information in the field
14. Gain admission to graduate programs, when desired
15. Pass national certification exams

A group of EXSS faculty participated in an assessment workshop in the spring of 2018 and made significant revisions to the assessment plan. The following is a list of revised student learning outcomes.

- 1.1a: Students will demonstrate effective verbal communication in a formal setting.
- 1.1b: Students will demonstrate effective verbal communication in an informal setting.
- 1.2: Students will demonstrate effective written communication.
- 2.1: Students will implement health-related fitness testing.
- 2.2: Students will implement performance-related fitness testing.
- 3.1: Students will design exercise programs for the general population.
- 3.2: Students will develop exercise programs for the athletic population.
- 4: Students will demonstrate information literacy.
- 5: Students will demonstrate quantitative reasoning.

The EXSS Departmental Assessment Committee, with feedback from faculty in the EXSS Department who taught classes in the core curriculum, mapped each of the student learning outcomes to the level that it was addressed in the course, and whether or not an assignment in the course could be used to assess the student learning outcome, using the following scale:

<i>0</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>A</i>
<i>Not Addressed</i>	<i>Introducing</i>	<i>Broadening</i>	<i>Fulfilling</i>	<i>Assessed for Program</i>

	EXS S 1.1a	EXS S 1.1b	EXSS 1.2	EXSS 2.1	EXSS 2.2	EXSS 3.1	EXSS 3.2	EXS S 4	EXSS 5
EXSS 1011	1	1	1	1	0	0	0	1	1
EXSS 2050	1	1	1	1	1	1	1	1	0
EXSS 2065	0	0	0	0	0	0	0	1	1
EXSS 2071	1A	1	1A/2A	2	1A	0	0	1A	1A

EXSS 2072	2A	1	2A	2	1	0	0	1	2A
EXSS 2300/3000	1	1	3	0	0	0	0	3A	0
EXSS 2500	0	1	1	0	0	0	0	1	1
EXSS 3120	0	1	1	0	3A	0	3A	1	0
EXSS 3450	3A	2A	3	3A	0	3A	0	0	3A
EXSS 4005	2	0	2	0	0	0	1	1	1
EXSS 4040	3	3	0	0	0	0	0	3	0
EXSS 4200	3A	1	3	0	0	0	0	3	0
EXSS INTERNSHIP/ APPRENTICESHIP	3A	0	3A	Depends on Int.	Depends on Int.	Depends on Int.	Depends on Int.	0	Depends on Int.

The following tables describes the measurements (assignments) and targets for each student learning outcome. The first table shows direct assessments; the second indirect assessments (e.g., student surveys, focus groups, meetings with advisory boards, employer feedback, internship feedback, alumni surveys, etc.).

### Direct Assessment

<b>PLO #</b>	<b>Assessment description (written project, oral presentation with rubric, etc.)</b>	<b>Timing of Assessment (annual, semester, bi-annual, etc.)</b>	<b>When assessment is to be administered in student program (internship, 4<sup>th</sup> year, 1<sup>st</sup> year, etc.)</b>	<b>To which students will assessments administered (all, only a sample, etc.)</b>	<b>What is the target set for the PLO? (criteria for success)</b>
EXSS 1.1a	a. Article Review Presentation	Every five years	a.2 <sup>nd</sup> year: Ex. Physiology	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students
EXSS 1.1b	Group Discussion on Ethics	Every five years		Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students
EXSS 1.2a	a.Lab Reports/Literature Review	Every five years	a.2 <sup>nd</sup> year: Ex. Physiology	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students
EXSS 1.2b	Weekly Journal Entries	Every five years	4 <sup>th</sup> year: Internship	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students



EXSS 2.1	Practical Exams	Every five years	3 <sup>rd</sup> year: Ex. Test & Pres	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students
EXSS 2.2	Practical Exams	Every five years	3 <sup>rd</sup> year: Str & Condition	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students
EXSS 3.1	Exercise Prescription Case Study	Every five years	3 <sup>rd</sup> year: Ex. Test & Pres	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students
EXSS 3.2	Periodization Project	Every five years	3 <sup>rd</sup> year: Strength & Conditioning	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students
EXSS 4	a.Functional Anatomy b.Applied Nutrition	Every five years	a.2 <sup>nd</sup> year: Term Paper b.C.A.T.	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students
EXSS 5	Lab Reports	Every five years	2 <sup>nd</sup> year: Ex. Physiology	Random Sample (20%) of ALL possible sections	≥ 2 on rubric (meets standard) for all students

## Indirect Assessment

PLO #	Assessment description (survey, focus group, interviews, etc.)	When assessment is to be administered	Who will give indirect feedback	Criteria for Success or Goal to be Achieved
EXSS 1.1a				
EXSS 1.1b	Internship Feedback	4 <sup>th</sup> year: Internship class	Site supervisor	
EXSS 1.2				
EXSS 2.1				
EXSS 2.2				
EXSS 3.1				
EXSS 3.2				
EXSS 4				
EXSS 5				

### iii. Summary of findings by year (longitudinal data over the most recent five year span

Please see attached Assessment Reports for AY 2013-2014, AY 2014-2015, AY 2016-2017, and AY 2017-2018.

### iv. Ongoing changes made to the program in response to the assessments (based on data collected and analyzed over the most recent five-year span)

The biggest changes made to the program in response to the assessments based on data collected and analyzed over the most recent five-year span was the addition of a Research Methods Course and the implementation of a minimum grade requirement in Anatomy and Physiology I and Introduction to Exercise Science.

## **v . Scholarly and creative productions**

In 2014, Dr. Wigmore supervised two students on a research experience as an independent study. The project was an expansion of a research study the two students had conducted as part of their Exercise Physiology II class and focused on the effects of caffeine consumption on post-exercise metabolism. The students presented their work at Fitchburg State's Undergraduate Conference on Research and Creative Practice as well as the UMASS Statewide Research Symposium.

Dr. Maldari has supported the work of student research by acting as the faculty sponsor for a number of poster presentations at both the Fitchburg State University Undergraduate Research Conference and the Massachusetts Association of Cardiovascular and Pulmonary Rehabilitation (MACVPR) Conference. The following posters were presented by students with Dr. Maldari as their faculty sponsor: American Women and Cardiovascular Disease (FSU Undergraduate Research Conference), Alcoholic Cardiomyopathy: What Happens When you Drink too Much (FSU Undergraduate Research Conference, MACVPR Conference), Chemotherapeutic Agent's Effect on the Heart (FSU Undergraduate Research Conference, MACVPR Conference), and Benefits of High Intensity Interval Training on Heart Disease Patients (FSU Undergraduate Research Conference, MACVPR Conference; 3<sup>rd</sup> place finish at MACVPR Conference)

In 2016, Dr. Hilliard had an apprenticeship experience in which five students collected data for a body composition research project. The students used the Tanita B.I.A scale for several trials of body fat percentage.

In the spring of 2017 through the fall of 2018, Dr. Heikkinen worked on a research project with a student investigating the physiological characteristics of elite junior triathletes. The data collected included body composition, lactate threshold, oxygen consumption, and respiratory exchange ratio. The student involved presented the preliminary findings of this FSU Undergraduate Research Day in the spring of 2018. The data collection is now complete, and the data analysis is being performed so that the research may be used for further scholarship.

In the summers of 2017 and 2018, Dr. Wigmore worked with a group of students and faculty from Nursing and EXSS as part of the FSU Summer Research Collaborative. The work involved assessing physical activity habits and health outcomes in the Fitchburg community. Students were trained to administer physical activity questionnaires and collect health related information (height, weight, body fat percentage, blood pressure, blood glucose, and cholesterol) at health screenings throughout the community. Students also entered data and were integrally involved in the analysis and presentation of data. The group from 2017 presented their work at the NEACSM conference in Providence, RI last October and at last year's Undergraduate Conference on Research and Creative Practice.

In 2017-2018, Drs. Alsup and Parisi worked on a research project with 3 student research assistants to compare a traditional method of blood lactate analysis with a new wearable lactate threshold technology. The students were trained to collect all demographic information (age, height, weight), perform all of the incremental treadmill tests, take blood lactate measurements, and monitor heart rate and rate of perceived exertion throughout testing. One student was also responsible for assisting in data entry.

EXSS students were also invited to assist behind the scenes with EXSS faculty members who ran exercise tests and were interviewed for a documentary (currently in production) on Spartan

obstacle-course racer, Faye Stenning. Students assisted in the process by making Faye feel welcomed at FSU, and helping with set up and clean-up of the lab and strength and conditioning facilities.

**vi. Internship and service learning scores/evaluations**

The majority of students who complete their internship are very successful. Approximately 9 out of 10 students who complete their internship receive a final evaluation grade from their internship supervisor of 95-100, and if they do not receive a grade of 95-100, the majority of those students receive a grade of 92-95. Regarding grades from faculty, the majority of students are very successful in the internship course. Firstly, students must have a minimum grade of 2.5 in the major and overall, they must be CPR certified, they must have attended a professional conference, and at a minimum, have completed Exercise Testing and Prescription. Students completing an internship in a clinical setting must also have completed Cardiovascular and Electrophysiology, and Exercise Response and Adaptations in Special Populations. For that reason, students entering their internship are in their senior year, meaning that they have successfully navigated the EXSS major. Secondly, 50% of their grade in the course comes from the completion of the 240 hours and the site supervisor evaluations, which means that only 50% of the grade in the course comes from assignments graded by EXSS faculty. Students who receive a grade < 4.0 in internship typically have missed an assignment(s) altogether.

**vii. Professional and community engagement**

As a part of the EXSS requirements, students must attend one professional conference prior to going out on their internship. Students may attend a professional conference of their choice, but are required to submit a reflective paper to their academic advisor after the experience. A majority of students choose to attend either NEACSM or one of the NSCA regional events. The EXSS Department has also sent a team of students to the NEACSM conference to participate in the NEACSM College Bowl, where they compete against other teams of students from New England in a hope to win the college bowl and represent the NEACSM at the ACSM National Conference in the ACSM College Bowl.

**viii. National certification and examination pass rate**

A number of EXSS students take national certification exams after they have graduated, making the data hard to track. A number of these certifications are through the ACSM and NSCA. Of the 12 students who responded to our alumni survey in the fall of 2018, half of them had earned professional certifications.

**ix. Career placement and continuing education opportunities**

Please see section 3a iii. for a summary of results.

**x. Employer rating of graduates**

Please see section 3b vi for a summary of internship supervisor ratings.

**xi. Trend Data Reflection/Analysis**

Using Trend data, the Exercise and Sports Science assessment committee identified a number of variables to review, in addition to the time to degree completion and graduation rates.

In AY 2016-2017, we chose to look at the Retention Rate in Major (Freshman) and the Retention Rate Changed Major. In AY 2017-2018, we updated on the implemented intervention. Please see details in the table below.

<b>Department Performance Measure (data point from Trend Data)</b>	<b>Implemented Intervention</b>	<b>Update on Implemented Intervention (i.e. change in target, satisfied with outcome, not satisfied, will continue or not)</b>
Retention Rate in Major (Freshman) + Retention Rate Changed Major	Members of the assessment committee discussed ways that we could identify students who were considered Moderate-High risk through SSC upon their arrival to FSU and discussed strategies for early intervention with those students. In AY18, we would like to implement these early intervention strategies.	Target Score: 77.76% Current Score (using an average of 3 years, AY15, AY16, AY17): 67.91% (increased from 64.45% for AY14, AY15, AY16 average)

In AY 2017-2018, we decided to continue reviewing the Retention Rate in Major (Freshman) + Retention Rate Changed major in the upcoming year (AY 2018-2019). Additionally, we chose to review the percentage of overall majors in the upcoming year (AY 2018-2019). Please see table below.

<b>Department Performance Measure (data point from Trend Data)</b>	<b>Rationale for selection</b>	<b>Planned or Implemented Intervention</b>	<b>Current score/ Target Score</b>	<b>This measure was selected because of last Program Review or Accreditation (yes/no)</b>

<p>Retention Rate in Major (Freshman) + Retention Rate Changed Major</p>	<p>The retention rate for freshmen in the major and the retention rate for freshmen who changed their major was chosen because a number of freshmen coming into the EXSS major do not realize how science-based the major actually is. For this reason, it is unrealistic to expect that we will retain the same number of freshmen in the major as the institutional average; however, with proper advising, it can be expected that we can meet the institutional average when the retention rate in the major is added to the retention rate for freshmen who changed their major.</p>	<p>We would like to ID students in SSC who are entering the major and are considered to be at Moderate-High Risk in the major, and use this information to implement more intensive advising and/or supplemental instruction and/or study groups for those students. We would also like to ID students who may need more extensive advising upon arrival to the university. We discussed the ways in which we can be proactive with these students rather than waiting to see how they do.</p>	<p>We used an average of 3 years (AY15, AY16, AY17) of data from Phase I. Current Score: 67.91% Target Score: 77.76% (*Interestingly, in AY17 alone, this score was 76.47%)</p>	<p>No</p>
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<p>Percentage of Overall Declared Majors</p>	<p>The percentage of overall declared majors increased from AY13 to AY14, where it reached a peak, and has been decreasing each year since AY14.</p>	<p>We added a concentration in Strength and Conditioning which is a growing field in Exercise and Sports Science. Additionally, we would like to work with admissions to better market ourselves, particularly our Clinical Exercise Science (CES) concentration. We would like to make sure that potential students are aware that the CES concentration can prepare students for graduate school programs in the rehabilitation sciences (PT, AT, OT), in addition to nursing programs and the field of cardiac rehabilitation.</p>	<p>Current Score: AY17 5.84%</p> <p>Target Score: Peak Score from AY14 6.91%</p>	<p>No</p>
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In looking at years to graduate, considering full-time freshman entering the university, the average years to graduate in the EXSS major over years 2007-2011 was 4.37 years, compared to the institutional average for years 2007-2011, which was 4.38, a difference of 0.01%. The six-year-graduation rates for the EXSS freshmen classes entering from 2007 through 2011 have been steadily increasing from 2008 until 2011 for both graduation with EXSS (26.9% increasing to 43.1%) and overall (EXSS major + FSU graduate in another major: 46.2% increasing to 56.9%). The gains realized by 2011 in the overall six-year-graduation rate for EXSS incoming freshmen approximates the overall institutional six-year-graduation rate for the same freshmen cohort (59.7%). Please see Appendix 2 for data table on time to degree completion.

The largest number of graduating EXSS majors was seen in AY17 (N=70), accounting for 9.3% of all FSU graduates. It is unclear if this is related to a larger-than-typical transfer cohort in AY14 or other unidentified factor(s). Further, it is not clear if this is a trend or mere artifact as both number of EXSS graduates overall and relative to the overall graduating class fluctuate with no apparent pattern in this short, five-year window. An upward trend appears to be present in the number of students graduating in the Clinical Exercise Physiology concentration, increasing from 82% of EXSS graduates in AY13 to 89% of EXSS graduates in AY17.

Furthermore, when looking at graduation rates, it may be important to look at the graduation rate in the major, with the graduation rate in another major. The reason for this is because a number of students enter the EXSS major but do not understand how science-based the major actually is. For this reason, it is unrealistic to expect that we will retain the same number of freshmen in the major as the institutional average; however, with proper advising, it can be expected that we can meet the institutional average for graduation rates when graduation rate in the major is added to graduation rate in another major. The average overall graduation rate (graduation rate in major + graduation rate in other major) for years 2007-2011 was 53.01%, while the institutional average for graduation rates for years 2007-2011 was 54.73%. While we will continue to strive to match the institutional average for graduation rates, a difference of 1.72% is reasonable. Please see Appendix 2 for data on graduation rates.



## ANALYSIS AND ACTION PLAN FOR THE FUTURE

### 1. Strengths of the program:

- a. Well-rounded multidisciplinary curriculum that includes a strong emphasis on the three disciplines of exercise science (physiology, motor control and biomechanics and cumulates in a professional internship experience.
  - The major offers three degree tracks, Fitness Management, Clinical Exercise Physiology, and Strength & Conditioning
  - The Clinical Exercise Physiology and Fitness Management concentrations offer an opportunity to gain breadth and depth through specific classes that prepare our students to continue in graduate school and into their profession.
  - The new Strength & Conditioning track offers students a unique combination of evidence based coursework, and hands-on experience that will allow our students to pass National level certification exams, find employment in the field, or continue to graduate school.
  - All three concentrations prepare our students towards the current requirements for a number of certifications in the field including but not limited to those by the American College of Sports Medicine, National Strength and Conditioning Association, Collegiate Strength & Conditioning Coaches Association, and the International Society for Sports Nutrition.
  - All three concentrations also include opportunities to complete research projects, present data at local, regional, and national conferences, complete internships outside the university and apprenticeships within the university, and attend regional and national professional
- b. Adequate laboratory, technology and office space for diverse classroom experiences as well as student and faculty based undergraduate research.
  - The Department has two designated lab spaces for classes, student-projects and faculty led, student research (Recreation Building and 155 North Street).
  - The laboratory space includes modern equipment for measuring physiological responses at rest and during exercise.
  - The designated lab space in 155 North Street includes a computer lab for students.
  - The newly completed Landry Strength and Conditioning facility, and collaboration with the Athletics Department allows for additional hands-on education in exercise modalities, and proper exercise prescription.
  - Faculty are centrally located and in close physical proximity to the exercise science labs.
  - The department building is equipped with a conference room and a copy room.
- c. Well-rounded full-time faculty and staff that include academic, research related, professional and administrative expertise.
  - Full-time faculty includes six tenured faculty, three tenure-track faculty and a small number of adjunct instructors.

- The faculty pool has diverse professional experience in Fitness Management, Clinical Exercise Physiology, Cardiac Rehabilitation, Athletic Training & Sports Medicine, Strength and Conditioning, Sport Coaching, and Personal Training.
  - All faculty are well-versed in Health and Fitness, which is an all-university service requirement.
  - Faculty members have built, and continue to build, strong professional relationships with hospitals, clinics, and training facilities throughout Massachusetts.
  - The department has a strong support staff including one full-time secretary and two student work study positions.
  - The faculty are actively involved in research, and have provided students with opportunities to become involved and learn more about the process of conducting academic research.
- d. Small class sizes
- With an average class size of under 20 students, our students have the opportunity for significant interaction with our faculty.
  - In the laboratory sections of our courses, the students all participate, and are using the equipment rather than just watching.
- e. Internship Experience
- Our students complete a 240 hour internship before graduation. This experience allows them to gain valuable experience in the field of which they intend to work, or to pursue graduate studies.
  - The majority of students who complete their internship are very successful. Approximately 9 out of 10 students who complete their internship receive a final evaluation grade from their internship site supervisor of 95-100. This demonstrates that the internship sites who take on our students are satisfied with their performance.
- f. Changes to the Internship Program
- Prior to the Fall of 2015, all internships were supervised by the student's academic advisor. In this semester, one faculty member was assigned to be the Internship Supervisor in order to streamline the process, and to provide a more consistent internship experience.
  - The Internship manual was significantly updated to reflect the new Internship Supervisor model, and this faculty member took on the organization of Internship meetings, and collection of internship paperwork.
  - Having one faculty member supervising the internship experience has made it easier for students to know who to look toward for information, and has made it more concise what the deadlines are in order to apply for internship.
- g. As outlined earlier in the self-study, faculty are actively engaged in research and often include students in their research.

## **2. Opportunities to extending existing strengths**

### **a. Research**

- While faculty are currently involved in research, the cost and time required for research can sometimes become an obstacle. Exploring funding (via campus-wide or external mechanisms) as well as ways to conduct research in a more time efficient manner (e.g., collaboration, independent study credit, research course, release time via Special Projects mechanism) could enhance productivity in scholarly activities.

### **b. Programs**

- We will take the opportunity to reassess our existing programs for continued relevance to the field and alignment with student's interest. Many students pursue the Clinical Exercise Physiology concentration with a goal of applying to graduate school in physical or occupational therapy. We can consider options for adjusting this concentration to enhance recruitment and retention of students in the EXSS major. This may include changing the name of the concentration or adding academic standards for those planning to apply to graduate school in physical or occupational therapy.

### **c. Equipment**

- The EXSS faculty are able to provide excellent learning opportunities to students with the equipment currently in the lab. This could be enhanced further through additional purchases of equipment, such as a motional analysis system and a Bod Pod or segmental bioelectrical impedance unit for body composition analysis. These are costly items that would require additional resources outside of the EXSS operating budget.

### **d. Student/alumni data**

- Many students in EXSS pursue professional certifications in personal training, strength coaching, or other related areas during their studies or following graduation. However, we have not regularly tracked how many students earned certifications or which ones they received. Similarly, we do not have a system in place to keep track of students who have gained entrance to graduate programs in related fields, though many of our graduates earn graduate degrees. In the fall of 2018, we launched an alumni survey that asks about this information, however, the response rate to the survey was low and only a sampling of students (those 5 years post-graduation) were contacted. We know students in the EXSS major have been successful at earning professional certifications and gaining entrance into graduate programs. We can better promote our programs by developing a more comprehensive system to gather this data.

## **3. Weaknesses of the program:**

### **a. Limited Electives**

- There are currently limited electives within our major that our students could enroll in as they complete their studies. This is limited by the number of free elective credits permissible in our major (6 credits), and a current lack of offerings.

- The program can enhance the learning experience of the students through the development of new classes
- b. Lack of motion analysis equipment
- For coursework in the studies of biomechanics and motor control, motion analysis equipment is a hallmark of this type of program. This equipment is useful for both engaging students in their learning, and for research purposes. It could also be used by the strength coaches to assess sport-specific movements in our student-athletes.
  - This equipment is often costly, and typically requires a dedicated space.
- c. Lack of personal training practicum
- While many students obtain personal training certifications during or after their time in the EXSS program, there is no formal course aimed at preparing students to become personal trainers. Further, the EXSS department does not currently engage in personal training for the campus community. We have identified the need to develop a course and/or practicum in personal training to both enhance learning opportunities for students interested in personal training and also offer personal training to the campus community.
- d. The department could expand through a graduate program. The addition of a graduate program would require additional equipment and resources.

#### **4. Opportunities for addressing weaknesses**

The weaknesses outlined in this self-study could all be addressed and resolved with appropriate resources. Each weakness will be addressed in the following action plan.

#### **5. Positioning the program to address future direction of the discipline.**

With the anticipated growth of the strength and conditioning field, the EXSS department will closely follow changes to this field to ensure the curriculum remains relevant. We will seek accreditation through the National Strength and Conditioning Association, as described in the action plan below. We will also evaluate the concentration in Clinical Exercise Physiology to determine if renaming the program, splitting this into two programs (one for pre-physical therapy and other pre-occupational therapy and one for other clinical fields such as cardiac rehabilitation), or adding additional academic standards for those wishing to pursue a pre-physical therapy option is warranted. A major goal is to create a more externally visible route to graduate study in physical therapy and occupational therapy.

## 6. Action Plan

Specific area where improvement is needed	Evidence to support the recommended change	Person(s) responsible for implementing the change	Timeline for implementation	Resources needed	Assessment Plan
Apply to become an NSCA Education Recognized Provider (ERP) institution	This would improve visibility of the strength and conditioning concentration by being posted on the NSCA website as a recognized program and students coming from a program with this credential would receive discounts on certification exams. Further, there are scholarships available only to students coming from ERP programs.	David Heikkinen	AY2020	\$500 for ERP application fee	Attain ERP certificate by AY2020.
Apply for accreditation from the National Strength and Conditioning Association for our concentration in Strength and Conditioning	In the Summer of 2018, the National Strength & Conditioning Association (NSCA) released new criteria that will be implemented for those who wish to sit for the Certified Strength &	David Heikkinen, Jeff Godin	Apply for accreditation in AY2022; begin reviewing courses to ensure alignment with requirements for accreditation in AY2021	TBD as the accreditation process is still being developed. Potential resources would be a one semester 3 credit APR to review curriculum for alignment with accreditation requirements and	Attain accreditation from NSCA by AY2023

	Conditioning Specialist (CSCS) certification. By the target date of 2030, any individual who wishes to sit for the CSCS exam will need to have graduated from an accredited 4 year Strength & Conditioning program. Academic programs will be able to apply for accreditation in the year 2022.			preparation of application; application/renewal fees	
Develop personal training centric curriculum and on-campus opportunities for students to develop the skills required to work in the commercial fitness industry.	One weakness from our previous program review was a lack of hands-on apprenticeship opportunities for students. While the strength and conditioning concentration was created with this intention in mind; we currently do not have a practical experience for personal training.	Lindsay Parisi Jessica Alsup Jeff Godin	Gather data on related programs; fall 2019  Implement program AY2022	3-credit APR in AY2022 for the development of curriculum	Program implemented by AY2022

	<p>This curriculum would address that weakness.</p> <p>Furthermore, there is demand from the campus community to have personal training services available. Preparing students to work with campus members would benefit our campus community as well.</p>				
<p>Establish more externally visible route to physical therapy</p>	<p>This would enhance recruitment of students who may overlook the EXSS program at FSU for institutions that have a program specifically called pre-PT</p>	<p>Danielle Wigmore Karen Keenan Jessica Alsup</p>	<p>Evaluate current clinical exercise physiology curriculum and pre-requisites for PT and OT programs to determine best route for pre-PT program and submit proposal for development of new concentration, if warranted, by SP2020</p>	<p>TBD: an additional faculty member and funding for supplies and/or equipment may be warranted if new courses are added and/or if this change results in significant growth in enrollment.</p>	<p>Proposal for new concentration submitted by spring 2020</p>
<p>Explore possibility of updating the curriculum for electives containing a wider range of skillsets (i.e., Physical Therapy, Allied Health, other</p>	<p>We have identified lack of electives in other areas of exercise science as a weakness of our program. We'd like to provide more choice for free</p>	<p>Monica Maldari Jason Talanian</p>	<p>Begin researching potential courses AY2020; identify potential courses and faculty interest by AY2021; submit proposals for new</p>		<p>New electives in the catalog by fall 2022 with rotation for course offerings developed</p>

classes pertaining to S&C, and other electives)	electives for students.		courses to AUC by AY2022		
Feasibility study for the development of a graduate program	Though there is interest in growing the EXSS program through the addition of a graduate program, research must be conducted to determine the demand for such a program as well as the faculty, space, and equipment resources that would be needed	Tim Hilliard Danielle Wigmore Monica Maldari	Feasibility study in AY2022; If graduate program is deemed viable, submit proposal to AUC in AY2024	Additional lab space, additional faculty, specifics TBD	Proposal for graduate program, if deemed viable, by AY2024, with first class in AY2025.
Acquire equipment for high speed motion analysis	The ability to perform motion analysis will enhance teaching in several EXSS courses as well as provide opportunities for research and coaching of athletes.	Tim Hilliard	Spring 2019	\$27,345	N/A
Develop system to track students who earn professional certifications and graduate degrees	Currently, we only have this information from students who have reached out to faculty to inform them. While we have questions pertaining	Danielle Wigmore, All to contribute to gathering student data	spring 2020	None	Database implemented by spring 2020, updated annually



	to this on the alumni survey that was launched this year, we are only surveying students 5 years post-graduation. Further, response rate for surveys is low.				
Develop rotation for small equipment purchase to support the strength and conditioning practicums in Landry Arena weight room.	Items that receive heavy use need to be replaced frequently. We currently have no budget to purchase equipment for the Landry Arena weight room.	Jeff Godin	Spring 2019	Requested \$3000 increase to annual operating budget for purchase and replacement of small equipment.	Review equipment needs and purchases on an annual basis.

## **Appendix 1: EXSS Assessment Reports**

### **AY 2013-2014 Annual Assessment Report**

#### 1. Narrative:

Please summarize your department or program's assessment activities during the past academic year.

This year, Dr. Hilliard designed a research methods course for Exercise and Sports Science majors to address, among other things, the poor information literacy skills of our students (please see last year's assessment report for details on information literacy assessment). Due to some unforeseen issues with credit requirements, the course was not submitted for AUC approval this year. This is first on the agenda for next academic year.

This year, we chose to evaluate Program Goal 7: Ability to adapt strength and CV conditioning protocols for special populations, Program Goal 10: Ethical reasoning, and Program Goal 11: Demonstrated knowledge in a variety of content areas. Evaluating ethical reasoning was much more challenging than we had anticipated. We attempted to use the LA&S rubric for ethical reasoning with an assignment from our Senior Seminar course. After struggling through several pieces of student work, we determined that the assignment did not match up well with the rubric. We also realized that we weren't exactly sure what it was that we wanted our students to be able to do in terms of ethical reasoning or where in the curriculum, other than Senior Seminar, ethical reasoning was being explicitly taught or even addressed. We decided to make this a topic of discussion for September's department meeting to get a better handle on what the faculty think students should know and how/where we are teaching those things. This will also help us write a rubric that is more appropriate for our departmental assessment.

For goal 11, we decided to use a practice exam from the ACSM Health Fitness Instructor certification as a starting point. The exam is being circulated to faculty to review questions for relevance, currency and inclusiveness. We are also considering requiring students to take the ACSM exam as an alternative to administering an exam on Blackboard. In addition to providing scores to use for assessment, this would certify students as Exercise Specialists through the American College of Sports Medicine, a certification some will pursue anyway. However, it may be cost prohibitive. This idea needs more discussion.

#### 2. Annual Analysis of Data

What is/are the most important thing(s) you learned from assessment in the past academic year, and how does knowing this benefit your program?

- We need to better define our expectations of ethical reasoning so that we feel we can effectively assess this skill. We also will seek to identify areas in the curriculum, in addition to Senior Seminar, where ethical reasoning can be addressed.
- The majority of students are meeting or exceeding expectations when it comes to adapting exercise programs for special populations.

Please specify the following using the table that follows:

Outcomes:

What are the formal learning outcomes that your program has assessed, for which you have looked at data (*including data collected in prior years*), and for which you have made or proposed program changes in the past academic year? Please include the full outcome statement your program uses.

Data:

Other than GPA, what data/evidence was used to determine that graduates have achieved the stated outcomes for the degree? This *can include data collected in prior years and analyzed this year*(e.g., capstone course, portfolio review, licensure examination)

Changes:

What changes have been made or proposed as a result of using the data/evidence? Please specify clearly which changes have been proposed based on this year's data and which have been enacted this year based on either this year's or prior year's data. *This can include changes to your program or changes to your assessment system.*

Using Data to Improve Student Learning Outcomes This Year.

Outcomes	Data	Changes																								
<p>Goal 5: Demonstrate ability to adapt strength and CV conditioning protocols for special populations</p>	<p>For this goal, we evaluated case studies from Exercise Response and Adaptations in Special Populations. The table below includes the percent of samples that scored in each of the 3 rating categories. 1 = does not meet expectation, 2 = meets expectation, 3 = exceeds expectation.</p> <table border="1"> <thead> <tr> <th></th> <th>1</th> <th>2</th> <th>3</th> </tr> </thead> <tbody> <tr> <td>Patient Assessment</td> <td>4%</td> <td>21%</td> <td>75%</td> </tr> <tr> <td>Exercise Considerations</td> <td>11%</td> <td>36%</td> <td>53%</td> </tr> <tr> <td>Program Design: CR fitness</td> <td>0%</td> <td>43%</td> <td>57%</td> </tr> <tr> <td>Program Design: Strength</td> <td>4%</td> <td>32%</td> <td>64%</td> </tr> <tr> <td>Program Design: Flexibility</td> <td>11%</td> <td>25%</td> <td>64%</td> </tr> </tbody> </table> <p>*28 responses for each rubric category</p>		1	2	3	Patient Assessment	4%	21%	75%	Exercise Considerations	11%	36%	53%	Program Design: CR fitness	0%	43%	57%	Program Design: Strength	4%	32%	64%	Program Design: Flexibility	11%	25%	64%	<p>Students are performing well in this area. No changes are recommended at this time.</p>
	1	2	3																							
Patient Assessment	4%	21%	75%																							
Exercise Considerations	11%	36%	53%																							
Program Design: CR fitness	0%	43%	57%																							
Program Design: Strength	4%	32%	64%																							
Program Design: Flexibility	11%	25%	64%																							

3. Future Assessment Plans:

What are your top assessment priorities for next year and what will assure that next year’s assessment priorities are accomplished?

Since we were unable to assess ethical reasoning this year, we will include that in next year’s assessment. Additionally, we will continue to prepare the comprehensive exam with the goal of distributing it in the spring to our graduating seniors (or have them take ACSM exam; please see above). Additional goals for assessment will be discussed in our first fall meeting.

Please specify the following using the table that follows the outcomes to be assessed, data to be collected and who will collect and interpret the evidence? What is the process? (e.g. annually by the curriculum committee)

The departmental assessment committee determines which program goals will be assessed in a given academic year and is responsible for obtaining samples of student work to be used for assessment. The job of assessing student work is shared by the entire department.

Plans for Collecting Data on Student Learning Outcomes Next Year

Outcomes	Data to be collected	Collection and interpretation
Goal 11: Demonstrate knowledge in a variety of content areas	Comprehensive exam scores.	Exam is still being developed.
Goal 10: Ethical Reasoning	Exact artifact has not yet been determined. More in-depth discussion among faculty regarding this goal is needed.	Assignment and rubric to be determined.

**AY 2014-2015 Annual Assessment Report**

4. Narrative:

Please summarize your department or program’s assessment activities during the past academic year.

This year, we received AUC approval for a research methods course for Exercise and Sports Science majors to address, among other things, the poor information literacy skills of our students (please see assessment report from AY2013 for details on information literacy assessment). All EXSS students entering the major during or after FA15 will be required to take this course.

This year, we chose to evaluate Program Goal 10: Ethical reasoning, and Program Goal 11: Demonstrated knowledge in a variety of content areas. Dr. Talanian revised the LA&S rubric for ethical reasoning to use with an assignment from our Senior Seminar course. Data are provided below. Faculty evaluating the assignments with this rubric reported difficulty evaluating the categories of “statement of position”,

“moral reasoning” and “ethical self-awareness”. Because the assignment asks students to discuss the pros and cons of each ethical issue, it was difficult to determine what the student’s position was and whether the arguments reflected their core beliefs. Future discussion of this goal will include whether a different assignment should be used for assessment, the existing assignment should be revised to more clearly address the categories of ethical reasoning we find important for students to know, or whether the rubric should be altered to better align with the assignment.

For goal 11, the EXSS faculty reviewed questions from a practice exam from the ACSM Health Fitness Instructor certification for relevance, currency and inclusiveness. We identified questions that would be appropriate for a comprehensive exam for graduating EXSS student and used them to create a draft exam. Our plan is to finalize the exam next fall and administer it to our graduating seniors next spring.

#### 5. Annual Analysis of Data

What is/are the most important thing(s) you learned from assessment in the past academic year, and how does knowing this benefit your program?

- We still need to work on alignment of our assignment prompt and expectations in the area of ethical reasoning.

Please specify the following using the table that follows:

#### Outcomes:

What are the formal learning outcomes that your program has assessed, for which you have looked at data (*including data collected in prior years*), and for which you have made or proposed program changes in the past academic year? Please include the full outcome statement your program uses.

#### Data:

Other than GPA, what data/evidence was used to determine that graduates have achieved the stated outcomes for the degree? This *can include data collected in prior years and analyzed this year*(e.g., capstone course, portfolio review, licensure examination)

#### Changes:

What changes have been made or proposed as a result of using the data/evidence? Please specify clearly which changes have been proposed based on this year’s data and which have been enacted this year based on either this year’s or prior year’s data. *This can include changes to your program or changes to your assessment system.*

Using Data to Improve Student Learning Outcomes This Year.

Outcomes	Data	Changes														
<p>Goal 10: Demonstrate ethical reasoning</p>	<p>For this goal, we evaluated ethical reasoning papers from Senior Seminar. Each paper included discussion of 2 ethical issues. Because one faculty member provided a score for each issue while the other provided one score for both issues, some papers received a score of 1.5 or 2.5. For this reason, the data are presented as average values rather than percentage of scores in each rating category. For reference, rating categories were as follows: 1 = deficient, 2 = sufficient, 3 = proficient.</p> <table border="1"> <thead> <tr> <th></th> <th>Average score from 2 evaluators</th> </tr> </thead> <tbody> <tr> <td>Ability to identify an ethical issue</td> <td>2.5</td> </tr> <tr> <td>Statement of position</td> <td>1.7</td> </tr> <tr> <td>Analysis of ethical issues</td> <td>1.5</td> </tr> <tr> <td>Application of their ethical reasoning</td> <td>1.8</td> </tr> <tr> <td>Ethical Self-awareness</td> <td>1.1</td> </tr> <tr> <td>Moral Reasoning</td> <td>1.8</td> </tr> </tbody> </table> <p>*26 responses for each rubric category</p>		Average score from 2 evaluators	Ability to identify an ethical issue	2.5	Statement of position	1.7	Analysis of ethical issues	1.5	Application of their ethical reasoning	1.8	Ethical Self-awareness	1.1	Moral Reasoning	1.8	<p>While the data appear to indicate that students are not meeting ethical reasoning expectations, it is unclear whether the data truly reflect the students' performance or misalignment of the rubric with the assignment prompt. This discussion will be brought up with faculty in the fall.</p>
	Average score from 2 evaluators															
Ability to identify an ethical issue	2.5															
Statement of position	1.7															
Analysis of ethical issues	1.5															
Application of their ethical reasoning	1.8															
Ethical Self-awareness	1.1															
Moral Reasoning	1.8															

6. Future Assessment Plans:

What are your top assessment priorities for next year and what will assure that next year’s assessment priorities are accomplished?

We will continue to work on our assessment of ethical reasoning next year. Additionally, we will continue to prepare the comprehensive exam with the goal of distributing it in the spring to our graduating seniors. Additional areas for program assessment will be determined in the fall.

Please specify the following using the table that follows the outcomes to be assessed, data to be collected and who will collect and interpret the evidence? What is the process? (e.g. annually by the curriculum committee)

The departmental assessment committee determines which program goals will be assessed in a given academic year and is responsible for obtaining samples of student work to be used for assessment. The job of assessing student work is shared by the entire department.

Plans for Collecting Data on Student Learning Outcomes Next Year

Outcomes	Data to be collected	Collection and interpretation
Goal 11: Demonstrate knowledge in a variety of content areas	Comprehensive exam scores.	Exam is still being developed.

**AY 2016-2017 UARC Report**

**Undergraduate Program-Specific Student Learning Outcome and Success  
Annual Report**

**I. Program Information**

Program/Department: Exercise and Sports Science, Fitness Management and Clinical Exercise Physiology Concentrations  
Department Chair: Dr. Danielle Wigmore  
Department Assessment Committee Contact: Dr. Lindsay Parisi (Laamann)



## II. Program-Specific Student Learning Outcomes (Educational Objectives)

List ALL Program-Specific SLOs first, and the assessment timeline (annual or bi-annual) for assessing each program SLO.

\*Please note: We are revising our goals, so the expected timing of assessment is to be determined (TBD) for a number of them.

<b>Program SLO</b>	<b>Expected Timing of assessment (annual, semester, bi-annual, etc.)</b>
<b>1a Demonstrate effective verbal communication in formal presentation</b>	<b>TBD</b>
<b>1b Demonstrate effective verbal communication in informal setting</b>	<b>TBD</b>
<b>2 Demonstrate effective writing</b>	<b>TBD</b>
<b>3 Demonstrate competence in health-related fitness testing</b>	<b>TBD</b>
<b>4 Demonstrate competence in performance-related fitness testing</b>	<b>TBD</b>
<b>5 Demonstrate competence in exercise programming for healthy populations</b>	<b>TBD</b>
<b>6 Demonstrate competence in exercise programming for higher level athletic performance</b>	<b>TBD</b>
<b>7 Demonstrate ability to adapt strength and cardiovascular conditioning protocols for special populations</b>	<b>TBD</b>
<b>8 Demonstrate ability to collect and interpret physiological data</b>	<b>TBD</b>
<b>9 Demonstrate ability to describe and demonstrate safe and effective strength and conditioning methods</b>	<b>TBD</b>
<b>10 Demonstrate ethical reasoning</b>	<b>TBD</b>
<b>11 Demonstrate knowledge in a variety of content areas</b>	<b>Annually, beginning AY 17/18</b>
<b>12 Demonstrate ability to apply knowledge in work-related settings</b>	<b>TBD</b>
<b>13 Demonstrate ability to critically evaluate emerging information in the field</b>	<b>Annually, beginning AY 17/18</b>
<b>14 Gain admissions into graduate programs when desired?</b>	<b>TBD</b>
<b>15 Pass national certification exams when desired?</b>	<b>TBD</b>

**III. SLO Assessment (Please report on the SLO's most recently reviewed)**

Using the table below, list and briefly describe the direct methods used to collect information assessing whether students are learning the core sets of knowledge (K), skills (S) and attitudes (A) identified as essential.

<b>Dept. SLO #</b>	<b>Assessment description (exam, observation, national standardized exam, oral presentation with rubric, etc.)</b>	<b>When assessment was administered in student program (internship, 4<sup>th</sup> year, 1<sup>st</sup> year, etc.)</b>	<b>To which students were assessments administered (all, only a sample, etc.)</b>
13 Demonstrate ability to critically evaluate emerging information in the field	Exercise Physiology II group research papers	2 <sup>nd</sup> year	Collected samples from spring and summer 2016 and intend to collect samples from spring 2018 to compare scores before and after adding required research methods class to curriculum
11 Demonstrate knowledge in a variety of content areas	Comprehensive exam	Final semester as EXSS major	Eventually all graduating seniors. We plan to pilot the exam with a small group of students (~30) next fall.

**IV. Summary of Findings:** Briefly summarize the results of the assessments reported in Item III above and how do these compare to the goals you have set?

<p><b>Other than GPA, what data/evidence is used to determine that graduates have achieved the stated outcomes for the degree? (e.g., capstone course, portfolio review, licensure examination)</b></p>	<p><b>Who interprets the evidence? What is the process? (e.g. annually by the curriculum committee)</b></p>	<p><b>What changes have been made as a result of using the data/evidence?</b></p>
<p>Exercise Physiology II group research papers</p>	<p>2 faculty will review each paper using the same rubric. An average score will be calculated for each paper.</p>	<p>N/A: We recently added a Research Methods course and would like to see if students' performance in the area of critical evaluation of information in the field improves as a result of the course. We will collect papers from next spring's class to make this comparison.</p>
<p>Comprehensive Exam</p>	<p>The EXSS Assessment Committee</p>	<p>N/A: Piloting the exam Fall 2017</p>

## SSC Data

Indicate a student success performance measure(s) that the department identified as a key measure that it wants to improve. Freshman retention, bottleneck courses, graduation rates, at risk student retention etc.

Student Success Measure (data point from SSC)	Rationale for selection	Planned or Implemented Intervention	Current score/ Target Score
Percent of students who graduate in the EXSS Major when they earn below a 2.0 in either A&P I or Introduction to Exercise Science	<p>No students earning a D or F in Intro to EXSS, and only 6% of students earning a D or F in A&amp;P I, went on to graduate with a degree in EXSS. These classes are important indicators of students' ability in science and predict success in the major. While we have a minimum GPA requirement in the major, many students get too far into the program before reaching the point where they are placed on probation or ultimately removed from the major. Further, the EXSS department has noted that the probation/removal process can happen over an academic year. Thus, if a student is ultimately removed from the major for inadequate academic performance in EXSS, he/she has lost a year of coursework that could have been put towards another major. The intent of adding the minimum grade requirement is to identify students early on who may not be successful in EXSS. Subsequently, they can be advised towards a more appropriate major which in turn may allow them to progress more efficiently towards their graduation requirements.</p>	<p>Minimum grade requirements of a 2.0 in both A&amp;P I and Introduction to Exercise Science in order to take any courses in the major aside from Human Motor Development. This policy was implemented in Fall 2016.</p>	

**V. Phase I Data**

Indicate department success performance measure(s) that the department identified as a key measure that it wants to improve (from phase 1 data).

Number of graduates, number of majors, credit production, substitutions etc.

<b>Department Performance Measure (data point from Phase 1)</b>	<b>Rationale for selection</b>	<b>Planned or Implemented Intervention</b>	<b>Current score/ Target Score</b>
Retention Rate in Major (Freshman) + Retention Rate Changed Major	The retention rate for freshmen in the major and the retention rate for freshmen who changed their major was chosen because a number of freshmen coming into the EXSS major do not realize how science-based the major actually is. For this reason, it is unrealistic to expect that we will retain the same number of freshmen in the major as the institutional average; however, with proper advising, it can be expected that we can meet the institutional average when the retention rate in the major is added to the retention rate for freshmen who changed their major.	We would like to ID students in SSC who are entering the major and are considered to be at Moderate-High Risk in the major, and use this information to implement more intensive advising and/or supplemental instruction and/or study groups for those students. We would also like to ID students who may need more extensive advising upon arrival to the university.	We used an average of 3 years (AY14, AY15, AY16) of data from Phase I. Current Score: 64.45% Target Score: 77.76%

**VI. Activities and Adjustments to/Deviation from the Department Assessment Plan**

Describe any changes in the assessment plan including new SLOs, new assessments.

## AY 2017-2018 UARC Report

### Program Information

Program/Department: Exercise and Sports Science (EXSS)

Department Chair: Danielle Wigmore

Department Assessment Committee Contact: Lindsay Parisi

*Please be as detailed as possible in your responses. We will use this information to fulfill our NEASC requirements and this report will help with your next Program Review or aid with your external accreditation. This file is to be kept in the department and an electronic file is due to the Director of Assessment by **May 31** each academic year.*

### Program Learning Outcomes (PLOs) (Educational Objectives)

#### I. List all PLOs and the timeline for assessment.

PLO #	PLO – Stated in assessable terms.	Timing of assessment (annual, semester, bi-annual, etc.)	When was the last assessment of the PLO completed?
<b>1</b>	Students will demonstrate effective communication		
<b>1.1a</b>	Verbal: Formal setting	triennial	2011
<b>1.1b</b>	Verbal: Informal setting	triennial	2011
<b>1.2a</b>	Written: Formal setting	triennial	Has not been assessed
<b>1.2b</b>	Written: Informal setting	triennial	Has not been assessed
<b>2</b>	Students will implement fitness testing		
<b>2.1</b>	Health-related fitness testing	triennial	2012
<b>2.2</b>	Performance-related fitness testing	triennial	Has not been assessed

<b>3</b>	Students will design exercise programs		
<b>3.1</b>	For the general population	triennial	2012
<b>3.2</b>	For athletic performance	triennial	2011
<b>4</b>	Students will demonstrate information literacy	triennial	Revised goal 2018- has not been assessed
<b>5</b>	Students will demonstrate quantitative reasoning.	triennial	New goal- Has not been assessed

**II. PLO Assessment (Please report on the PLOs assessed and/or reviewed this year, programs should be assessing at least one each year.)**

Using the table below, list and briefly describe the **direct method(s)** used to collect information assessing whether students are learning the core sets of knowledge (K), skills (S) and attitudes (A) identified as essential.

<b>PLO #</b>	<b>Assessment description (exam, observation, national standardized exam, oral presentation with rubric, etc.)</b>	<b>When assessment was administered in student program (internship, 4<sup>th</sup> year, 1<sup>st</sup> year, etc.)</b>	<b>To which students were assessments administered (all, only a sample, etc.)</b>	<b>What is the target set for the PLO? (criteria for success)</b>	<b>Reflection on the results: How was the “loop closed”?</b>

**III. Summary of Findings:** Briefly summarize the results of the PLO assessments reported in Section II above combined with other relevant evidence gathered and show how these are being reviewed/discussed. How are you “closing the loop”?

N/A. No PLOs were assessed this year. We spent time honing in our PLO's from a list of 15, to a list of five We have attached the rubrics used for prior assessment. These rubrics will be reviewed and revised as needed and rubrics will be developed for other goals when they come up in the assessment rotation.

<b>Other than GPA, what data/evidence is used to determine that graduates have achieved the stated outcomes for the degree? (e.g., capstone course, portfolio review, licensure examination)</b>	<b>Who interprets the evidence? What is the process? (e.g. annually by the curriculum committee)</b>	<b>What changes have been made as a result of using the data/evidence? (close the loop)</b>
<p>A combination of artifacts from various courses taught in the core curriculum is used. We are in the process of identifying assignments at the early and later stages of our curriculum for assessment of PLOs. Examples of assignments used in previous years include: Research Papers from Sports Nutrition and Cardiovascular Physiology, Exercise Physiology II group research papers, Internship presentations, Practical exams in ETP, final program prescription reports in ETP and Strength and Conditioning</p>	<p>2 faculty review each paper/presentation using the same rubric. An average score is calculated for each paper.</p> <p>For PLO 7 and 8, we will use information gathered from an alumni survey that we plan to launch this summer.</p>	<p>We added a Research Methods course in fall 2016 and would like to see if students' performance in the area of <i>information literacy</i> improves as a result of the course. We will be comparing the scores on papers from EPII prior to adding the course, with the scores on papers from EPII after adding the course. We are in the process of revising the information literacy rubric in order to complete this comparison</p>

**Assessment Plan for Program/Department**

- I. Insert the program or department Assessment Plan
- II. Explain any changes in the assessment plan including new or revised PLOs, new assessments that the program/department plans to implement and new targets or goals set for student success.



We will be working with the Director of Assessment this summer on developing our departmental assessment plan. This year, we did revise, and get rid of some of our PLOs.

<b>Program SLOs Prior to 2018</b>	<b>Revised PLOs (2018)</b>
1a Demonstrate effective verbal communication in general formal presentation	1 Students will demonstrate effective communication 1.1a Verbal: Formal Setting 1.1b Verbal: Informal Setting 1.2a Written: Formal Setting 1.2b Written: Informal Setting
1b Demonstrate effective verbal communication in formal scientific presentation	PLO 1a and 1b were combined into PLO 1.1a
1c Demonstrate effective verbal communication in informal setting	Now PLO 1.1b
2 Demonstrate effective writing	We determined that effective writing is a form of communication and belonged as a part of PLO 1
3 Demonstrate competence in health-related fitness testing	2 Students will implement fitness testing 2.1 Health-related fitness testing 2.2 Performance-related fitness testing
4 Demonstrate competence in performance-related fitness testing	PLO 3 and 4 were combined (Now PLO 2)
5 Demonstrate competence in exercise programming for healthy populations	3 Students will design exercise programs 3.1 For the <i>general</i> population 3.2 For athletic performance
6 Demonstrate competence in exercise programming for higher level athletic performance	PLO 5 and 6 were combined (Now PLO 3)  PLO 5 re-worded from healthy population to general population
7 Demonstrate ability to adapt strength and cardiovascular conditioning protocols for special populations	Removed—This is mostly addressed in courses outside of the core curriculum.
8 Demonstrate ability to collect and interpret physiological data	Removed—This was incorporated into goals 2.1 and 2.2.
9 Demonstrate ability to describe and demonstrate safe and effective strength and conditioning methods	Removed—faculty felt this was addressed through goals 3.1 and 3.2.
10 Demonstrate ethical reasoning	Removed—While discussed in several classes, ethical reasoning is not assessed in the curriculum.

11 Demonstrate knowledge in a variety of content areas	Removed—We felt this was reflected through achievement of other PLOs as well as grades in courses throughout the curriculum.
12 Demonstrate ability to apply knowledge in work-related settings	Removed—desire to pare down PLOs.
13 Demonstrate ability to critically evaluate emerging information in the field	4 <i>Students will demonstrate information literacy</i>
	5 <i>Demonstrate competence in quantitative reasoning (new PLO)</i>
14 Gain admissions into graduate programs when desired	Removed—this is a program goal, not an outcome
15 Pass national certification exams when desired	Removed—this is a program goal, not an outcome

III. If you do not have a plan, would you like help in developing one?

We received help in developing an assessment plan on May 31, 2018 at the assessment workshop. A number of changes from this workshop are reflected in this document. Four members of the EXSS department participated in the workshop.

**University Data**

**I. SSC Data**

Indicate **at least one** Student Success Performance Measure that the department/program has identified for planned change or improvement.

Freshman retention, bottleneck courses, graduation rates, at risk student retention etc.

a. What was the focus this year?

<b>Student Success Measure (data point from SSC)</b>	<b>Implemented Intervention</b>	<b>Update on Implemented Intervention (i.e. change in target, satisfied with outcome, not satisfied, will continue or not)</b>
Percent of students who graduate in the EXSS Major when they earn below a 2.0 in either A&P I or Introduction to Exercise Science.	Minimum grade requirements of a 2.0 in both A&P I and Introduction to Exercise Science in order to take any courses in the major aside from Human Motor Development. This policy was implemented in Fall 2016.	We are satisfied with the outcome and will continue with the minimum grade requirements.

b. What will your focus be for the upcoming year?\*

<b>Student Success Measure (data point from SSC)</b>	<b>Rationale for selection</b>	<b>Planned or Implemented Intervention</b>	<b>Current score/ Target Score</b>	<b>This measure was selected because of last Program Review or Accreditation (yes/no)</b>
Percent of students who graduate in the EXSS Major when they earn below a 2.0 in either A&P I or Introduction to Exercise Science.	No students earning a D or F in Intro to EXSS, and only 6% of students earning a D or F in A&P I, went on to graduate with a degree in EXSS. These classes are important indicators of students' ability in science and predict success in the major. While we have a minimum GPA requirement in the major, many students get too far into the program before reaching the point where they are placed on probation or ultimately removed from the major. Further, the EXSS department has noted that the probation/removal process can happen over an academic year. Thus, if a student is ultimately removed from the major for inadequate academic performance in EXSS, he/she has lost a year of coursework that could have been	Minimum grade requirements of a 2.0 in both A&P I and Introduction to Exercise Science in order to take any courses in the major aside from Human Motor Development. This policy was implemented in Fall 2016. Students who receive less than a 2.0 in A&P I and/or Introduction to Exercise Science will be given 1 chance to retake the course in order to improve their grade to a 2.0 or better. If they do not achieve this grade, we will assist them in finding another major at FSU.	We discussed using scores for retention rate changed major and graduation rate in the major to determine whether or not the minimum grade requirement is working. The current graduation rate in the major based on an average of AY09, AY10, and AY11 is 38.21%. Target score: Institutional Average of AY09, AY10, and AY11 (55.54%).	No

	put towards another major. The intent of adding the minimum grade requirement is to identify students early on who may not be successful in EXSS. Subsequently, they can be advised towards a more appropriate major which in turn may allow them to progress more efficiently towards their graduation requirements.		The current retention rate changed major, based on an average of AY15, AY16, AY17 is 16.44%. Rather than set a target, we would like to monitor this over time.	

\*Note: Programs may wish to monitor or review the same data point over multiple years.

## II. Trend Data

Indicate **at least one** Department Performance Measure that the program/department identified for change or improvement. Number of graduates, number of majors, credit production, substitutions etc.

a. What was the focus this year?

<b>Department Performance Measure (data point from Trend Data)</b>	<b>Implemented Intervention</b>	<b>Update on Implemented Intervention (i.e. change in target, satisfied with outcome, not satisfied, will continue or not)</b>
Retention Rate in Major (Freshman) + Retention Rate Changed Major	Members of the assessment committee discussed ways that we could identify students who were considered Moderate-High risk through SSC upon their arrival to FSU and discussed strategies for early intervention with those students. In AY18, we would like to implement these early intervention strategies.	Target Score: 77.76% Current Score (using an average of 3 years, AY15, AY16, AY17): 67.91% (increased from 64.45% for AY14, AY15, AY16 average)

b. What will be the focus next year?\*

<b>Department Performance Measure (data point from Trend Data)</b>	<b>Rationale for selection</b>	<b>Planned or Implemented Intervention</b>	<b>Current score/ Target Score</b>	<b>This measure was selected because of last Program Review or Accreditation (yes/no)</b>
Retention Rate in Major (Freshman) + Retention Rate Changed Major	The retention rate for freshmen in the major and the retention rate for freshmen who changed their major was chosen because a number of freshmen coming into the EXSS major do not realize how science-based the major actually is. For this reason, it is unrealistic to expect that we will retain the same number of freshmen in the major as the institutional average; however, with proper advising, it can be expected that we can meet the institutional average when the retention rate in the major is added to the retention rate for freshmen who changed their major.	We would like to ID students in SSC who are entering the major and are considered to be at Moderate-High Risk in the major, and use this information to implement more intensive advising and/or supplemental instruction and/or study groups for those students. We would also like to ID students who may need more extensive advising upon arrival to the university. We discussed the ways in which we can be proactive with these students rather than waiting to see how they do.	We used an average of 3 years (AY15, AY16, AY17) of data from Phase I. Current Score: 67.91% Target Score: 77.76% (*Interestingly, in AY17 alone, this score was 76.47%)	No

<p>Percentage of Overall Declared Majors</p>	<p>The percentage of overall declared majors increased from AY13 to AY14, where it reached a peak, and has been decreasing each year since AY14.</p>	<p>We added a concentration in Strength and Conditioning which is a growing field in Exercise and Sports Science. Additionally, we would like to work with admissions to better market ourselves, particularly our Clinical Exercise Science (CES) concentration. We would like to make sure that potential students are aware that the CES concentration can prepare students for graduate school programs in the rehabilitation sciences (PT, AT, OT), in addition to nursing programs and the field of cardiac rehabilitation.</p>	<p>Current Score for percent of declared majors that are EXSS majors: AY17 5.84%</p> <p>Target Score: Peak Score from AY14 6.91%</p>	<p>No</p>
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\*Note: Programs may wish to monitor or review the same data point over multiple years.

## Program Review Action Plan or External Accreditation Action Letter/Report

*Annual Reflection/Follow-up on Action Plan from last Program Review or external accreditation (only complete the table that is appropriate for your program)*

### I. Programs that fall under Program Review:

- i. Date of most recent Review: 2013
- ii. Insert the Action Plan table from your last Program Review and give any progress towards completing the tasks or achieving targets set forth in the plan.

\*Note: The action plan created after our last program review did not fit well into the table provided in this report. Below is the action plan in its current form, with the bolded sections reflecting progress to date.

#### Action Plan

Spring 2014:

-Develop course “Introduction to Research in Exercise Science” for submission to All University Committee. The goal of adding this course was to improve students’ abilities to critically evaluate information in the field. **The course was added in the fall of 2016.** Contact: Tim Hilliard

-Submit extraordinary budget proposal for Venous Occlusion Plethysmography Unit. **This was purchased in 2014.** Contact: Danielle Wigmore

-Develop course “Neuromechanics of Human Motion” for submission to All University Committee. The faculty had determined there was redundancy in our Motor Learning and Biomechanics courses and combined them into this one course with a lab component. **This course became named Biomechanics and Motor Control of Human Movement and was added in the spring of 2017.** Contact: Tim Hilliard and/or Dave Heikkinen

Fall 2014:

-Feasibility study on the development of Pre-Major In EXSS. **Preliminary discussions occurred this year, but no action was taken.** Contact: Tim Hilliard

-Feasibility study on the development of IDIS program specializing in Fitness and Coaching or Physical Education. **No action taken.** Contact: Danielle Wigmore

-Feasibility study on the development of tracks in Clinical Exercise Physiology called Sports Medicine or Pre-Physical Therapy/Occupational Therapy. **This topic has been discussed multiple times by faculty.** Contact: Monica Maldari

-Develop a proposal for the incorporation of Apprenticeships in Strength and Conditioning, Personal Fitness Training, and Fitness for Special Populations to promote university-wide health and fitness and enhance performance of student athletes. **This is still of interest, but other priorities have pushed this back.** Contact: Jeff Godin

Spring 2015:

- Feasibility study on the development of EXSS Concentration: Strength and Conditioning. **Completed.** Contact: Jeff Godin and Dave Heikkinen
- Submit proposal to the All University Committee for the addition of Sports Medicine or Pre-Physical Therapy/Occupational Therapy track. **This was not warranted because students completing our clinical exercise physiology concentration would have the pre-requisite courses for graduate programs and physical therapy and occupational therapy. Based on this as well as consultation with Admissions, the faculty have indicated a desire to first work on marketing and promotion of our clinical exercise physiology concentration (which may include a name change) before considering the addition of a new concentration.**
- Submit proposal to the All University Committee for IDIS program specializing in Fitness and Coaching. **No action taken.**
- Submit extraordinary budget proposal for high speed motion filming, and software for the computer generation of biomechanical models. **This was postponed due to the lack of space to use such equipment. With the recent completion of the new strength and conditioning facility, a budget proposal for such equipment will be submitted during AY19.** Contact: Tim Hilliard

Fall 2015:

- Incorporate EXSS Pre-Major if warranted and approved. **Work in the AY2016 revealed that students earning a D or F in Intro to EXSS or A&P I were rarely going on to graduate with a degree in EXSS. Based on this, we created a minimum grade policy for these two classes rather than a pre-major in EXSS. Students now need to earn a 2.0 in both classes to move on in the major. This policy was implemented in fall of 2016.** Contact: Danielle Wigmore
- Develop courses to support Strength and Conditioning Concentration Contact: **This development of the new concentration was postponed due to lack of an appropriate facility to carry out the courses to be included in the concentration. With the recent completion of the new strength and conditioning facility, these courses were designed and submitted to AUC in AY18 along.** Jeff Godin, Dave Heikkinen, Jason Talanian.
- Submit proposal to the All University Committee for the addition of Strength and Conditioning concentration to the Exercise and Sports Science Major. **This development of the new concentration was postponed due to lack of an appropriate facility to carry out the courses to be included in the concentration. With the recent completion of the new strength and conditioning facility, the proposal for the concentration in Strength and Conditioning was submitted to AUC in AY18. The concentration will be among our offerings beginning in Fall 2018.** Contact: Dave Heikkinen, Jeff Godin.

Spring 2017:

- Begin EXSS Department Internal Review for Fall 2017. **At our faculty retreat in May 2018, we reviewed the self-study from 2013, and began divvying up the work between the department faculty. We have set a tentative date for a draft before academic advising begins in October 2018.**



Specific area where improvement is needed	Evidence to support the recommended change	Person(s) responsible for implementing the change	Timeline for implementation	Resources needed	Assessment Plan	Progress Made this Year

iii. If you do not have an action plan, would you like help in developing one based on your last program review and needs of the program?

Yes

**II. Programs with external Accreditation:**

- i. Accreditor:
- ii. Date of last review:
- iii. Date of next review and type of review:
- iv. List key performance indicators:

List key issues for continuing accreditation identified in accreditation action letter or report.	Key performance indicators as required by agency or selected by program (licensure, board or bar pass rates; employment rates, etc.)(If required.)	Update on fulfilling the action letter/report or on meeting the key performance indicators.

**SUPPLEMENTAL MATERIAL**

**Program goal 1.1 a: Students will demonstrate effective communication in a formal setting**

**Competency level: Basic knowledge and skills**

**Artifact:**

**Student's initials:** \_\_\_\_\_

<b>Indicator</b>	<b>Did Not Meet the Standard (1)</b>	<b>Acceptably Meets the Standard (2)</b>	<b>Comprehensively Meets the Standard (3)</b>
<b>Content and Organization</b>	Presentation is not well organized. Content is not appropriate and/or discussion is weak. PowerPoint slides are unclear, too wordy, and/or contain more than 2 typos.	Presentation is well organized and follows a logical flow. Purpose of the presentation is clear, and content is appropriate, but discussion could be more thorough in some areas. PowerPoint slides are effective but either have too much text per slide OR contain 1-2 typos.	Presentation is well organized and follows a logical flow. Purpose of the presentation is clear, and content is appropriate with thorough discussion of the topic. PowerPoint slides are clear and readable, include the appropriate amount of text, make good use of figures, and lack typos.
<b>Delivery and Presentation</b>	Students mumble or speak too softly, fail to make eye contact with the audience, and/or read all parts of the presentation from notes or slides. Transitions are choppy, and presentation needs more practice.	Students present in a clear voice and enunciate but make minimal eye contact with the audience and/or read from the slides. Delivery is good, but could be more polished.	Students present in a clear voice and enunciate. Students make eye contact with the audience, and do not simply read from slides or notes. Presentation is polished.
<b>Overall Effectiveness</b>	Students failed at two or more of the following: dressing professionally, using a professional tone, or articulately and accurately answering questions, observing the time limit.	Students failed at one of the following: dressing professionally, using a professional tone, or articulately and accurately answering questions, observing the time limit.	Students present themselves in a professional manner, which includes using a professional, not conversational, tone and dressing professionally. Students articulately and accurately answer questions and observe the time limit.

**Total Score:** \_\_\_\_\_

**Program goal 1.1b: Students will demonstrate effective communication in an informal setting**

**Competency level: Demonstrated competence**

**Artifact:**

**Student's initials:** \_\_\_\_\_

<b>Indicator</b>	<b>Did Not Meet the Standard (1)</b>	<b>Acceptably Meets the Standard (2)</b>	<b>Comprehensively Meets the Standard (3)</b>
<b>Description of test purpose and procedures</b>	Student either fails to describe the purpose of the test or test procedures or describes them incorrectly	Student makes small error when describing test procedure or omits one or two points	Student describes test purpose and procedures clearly and completely
<b>Attentiveness to subject/client</b>	Student neglects to communicate and observe client, inquire how s/he is doing, or ensure that client is completing tests correctly and safely	Student observes client most of the time, but either has one instance where focus is more on data than subject or where client performs task incorrectly or unsafely.	Student continually watches client, inquires how s/he is feeling, and responds to client's needs or questions. Student notices and corrects client when performing a task incorrectly and ensures that all tasks are performed safely.
<b>Description of fitness test results</b>	Student does not discuss test results with client, or gives them incorrect information about their results	Student describes test results with client, but may fail to use layman's terms or relate to fitness or disease risk	Student clearly and completely describes all test results in layman's terms and relates to fitness and risk for disease
<b>Professionalism</b>	Student is inappropriate or too informal with client		Student conducts him/herself in a professional manner at all times

**Total Score:** \_\_\_\_\_

**Program goal 2.1: Students will implement health-related fitness testing**

**Competency level: Demonstrated competence**

**Artifact:**

**Student's initials:** \_\_\_\_\_

<b>Indicator</b>	<b>Did Not Meet the Standard (1)</b>	<b>Acceptably Meets the Standard (2)</b>	<b>Comprehensively Meets the Standard (3)</b>
<b>Knowledge and execution of test</b>	Student lacks thorough knowledge of the test procedure and/or makes significant mistakes in the setup and/or execution of the test.	Student displays adequate knowledge of test, sets up test appropriately (including adjusting and/or calibrating equipment) with only minor errors, and accurately completes all parts/stages of test with only minor errors.	Student displays thorough knowledge of the test and sets up and executes test without error.
<b>Data Collection</b>	Student does not collect all relevant physiological data and/or performs measurements inaccurately or at the wrong time.	Student collects appropriate physiological data at correct time points and with only minor errors.	Student collects appropriate physiological data at correct time points and with accuracy.
<b>Calculations/data interpretation</b>	Student makes multiple errors on calculations and/or misclassifies the client's fitness level.	Calculations are performed correctly with no more than one error and client's fitness level is appropriately determined for each fitness test performed.	Calculations are performed correctly without error and client's fitness level is appropriately determined for each fitness test performed.
<b>Safety</b>	Student makes multiple mistakes that compromise safety.	Student executes test safely with no more than one safety oversight.	Student executes all parts of the test safely.

**Total Score:** \_\_\_\_\_

**Program Goal 3.1: Students will design exercise programs for the general population.**

**Competency Level: Demonstrated Competence**

**Artifact:**

Student's initials: \_\_\_\_\_

<b>Indicator</b>	<b>Did Not Meet the standard (1)</b>	<b>Acceptably Meets Standard (2)</b>	<b>Comprehensively Meets Standard (3)</b>
Risk Factor identification and stratification	Missed more than 1 risk factor and/or incorrectly stratified client's risk	Missed only 1 risk factor and correctly stratified client's risk based on risk factors identified	Identified all risk factors and correctly stratified risk
Assessment	Incorrectly categorized more than one test item	Incorrectly categorized only test item	Correctly categorized according to the norms
Program Design - General	Did not include one or more components of physical fitness		Included all components of physical fitness
Program design CR Fitness	Did not include all components of FIT	Included all components of FIT, program was reasonable based off of client status and fitness level	Included all components of FIT, program was reasonable based off of client status and fitness level. Specifically calculated target HR, a specific mode, specific duration, and specific days for activity
Program design Strength	Did not include all components of FIT	Included all components of FIT, program was reasonable based off of client status and fitness level	Included all components of FIT, program was reasonable based off of client status and fitness level. Specifically prescribed appropriate reps, sets and exercises
Program design flexibility	Did not include all components of FIT	Included all components of FIT, program was reasonable based off of client status and fitness level	Included all components of FIT, program was reasonable based off of client status and fitness level. Specifically prescribed appropriate time, reps, sets, and exercises

Total: \_\_\_\_\_

**Program Goal 3.2: Students will design exercise programs for athletic performance**

**Competency Level: Demonstrated Competence**

**Artifact: Strength and Conditioning Papers**

**Student's initials:** \_\_\_\_\_

<b>Indicator</b>	<b>Did Not Meet the Standard (1)</b>	<b>Acceptably Meets the Standard (2)</b>	<b>Comprehensively Meets the Standard (3)</b>
<b>Scientific</b>	This paper doesn't show significant scientific thought in the strength training and/or conditioning portion of the training program	Two or fewer mistakes in the training plan, but does not affect the overall effectiveness of the program.	Excellent scientific basis for the program; no fundamental mistakes in application of the science to the training plan.
<b>Organization</b>	This paper lacks a clear sense of direction. One or more cycles are missing and/or the transitions between cycles are missing.	The program has pre-season, in-season, and out-of-season cycles with only minor flaws in the transition between cycles.	The program has out-of-season, pre-season, in-season and post-season cycles with appropriate transitions between cycles.
<b>Training Load</b>	The training load for either the strength or condition portion is completely inappropriate for the athlete described.	The training load described is appropriate for the individual described with only minor flaws in the frequency, intensity, and volume of training prescribed.	Excellent program design with no flaws in the magnitude of the training load prescribed.

**Total Score:** \_\_\_\_\_

## Appendix 2: Student Data

	<u>AY '13</u>	<u>AY '14</u>	<u>AY '15</u>	<u>AY '16</u>	<u>AY '17</u>
Total enrollment in EXSS classes:	1,934	1,996	1,891	1,758	1,497
Total enrollment in ALL classes:	32,683	33,952	34,081	34,062	34,169
EXSS % of Total Enrollment:	5.92	5.88	5.55	5.16	4.38
Clinical Concentration Graduates:	27	53	20	48	62
Fitness Concentration Graduates:	6	11	4	7	8
Total Graduates in EXSS:	33	64	24	55	70

### Graduate Rates (Six-Year)

	<u>AY '07</u>	<u>AY '08</u>	<u>AY '09</u>	<u>AY '10</u>	<u>AY '11</u>
Entering Freshman Class:					
Institutional Graduation %:	50.29	56.75	53.01	53.95	59.65
Graduation in EXSS %:	45.45	26.92	30.03	41.18	43.14
Graduation in other major %:	15.15	19.23	18.18	11.76	13.73
Overall Graduation %:	60.60	46.15	48.48	52.94	56.86
Years to Graduate EXSS:	4.47	4.43	4.40	4.00	4.57
Years to Graduate Institutional:	4.53	4.36	4.39	4.32	4.30

### Declared Majors

	<u>AY '13</u>	<u>AY '14</u>	<u>AY '15</u>	<u>AY '16</u>	<u>AY '17</u>
Institutional # Declared Majors:	3,748	3,824	3,806	3,840	3,862
EXSS # Clinical Declared:	200	232	224	221	192
EXSS # Fitness Declared:	37	46	47	47	45
EXSS # Undeclared:	0	1	2	1	0
EXSS # Declared Majors:	237	279	273	269	237
EXSS % Overall Majors:	6.04	6.91	6.81	6.58	5.84
EXSS # Freshmen Majors:	34	61	38	35	34
% Overall Incoming Freshmen:	4.89	7.97	5.57	4.80	4.72

EXSS # Incoming Transfers:	28	46	37	32	29
% Overall Incoming Transfers:	7.07	10.60	8.83	8.12	6.56

<b><u>Student Race/Ethnicity</u></b>	<b><u>AY '13</u></b>	<b><u>AY '14</u></b>	<b><u>AY '15</u></b>	<b><u>AY '16</u></b>	<b><u>AY '17</u></b>
# American Indian/Alaskan Native:	1	0	0	0	0
# Asian:	4	4	6	6	5
# Black/African American:	11	22	26	31	27
# Hispanic:	15	25	25	32	27
# More Than One:	8	11	11	9	9
# Native Hawaiian/Pacific Islander:	0	0	0	0	0
# Unknown:	10	9	5	4	4
# White:	179	196	188	173	156
EXSS % Diverse:	17.9	24.0	26.6	31.1	30.4
Institutional % Diverse:	18.4	20.6	23.7	27.0	28.0

<b><u>Gender</u></b>	<b><u>AY '13</u></b>	<b><u>AY '14</u></b>	<b><u>AY '15</u></b>	<b><u>AY '16</u></b>	<b><u>AY '17</u></b>
# Female:	130	151	134	134	116
# Male:	98	116	127	121	112
EXSS % Female:	57.0	56.6	51.3	52.5	50.9
Institutional % Female:	54.2	55.1	54.8	53.4	52.4

<b><u>Retention Rates</u></b>	<b><u>AY '13</u></b>	<b><u>AY '14</u></b>	<b><u>AY '15</u></b>	<b><u>AY '16</u></b>	<b><u>AY '17</u></b>
% EXSS Retention	51.72	50.85	41.03	45.71	67.65
% Institutional Major Retention	62.52	62.15	58.75	62.36	66.09
% Retention Changed EXSS	18.18	15.25	20.51	20.00	8.82
% Retention Changed Institutional	15.56	15.19	16.11	12.55	12.40



**Graduate & Continuing Education: Undergraduate**

	<u>AY '13</u>	<u>AY '14</u>	<u>AY '15</u>	<u>AY '16</u>	<u>AY '17</u>
Total enrollment in EXSS classes:	281	163	180	161	186
Total enrollment in all classes:	3,879	4,015	4,103	3,750	3,510
% enrollment in EXSS classes:	7.24	4.06	4.39	4.29	5.30
Total enrollment in EXSS (extended) 0	0	0	33	0	24

**Graduate & Continuing Education: Graduate**

	<u>AY '13</u>	<u>AY '14</u>	<u>AY '15</u>	<u>AY '16</u>	<u>AY '17</u>
Total enrollment in EXSS classes:	1	0	3	1	0
Total enrollment in all classes:	3,443	3,345	3,548	3,965	4,715
% enrollment in EXSS classes:	0.03	0.00	0.08	0.03	0.00
Total enrollment in EXSS (extended) 0	0	0	0	0	0

## **Appendix 3: Faculty Data**

**Faculty demographic table**

**Faculty credential table**

**Curriculum Vitae of full-time faculty**

## FACULTY DEMOGRAPHIC DATA TABLE

<b>Demographic Faculty Summary</b>	<b>No. of Full Time Assigned to Unit</b>	<b>No. of Part Time Assigned to Unit</b>
Women	5	2
Men	4	5
<b><i>Ethnicity</i></b>		
White/Caucasian	9	7
Asian		
Hispanic/Latino		
Black/African American		
American Indian		
International or Other		
<b><i>Credentials – highest degree held</i></b>		
Bachelor's Degree		
Master's Degree		6
Doctorate	9	1
<b><i>Experience</i></b>		
0-3 years		1
4-7 years	2	3
8-11 years	2	1
12-15 years	3	
16-24 years	2	1
25+ years		1

## FACULTY CREDENTIAL TABLE

Name	Rank	Type of Academic Appointment TT, T, NTT	FT or PT	Highest Degree	Professional Registration Certification	FTE by Program	Very Brief description of Activity		
							Teaching	Scholarship	Service
Monica Maldari	Associate Professor	T	FT	EdD	ACSM RCEP, CES		Intro to EXSS, Special Populations, CV Physiology, Professional and Career Development, Health and Fitness Internship	Effectiveness of Health and Fitness Course	Various departmental and University committees
Lindsay Parisi	Assistant Professor	TT	FT	PhD			Exercise Physiology I and II, Human Motor Development, Health and Fitness, Internship	Lactate Threshold	Various departmental and University committees, STEM Living Learning Community coordinator
David Heikkinen	Associate Professor	T	FT	PhD	NSCA CSCS		Functional Anatomy, Strength and Conditioning, Biomechanics and Motor Control, Fitness Management, Health and Fitness	Sports Performance	

Tim Hilliard	Associate Professor	T	FT	PhD	NSCA CSCS		Functional Anatomy, Biomechanics and Motor Control, Research Methods, Health and Fitness	Body Composition	Various departmental and University committees
Jeff Godin	Associate Professor	T	FT	PhD	NSCA CSCS, ACSM EP		Fitness Management, Sport Nutrition, Health Promotion, Strength and Conditioning, Exercise Testing and Prescription, Health and Fitness	Sports Performance	Various departmental and University committees, department chair up to spring 2015
Jason Talanian	Associate Professor	T	FT	PhD			Professional and Career Development, Exercise Testing and Prescription, Sport Nutrition, Health and Fitness	Exercise and Performance	Various departmental and University committees
Karen Keenan	Assistant Professor	TT	FT	PhD	ATC		Intro to Exercise Science, Applied Nutrition, Human Motor Development, Health and Fitness	Health research mentor with MWCC HCOP grant, manuscript work on prior research	Various departmental and University committees
Danielle Wigmore	Professor	T	FT	PhD			Cardiovascular Physiology, Exercise Physiology I and II, Health and Fitness, Honors Wellness	Physical Activity and Health	Various departmental and University committees, department chair Spring 2015-present

Jessica Alsup	Assistant Professor	TT	FT	PhD			Introduction to Exercise Science, Exercise Physiology I and II, Special Populations, Human Motor Development, Sport Nutrition, Health and Fitness	Lactate Threshold	Various departmental and University committees, NEACSM Free Communications Committee
Robert Logan		NTT	PT	MS		0.5	Exercise, Nutrition and Heart Disease, Health and Fitness, Human Motor Development, Health Promotion	Bioinformatics and neuroprotection of urate	
Kyle Wilson		NTT	PT	MBA	NSCA CSCS	0.5	Health and Fitness		
Susan Sheridan		NTT	PT	MS		0.5	Health and Fitness; Exercise, Nutrition, and Heart Disease		
Martin Morock		NTT	PT	MS		0.74	Health and Fitness, Exercise Physiology lab, Exercise testing and prescription lab, strength and conditioning		
David Antaya		NTT	PT	PhD		0.08	First aid/CPR		
Christopher Kibler		NTT	PT	MBA		0.38	Health and Fitness		

# Jessica (Brown) Alsup

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New Ipswich NH 03071

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## EDUCATION

- Springfield College      Ph.D, Physical Education  
Specialization: Exercise Physiology  
Dissertation Title: “The Effect of Posture on Physiological Parameters in NCAA Division III College Field Hockey Players”  
Date of Graduation: August 2013
- Springfield College      MS, Exercise Physiology  
Thesis Title: “The Effect of Wearing a Cooling Vest Between Two Heated Exercise Bouts on Core Temperature”  
Date of Graduation: August 2012
- Plymouth State University      BS, Physical Education  
Concentration: Exercise Physiology and Applied Health Fitness  
Senior Research Project: “Caffeine’s Effects on Muscle Force Development”  
Date of Graduation: May 2009

## PROFESSIONAL POSITIONS HELD

### **Assistant Professor: Exercise and Sport Science**

Exercise and Sport Science Department  
Fitchburg State University, Fitchburg MA  
**September 2016- Present**

### **Assistant Professor: Exercise Science**

School of Education, Health and Human Performance  
Fairmont State University, Fairmont WV  
**August 2013- August 2016**

### **Graduate Assistant: Exercise Physiology Laboratory Coordinator**

School of Health, Physical Education and Recreation  
Department of Exercise Science and Sports Studies  
Springfield College, Springfield, MA  
**2012 – May 2013**

### **Graduate Assistant: Exercise Physiology**

School of Health, Physical Education and Recreation  
Department of Exercise Science and Sports Studies  
Springfield College, Springfield, MA  
**2011 - 2012**

**Adjunct Professor: School of Human Services**

Springfield College  
School of Human Services  
Springfield College, Springfield, MA  
**2012 – 2013**

**Graduate Assistant: Biology**

Biochemistry Department  
Springfield College, Springfield, MA  
**2009 – 2011**

**Research Technician**

Alpine Knee Clinic  
Holderness, NH  
**2008 – 2009**

**Personal Trainer- NSCA Certified**

The Works Family Health and Fitness Center  
Somersworth, NH  
**2006 - 2010**

**TEACHING EXPERIENCE**

**Fitchburg State University**

**Undergraduate courses:**

Introduction to Exercise Science (EXSS 1011)  
Health & Fitness (EXSS 1000)  
Exercise Response & Adaptation in Special Populations (EXSS 3600)  
Human Motor Development (EXSS 2500)  
Exercise Physiology II lecture / lab (EXSS 2072)  
Nutrition in Exercise and Sport (EXSS 2300)

**GCE courses:**

Health & Fitness Online (EXSS 1000)

**Fairmont State University**

**Undergraduate courses:**

Research Methodology (PHED 4400)  
Research Design (PHED 4410)  
Exercise Science Internship (PHED 4420)  
Clinical Applications of Exercise Physiology (PHED 3317)  
Fitness and Wellness Online (PHED 1100)

**Graduate courses:**



Seminar in Exercise Science (PHED 6480)  
Laboratory Techniques of Health Promotion/ Exercise Science (PHED 6405)

## **Springfield College**

### **Undergraduate courses:**

Exercise Physiology Laboratory (AEXS 315) *Graduate Assistant*  
Anatomy and Physiology I Laboratory (BIOL 132) *Graduate Assistant*  
Anatomy and Physiology II Laboratory (BIOL 133) *Graduate Assistant*  
Contemporary Issues in Human Biology (HUSB 254) *Adjunct Faculty*

### **Graduate course:**

Cardiovascular Physiology Laboratory (AEXS 603) *Graduate Assistant*

## **LABORATORY SKILLS**

Blood and urine analysis:

Vena-puncture

Capillary puncture

Blood assays: lactate, glucose, lipids and various hormones

Analysis of Hb and HCT

Urine specific gravity

Metabolic and cardiovascular analysis:

Calibration and operation of computerized metabolic cart system

ECG stress testing

Leg and arm ergometry

Velotron cycle simulation system

Thermodynamic analysis:

Skin and core thermal measures

Biomechanical analysis:

EMG

Biodex isokinetic dynamometer

Dart Fish

Body Composition Analysis:

Lange Caliper skinfold technique

Bioelectrical impedance

Hydrostatic weighing

Bod Pod

## **SCHOLARLY ACTIVITY**

### **Refereed Abstracts**

Hartley, K., Ryan, J. M., **Alsup, J.**, Shinich, A., Reneau, P. (2017) Beetroot Supplementation

Effects on Exercise Performance During Cycling and Oxidative Damage. *Medicine and Science in Sports and Exercise*, 49(5S), 939.

Ryan, J. M., Robinson, M., **Alsup, J.**, Shinich, A., Reneau, P (2017) The Effect of Caffeine and Pre workout Supplementation on Exercise Repetition during Sets and Muscular Endurance. *Medicine and Science in Sports and Exercise*, 49(5S), 295.

McKee, D., **Alsup, J.**, Reneau, P., Ryan, M. (2016). Preschoolers Increased their Heart Rate when Music is Played Halfway through a 30 Minute Play-Period. *Medicine and Science in Sports and Exercise*.

Ryan, M., Lego, J., **Alsup, J.**, Reneau, P. (2016). The Effects of Music and Sensory Deprivation on Exercise Cycling Performance. *Medicine and Science in Sports and Exercise*. 48(5S), 132.

Falkenklaus, J., **Alsup, J.**, Ryan, M., & Reneau, P. (2015). Effect of Caffeine and Rest Time on Repeated Sprint Running Performance. *Medicine and Science in Sports and Exercise*, 47(5), S376.

Mertens, E., D'Eon, S., Stroiney, D., **Alsup, J.** Matthews, T., & Paolone, V. (2015) Skinfold Thickness as a Predictor of 5k Performance for Trained, Female Runners. *Medicine and Science in Sports and Exercise*, 47(5), S116.

Laamann, L., **Brown, J.**, Pollard, N., D'Eon, S., Carney, L., Matthews, T., & Paolone, V. (2014). Barefoot versus shod Versus minimalist shoe effect on performance during a maximal treadmill running test. *Medicine and Science in Sports and Exercise*, 46(5), S732.

Mertens, E., D'Eon, S., Stroiney, D., **Brown, J.**, & Paolone, V. (2014). Physiological parameters for the prediction of 5k performance for female endurance runners. *Medicine and Science in Sports and Exercise*, 46(5), S730.

**Brown, J.**, Laamann, L., Ward, M., Mertens, E., Matthews, T. & Paolone, V. (2014). The effect of posture on physiological parameters in NCAA division III college field hockey Players. *Medicine and Science in Sports and Exercise*, 46(5), S539.

Van Langen, D., **Brown, J.**, Carmichael, R., Pollard, N., Schultz, S., Sheehan, D., Matthews, T. & Paolone, V. (2012). Menstrual cycle effect on metabolic acidosis during high intensity intermittent exercise. *Medicine and Science in Sports and Exercise*, 44(5), S706

**Brown, J. C.**, Laamann, L. R., Pollard, N. E., Shultz, S. L., Grannis, D. J., Matthews, T. D. & Paolone, V. J. (2012). The effect of wearing a cooling vest between two heated exercise bouts on core temperature. *Medicine and Science in Sports and Exercise*, 44(5), S322.

Pollard, N. E., **Brown, J. C.**, Laamann, L. R., Carmichael, R. D., Matthews, T. D. & Paolone, V. J. (2012). Effects of a carbohydrate containing beverage on thermoregulatory parameters during endurance exercise in a thermoneutral environment. *Medicine and Science in Sports and Exercise*, 44(5), S422.

## Presentations

**Alsup, J.**, Leary, J., Ryan, M. (2015, October). *Cardiovascular Health and Fitness*. Presentation at the Future of Health and Sports Conference, Fairmont WV.

**Brown, J.**, (2014, May). *The effect of posture on physiological parameters in NCAA Division III College Field Hockey Players*. Poster presented at the 61st Annual American College of Sports Medicine National Meeting, Orlando, FL.

**Brown, J. C.** (2012, May). *The effect of wearing a cooling vest between two heated exercise bouts on core temperature*. Poster presented at the 59th Annual American College of Sports Medicine National Meeting, San Francisco, CA.

**Brown, J. C.** (2011, October). *Female athletes and amenorrhea: a review*. PowerPoint presented at the Massachusetts Association for Health, Physical Education, Recreation and Dance Conference, Worcester, MA.

### **Professional Development**

2017 New England American College of Sports Medicine - Regional Chapter Meeting Providence, RI

2016 New England American College of Sports Medicine - Regional Chapter Meeting Providence, RI

2014 American College of Sports Medicine- National Meeting & World Congress on Exercise Is Medicine  
Orlando, FL

2012 American College of Sports Medicine- National Meeting & World Congress on Exercise Is Medicine  
San Francisco, CA

2011 New England American College of Sports Medicine - Regional Chapter Meeting Providence, RI

2011 American College of Sports Medicine- National Meeting & World Congress on Exercise Is Medicine  
Denver, CO

2010 New England American College of Sports Medicine - Regional Chapter Meeting Providence, RI

### **Committees**

NEACSM Free Communications committee 2017, 2018

### **Grants**

FSU Special Project Grants 2017-218

### **Certifications**

First Aid/ CPR/AED-American Heart Association

## **Current research projects**

A Comparison of Wearable Lactate Threshold Technology to Accepted Methods of Lactate Threshold Determination

## **SERVICE**

### **Fairmont State University**

#### **University**

Faculty Senate Executive Committee: Fall 2015-present

Faculty Senate: Fall 2014- present

Student Scholarship Committee: Spring 2014-present

Chair: Fall 2014- present

*Responsibilities:* Organize an event to showcase student scholarship.

Assessment Critical Friends Group: Summer 2014- present

*Responsibilities:* Provide support for creating and using Taskstream© for assessment.

Faculty Welfare Committee: Fall 2014 - present

*Responsibilities:* Recommend programs considered beneficial for the welfare of the faculty.

Academic Appeals Board: Fall 2014 - present

*Responsibilities:* Conduct impartial investigations of any charges by students of prejudicial or unfair evaluation and recommend appropriate action.

### **School of Education/ Health and Human Performance**

School of Education/ Health and Human Performance Dean Search Committee: Fall 2015

Physical Education Search Committee: Spring 2014

Outdoor Recreation Search Committee: Fall 2013

Student Success & Retention Committee: Fall 2013 –present

*Responsibilities:* Development and implementation of programs to improve student success and retention.

### **Fitchburg State University**

#### **Community**

Habitat for University FSU Faculty build – summer 2017

#### **University**

Technology Advisory Committee: Fall 2016- Spring 2018

Undergraduate Research Conference Judge: Spring 2017/ Spring 2018

First Year Experience committee: Fall 2017-Spring 2018

### **EXSS Department**

Co-Chair Faculty Search Committee: Fall 2017- 2018

EXSS Faculty Search Committee: Fall 2016- Spring 2017

Development of the EXSS Emergency Procedure: Spring 2017- Fall 2018

Development of the EXSS Laboratory safety manual: Spring 2018 – current

EXSS laboratory demonstration for accepted students' day: Spring 2017, Spring 2018

Assessment Committee: Fall 2016- present

Faculty advisor of EXSS club/ College Bowl- fall 2017

**JEFFREY T. GODIN**

52 Edward Drive  
N. Grafton, MA 01536

W: (978) 665-3716

H: (774) 571-0845

[jgodin@fitchburgstate.edu](mailto:jgodin@fitchburgstate.edu)

**EDUCATION**

**Graduate:**

University of Connecticut, Storrs, Connecticut  
Doctorate of Philosophy, Kinesiology: Exercise Science  
Dissertation Defense April 2002, Degree Conferred May 2002

Bridgewater State College, Bridgewater, Massachusetts  
Master of Science  
Physical Education: Human Performance/Fitness, May 1996

**Undergraduate:**

Bridgewater State College, Bridgewater, Massachusetts  
Bachelor of Science  
Physical Education: Exercise Science, May 1990

**Professional Certifications:**

American College of Sports Medicine: Certified Health Fitness Program Director (2002 – Present)  
American College of Sports Medicine: Certified Health Fitness Instructor (1991 – Present)  
National Strength and Conditioning Association: Certified Strength and Conditioning Specialist (1993 – Present)  
International Society for Sport Nutrition: Certified Sport Nutritionist (2006-Present)  
NSCA Fly Solo Mentor (2007-present)  
National Academy of Sports Medicine: Performance Enhancement Specialist (2013- present)  
National Academy of Sports Medicine: Corrective Exercise Specialist (2013- present)  
American Heart Association CPR/AED/ First Aid (1991 – Present)

**TEACHING/PROFESSIONAL EXPERIENCE**

**Associate Professor, Department of Exercise and Sport Science, September 2000 - Present  
Fitchburg State University, Fitchburg, MA**

**Courses Taught**

- EXSS 1000: Health and Fitness (3 credits)
  - o Presented lectures in health related components of physical fitness, fitness assessment, exercise programming, energy expenditure, and nutrition.
- EXSS| 2070: Exercise Physiology (4 credits)
  - o Presented lectures human systemic response to exercise and exercise training.
- EXSS 2300: Nutrition in Exercise and Sport (3 credits)
  - o Presented lectures in nutrition to support physical activity and exercise training.
- EXSS 3050: Adaptations (3 credits)

### Jeffrey T. Godin

- Presented lectures in an interdisciplinary course in biology and exercise physiology that integrates human adaptations to the environment and human adaptation to exercise.
- EXSS 3120: Scientific Foundations of Strength and Conditioning (3 credits)
  - Presented lectures in theoretical and practical aspects of strength and conditioning.
- EXSS 3300: Exercise Metabolism (3 credits)
  - Presented lectures on substrate metabolism during exercise and hormonal control of metabolism.
- EXSS 4040: Fitness Management (3 credits)
  - Presented lectures in planning, implementing, and evaluating fitness programs in the commercial setting.
- EXSS 3450: Exercise Testing and Prescription (4 credits)
  - Presented lectures and labs on the design and implementation of exercise testing protocols.
- EXSS 2050: Functional Anatomy (3 credits)
  - Presented labs and activities related to structure of the musculoskeletal system and how it function during human movement.

#### One Credit Activity Courses

- EXSS 1520: Diet , Exercise and Weight Control
- EXSS 1440: Body Shaping
- EXSS 1070: Introduction to Mountain Hiking
- EXSS 2080: Weight Training for Athletes
- EXSS 1400: Jogging: Theory and Practice

#### Program/course development

- Collaborated with faculty on the development of Exercise and Sports Science, Strength and Conditioning concentration, January 2018.
- Collaborated with faculty on the development of courses to supports Strength and Conditioning concentration, including, Practicum for Strength Training and Conditioning, Introduction to Sports Medicine. Assessments for Strength and Conditioning, January 2018
- Developed new online course Nutrition in Exercise and Sport, 3 credits, May 2013.
- Developed new online course, Exercise Nutrition and Heart Disease, 3 credits, May 2012.
- Work with Department members developing a proposal for new Exercise Science Major including the development of new courses and curriculum.
  - New courses accepted by Curriculum Committee and Board of Trustees, May 2001
  - New major accepted by Curriculum Committee and Board of Trustees, May 2001
  - New Major accepted by Board of Higher Education, November 2001
- Represented the Department during Recreation Center Grand Opening including a demonstration of metabolic testing in Exercise Physiology Laboratory.
- Modified the course Health and Fitness to fit the needs of athletes. Course was adapted to include human performance related material suitable for the Fitchburg State College student athlete.
- Developed new online course, Physiology of Endurance Sports Performance and Training, December 2008
- Developed new online course, Exercise, Nutrition and Heart Disease, May 2012

#### Department Chair, Department of Exercise and Sport Science Fitchburg State College, July 2008- December 2014

- Evaluated faculty effectiveness in teaching

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- Coordinated departmental meeting regarding, assessment, course development and curriculum changes
- Coordinated effort to incorporate curriculum changes in the major.
- Coordinated department self-study AY 2013-2014

**Fitness Director, Recreation Services, July 2000 – May 2004**

**Fitchburg State College, Fitchburg, MA**

- Developed fitness center policy and procedures manual.
- Developed fitness center staff training manual.
- Trained students as Fitness Center Attendants.
- Conducted Fitness Center orientations for Health & Fitness courses in the Exercise and Sport Science Department.
- Quality of Life and Wellness Program in conjunction with Nursing Department
  - o Developed exercise program for patients in program
  - o Provided in-service training for nurses supervising patients
  - o Coordinated health history assessment and physicians consent for participants participation
- Fitness Center Web Page
  - o Developed exercise manual for download from the web.
- National Sports and Fitness Day, Spring 2002, 2003, 2004
  - o Organized a recreation center event that included fitness testing, fitness marathon, group exercise, sport tournaments, and a rock wall climb challenge.
  - o Conducted in conjunction with Fitness Management course
  - o Worked with students on developing plan, marketing, and implementing the program
- Group Exercise Program
  - o Developed group exercise program including hiring and training instructors, developing and implementing classes for all participants with varied fitness levels and abilities, and campus wide promotion.

**Strength and Conditioning Coach, Recreation Services, July 2000 – May 2004**

**Fitchburg State College, Fitchburg, MA**

- Developed and implemented in-season and pre-season strength and conditioning programs for football, men and women's soccer, men's and women's basketball, field hockey, and volleyball.
- Developed and implemented pre-season performance related fitness assessment for baseball, women's soccer, women field hockey, and softball team.
- Developed and implemented pre-season strength and conditioning program for baseball team.
- Fitchburg State College Athletics Strength and Condition Web page
  - o Put strength and conditioning programs on the web available for athletes to download.

**Committee Work**

**Fitchburg State College, Fitchburg, MA**

- Fitchburg State College Human Subjects Committee AY 2004 – 2005, 2005 – 2006, 2008-2009
- Fitchburg State College Curriculum Committee AY 2005 – 2009



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- Fitchburg State College Athletics Hall of Fame, AY 2001 – 2002; 2002- 2003, 2003-2004, 2004 – 2005, 2005 - 2006
- Student Affairs, Professional Development Committee, September 2001 – 2002; 2002 – 2003; 2003-2004
- Fitchburg State College Academic Policies Committee AY 2001 - 2002
- Fitchburg State College Technology Advisory Committee AY 2002- 2003; 2003-2004
- Fitchburg State University NEASC Self Study, CO-Chair Standards 1-3, AY 2010-2011
- Fitchburg State University Strategic Planning- Academic Planning Subgroup AY2014 - current

#### **Directed Student Research Studies**

- Effect of sodium bicarbonate on peak power. Robert Logan, Spring 2007
- Physiological profile of mountain bike athletes, Derek Medeiros, Christopher Ashley, Fall 2009
- Effect of caffeine on peak power. Jenna Camilleri, Fall 2011, Spring 2012
- Effect of music tempo on running performance. Laura Shotwell, Olivia Amirault, Cathy Casavant, and Angela Johnson, Spring 2012
- Effect of Novel Group Exercise Program on Measures of Physical Fitness, Haley Stack, Mark Wegsnan, Michael Anderson, Adam Brown et al., Spring 2014.

#### **Strength and Conditioning Apprenticeships**

- Baseball, Jeff Jones, Fall 2004
- Ice Hockey, Devan McConnell, Spring 2007
- Women's Sports, Britaney Abraham, Spring 2007
- Football, Jonathan Sweeney, Fall 2007
- Baseball, Matthew Pizzi, Spring 2008
- Ice Hockey, Wayne Bonkowski, Fall 2009
- Women's Lacrosse, Victoria D'Amato Spring 2009
- Track and field, Raymond Palazzo, Spring 2010
- Women's Lacrosse, Constance Perry, Fall 2010
- Adult Fitness, Charles Kostopolous, Kevon Plouff, Fall 2010 & Spring 2011

#### **Director of Human Performance, Blackstone Valley Human Performance, January 2005 - 2015**

- Conduct physiologic assessment for endurance athletes, including VO<sub>2</sub>max, lactate threshold, metabolic efficiency, and resting metabolic rate protocols.
- Conduct health related fitness assessments for a variety of clientele interested in the health benefits of regular exercise
- Design and implement training programs for endurance athletes
- Design and implement strength and conditioning programs for ice hockey and football players
- Design and implement adult fitness programs for clientele interested in general fitness, weight loss, and good health.

#### **Written Certification Board of Directors, Strength and Conditioning Coach Certified, Collegiate Strength and Conditioning Coach Association, August 2009 – Present**

- Develop test questions for Strength and Conditioning Coach Certified examination
- Participated in three workshops with fellow committee members to review questions and authenticate the written examination for accreditation through the National Commission for Certifying Agencies. This work is ongoing.
- Develop continuing education materials for currently certified coaches.

Jeffrey T. Godin

- Contributed to the Strength and Conditioning Coach Certified certification becoming accredited through the Institute of Credentialing Excellence (ICE).

**Director, Spartan Coaching, October 2011 – Present**

- Developed new online course to educate personal trainers in the science and methodology of preparing individuals for mud and obstacle races, June 2018.
- Developed online course with advanced topics to educate personal trainers in the science and methodology of preparing individuals for mud and obstacle races, August, 2015.
- Developed online course to educate personal trainers in the science and methodology of preparing individuals for mud and obstacle races, June 2015.
- Developed two day educational workshop to educate personal trainers in the science and methodology of preparing individuals for mud and obstacle races (August, 2011).
- Conduct in class and online lectures and workshops related to the science and methodology of mud and obstacle race training.

**Graduate Assistant for the Center for Health Fitness, 1996 – July 2000**

**University of Connecticut, Storrs, Connecticut**

Director of Corporate Fitness/Wellness Center, Hamilton – Sundstrand, Windsor Locks, Connecticut, June 1999 – July 2000

- Supervise graduate assistants in the field of Fitness Management who are involved in the corporate fitness program. Additional responsibilities include: strategic planning for the development, implementation, and evaluation of programs, coordination of the maintenance of facilities, and ensuring customer satisfaction.

Lecturer and Laboratory Instructor, Fitness Management Program, Department of Sport, Leisure, and Exercise Science, Storrs, Connecticut, 1996 – July 2000.

- Fitness Management ESLE 259: Lectures on: “Marketing Fitness”, “Management”, “Exercise Psychology”, “Special Populations” and “Program Development”.
- Applied Anatomy and Kinesiology ESLE 262: Lectures on: “Upper Extremity”, “Lower Extremity”, and “Spine and Thorax”. Instructed lab sessions on: “Muscle Identification” and “Kinesiological Evaluation of Exercise and Sport”.
- Assessment of Physical Capacities ESLE 261 and ESLE 301: Instructed lab sessions in: submaximal cardiorespiratory assessment, body composition, and muscle fitness assessment in undergraduate and graduate courses.

Connecticut’s Ad Hoc Committee for Physical Fitness Member, 1996 – July 2000.

- Serve as a committee member for the development of a pilot project that has resulted in the implementation a new fitness assessment protocol in Connecticut public schools. Assist in the development of testing protocols and testing manual. Serve as a resource for physical educators in Connecticut.

Head Trainer, Joints in Motion, Southern New England Chapter of the Arthritis Foundation, Rocky Hill, Connecticut, Fall 1997 – July 2000.

- Developed training manual for the Southern New England Chapter Arthritis Foundation. Directly responsible for the planning and implementation of training program for Joints in Motion participants. Plan bi-weekly long runs for participants including training seminars. Coordinate activities of assistant trainers.

Processing Coordinator New England Chapter of the American College of Sports Medicine, NEACSM Chapter Office, Storrs, Connecticut, January 1998 – July 1999.

Jeffrey T. Godin

- Supervised the daily operations of the New England Chapter Office. Actively involved in the planning and coordination of Fall and Spring conferences and Executive Board Meetings.

Assistant Workshop and Certification Director, ACSM Health Fitness Instructor Certification, 1998 – 1999.

- Assisted the workshop and certification directors in the coordination of the workshop and certification exam

Personal Training Coordinator, Center for Health Fitness, Storrs, Connecticut, August 1996 – July 1999.

- Coordinated personal training activities for the Fitness for Life program. Responsibilities included: interviewing, hiring, and training of staff. Distributed incoming inquiries to qualified personal trainers and evaluated trainer's performance.
- Personal Training Workshop, Fall Semesters 1996 – 1998. Conducted workshop for undergraduate students in Fitness Management preparing them for careers in personal training.

**Strength and Conditioning Coach, July 1999 – 2000**

**Franklin High School Ice Hockey, Franklin, Massachusetts**

- Designed pre- and in-season training program for ice-hockey athletes. Conducted training sessions that included strength, plyometric, agility, anaerobic, and flexibility components. Conducted physical performance testing of athletes. Taught Olympic lifting techniques to upper level athletes.

**Graduate Assistant in Exercise Science, September 1994 – August 1995**

**Bridgewater State College, Bridgewater, Massachusetts**

- Assisted during laboratory classes including maximal and submaximal aerobic capacity assessment, hydrostatic weighing, measurement of lung volumes, and other health related fitness assessments. Maintained equipment in exercise physiology laboratory.

**Director of Personal Training/Assistant Fitness Director, June 1990 – July 1996.**

**Boston Athletic Club, South Boston, Massachusetts**

- Managed and supervised fitness instructors that served a membership of 3,000. Supervised the development of personal training staff including staff training and evaluation. Supervise the day-to-day activities of the fitness center. Participated in wellness/health fairs at local corporations as a representative of the Boston Athletic Club

**Strength and Conditioning Internship, May 1996 – August 1996**

**Boston University, Boston, MA**

- Studied the theory and practice of strength and conditioning under the guidance of head strength coach Mike Boyle. Implemented testing protocols and training programs for ice hockey, football, track and field, and field hockey collegiate athletes. Successfully practiced and performed the Olympic lifts. Taught Olympic lifting techniques to athletes.

**PROFESSIONAL PRESENTATIONS**

National Strength and Conditioning Association, National Conference; Strength and Conditioning for Obstacle Race Athlete. July, 2015

New England Chapter of the International Health and Racquet Sports Association, Obstacle Race Readiness. May, 2014.

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- New England Chapter of the American College of Sports Medicine. Coach versus Trainer: Not just sets and reps. November, 2014.
- IDEA, World Fitness Convention. The Seven Pillars of Spartan Coaching. Presented to 100 national and international personal trainers and fitness coaches. Anaheim, CA. August, 2014.
- Massachusetts Association for Clinical Exercise Physiology, Regional Conference. Cardiovascular Training in Health and Disease. Presented to 100 clinical exercise physiologists at Fitchburg State University, February, 2014.
- Spartan Race. Spartan Group X workshop and certification. A 16 hour workshop that included lecture and hands-on experience instructing personal trainers and coaches the Spartan Group X training system. Delivered multiple times through 2012-2013.
- New England Triathlon Symposium. Metabolic Efficiency. A one hour seminar presented to 50 multisport athletes and coaches. January, 2012
- New England Triathlon Symposium. Complex training for the endurance athlete. A one hour workshop presented to 50 multisport athletes and coaches. January, 2012
- Spartan Race. Spartan Race Coaching Certification. A two day workshop and certification to educate coaches and personal trainers on the knowledge, skills and abilities needed to train individuals for obstacle racing.
- New England Regional Chapter of the National Strength and Conditioning Association. A needs Analysis for Mud and Obstacle Racers. Presented to 40 Strength and Conditioning professionals. October, 2011.
- New England Triathlon Symposium. Nutrition Science: Applications for athletes. A one hour seminar presented to 50 multisport athletes and coaches. January, 2011
- New England Triathlon Symposium. Race Time: tapering for peak performance. A one hour workshop presented to 50 multisport athletes and coaches. January, 2011
- New England Health and Racquet Club Association Regional Conference. Perspective in the ultraendurance athlete: implications for diet and training. A one hour seminar presented to 25 fitness professionals. May, 2010.
- New England Multisport Expo. Fuel Up! A three hour workshop delivered to 25 endurance athletes. March, 2010.
- New England Triathlon Symposium. Exercise Physiology 101: Energy systems and performance. A one hour seminar presented to 50 multisport athletes and coaches. January, 2010
- New England Triathlon Symposium. Application of periodization principles in endurance athletes. A one hour workshop presented to 50 multisport athletes and coaches. January, 2010
- New England Multisport Expo. Fluid and electrolyte needs during training and racing. A one hour presentation delivered to 100 endurance athletes. March, 2009.
- New England Triathlon Symposium. Physiology of endurance training . A one hour seminar presented to 50 multisport athletes and coaches. February, 2009
- New England Triathlon Symposium. Strength training for endurance athletes. A one hour workshop presented to 50 multisport athletes and coaches. February, 2009.
- NIRSA Region1 presentation, Weight Loss supplements, A 1.5 seminar presented to recreation and fitness professionals. September 2008.
- Seminar Presented over the internet (WEBINAR), New Wave Strength Training, A two hour presentation delivered to 30 strength and conditioning professionals. August, 2008.
- New England Multisport Expo, Heart Rate Training and the Multisport Athlete. A one hour presentation delivered to 100 endurance athletes. March, 2008.
- Seminar Presented over the internet (WEBINAR), Golf and tennis training, A two hour presentation delivered to 30 strength and conditioning professionals. August, 2007.
- Seminar Presented over the Internet (WEBINAR), Last Chance Seminar: Peaking for endurance sports, a one hour presentation delivered to 25 athletes preparing for Lake Placid Ironman. July, 2007.

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- New England Multisport Expo, Dietary Supplementation and the multisport athlete. A one hour presentation delivered to 100 endurance athletes. March, 2007.
- American Council on Exercise, Certified Personal Trainer 2 day workshop - Boston, MA July 2006, Sixteen hour workshop presented to attendees preparing for ACE-CPT exam.
- National Strength and Conditioning Association, Certified Strength and Conditioning Coach 2 day symposium and workshop, Boston MA, July 2006. Sixteen hour workshop presented to attendees preparing for CSCS exam.
- American Council on Exercise, Certified Personal Trainer 2 day workshop - Boston, MA April 2006, Sixteen hour workshop presented to attendees preparing for ACE-CPT exam.
- National Strength and Conditioning Association, Certified Strength and Conditioning Coach 2 day symposium and workshop, Boston MA, March 2006. Sixteen hour workshop presented to attendees preparing for CSCS exam.
- American Council on Exercise, Certified Personal Trainer 2 day workshop - Boston, MA January 2006, Sixteen hour workshop presented to attendees preparing for ACE-CPT exam.
- American Council on Exercise, Certified Personal Trainer 2 day workshop - Boston, MA April 2005, Sixteen hour workshop presented to attendees preparing for ACE-CPT exam.
- Exercise Etc. Fitness Conference, Houston, TX March 2005, presented five 2 hour workshops titled: "Plyometrics", "Assisted Stretching", "Exercise and the Shoulder", "Advanced Training with Resistance Tubing" and "Medicine Ball Training".
- Exercise Etc. Fitness Conference, Los Angeles, CA, February 2005, presented five - 2 hour workshops titled: "Core Training", "Physiology of Strength Training", "Strength and Conditioning for Golf and Tennis", "Assisted Stretching" and "Strength and Conditioning for Skiing".
- National Strength and Conditioning Association, Certified Strength and Conditioning Coach 2 day symposium and workshop, Boston MA, January 2005. Sixteen hour workshop presented to attendees preparing for CSCS exam.
- American Council on Exercise, Certified Personal Trainer 2 day workshop, Boston, MA January 2005, Sixteen hour workshop presented to attendees preparing for ACE-CPT exam.
- Exercise Etc. Fitness Conference, Boston MA, November 2005, Presented four - 2 hour workshops titled: "Core Training", "Plyometrics", "Exercise and the Shoulder", and "Medicine Ball Training".
- Exercise Etc. Fitness Conference, Baltimore MD, September 2005, Presented four - 2 hour workshops titled: "Core Training", "Exercise and the Knee", "Exercise and the Shoulder", and "Medicine Ball Training".
- National Strength and Conditioning Association, Certified Strength and Conditioning Coach 2 day symposium and workshop, Alexandria VA, September 2004. Sixteen hour workshop presented to attendees preparing for CSCS exam.
- National Strength and Conditioning Association, Certified Strength and Conditioning Coach 2 day symposium and workshop, Boston MA, July 2004. Sixteen hour workshop presented to attendees preparing for CSCS exam.
- MAPHERD Regional Conference, Worcester MA, March 2004. Total Sports Conditioning: Conducting group exercise for athletes. Presented to Physical Education Professionals. Co-presented by student – Jeffrey Jones.
- NIRSA Region I Workshop Presentation. Providing community service through safe and effective strength programs for older adults. Waterville Valley, NH. December, 2002.
- New England Chapter of the American College of Sports Medicine regional Conference. Is open or closed kinetic chain resistance training better for improving physical performance in older adults? Providence, RI, November 2002.
- School Department, Milford, Connecticut. Inservice Workshop: "Operating a Fitness Facility in Public Schools", presented to physical educators, November 1999.

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- University of Connecticut, School of Education. “Physical Activity and Health”, presented to graduate students in Education, June 1999.
- Connecticut’s Alliance for Health, Physical Education, Recreation, and Dance. Regional Conference, “Connecticut’s Physical Fitness Assessment Program: Pilot Project”, November 1998.
- Naugatuck, Southbury, & Ledyard, Connecticut. “Connecticut’s New Physical Fitness Assessment Protocol” workshop presented to Connecticut physical educators throughout the state, July 1998.
- ACSM Health Fitness Instructor Workshop, University of Connecticut. “Applied Anatomy and Kinesiology”, June 1998.
- ACSM Health Fitness Instructor Workshop, University of Connecticut, Laboratory Instructor, “Submaximal Bike Test Administration”, 1996 – 1997.
- Connecticut’s Alliance for Health, Physical Education, Recreation, and Dance. Regional Conference, “Connecticut’s Physical Fitness Assessment Program Opinion Survey”, November 1997.
- School Department, West Hartford, Connecticut. Inservice Presentation: “Physiologic Differences Between Children and Adults” & “Physical Activity for Children and Youth”, presented to physical educators, September 1997.
- New England Regional Chapter of the American College of Sports Medicine Annual Conference, Free Communication presentation, “Connecticut’s Physical Fitness Assessment Program Opinion Survey”, October 1997.
- School Department, Hamden, Connecticut. “Youth Resistance Training” & “Youth Fitness Assessment”, presented to physical educators, August 1997.
- State Department of Corrections, Cheshire, Connecticut. “Applied Anatomy and Kinesiology”, “Progressive Resistance Training”, & “Programming for Special Populations”, presented to Dept. of Corrections Fitness Instructors, July 1997.
- School Department, Newington, Connecticut. Inservice Presentation. “Physical Fitness Assessment in Connecticut: Six Year Review” & “Physical Fitness Assessment Pilot Project”, presented to physical educators, December 1996.

### **PUBLICATIONS**

- Godin, J.T. (2012-2013). Spartan Coaching Certification Manual.
- Godin, J. T. (2002). Effect of open- and closed kinetic chain resistance training on physical performance in older adults. Dissertation, University of Connecticut.
- Chatterton, C. T., Camaione, D. N., Godin, J. T. (2001). Determinants of moderate-intensity physical activity in a work-site population. Abstract submitted to American College of Sports Medicine, National Conference, May.
- Schlicht J.S., Godin J.T., & Camaione D.N.. (1999). How to Help your Clients Stick with an Exercise Program: Building Self-efficacy to Promote Exercise Adherence. ACSM’s Health & Fitness Journal, 3, #6, 27 - 31.
- Camaione D.N., Godin J.T., Schlicht, J.S., & Chatterton C.T. (1997). Connecticut’s New Fitness Test Process. CAHPERD The Bulletin, 43, 9 – 10.
- Camaione D.N., Godin J.T., Schlicht, J.S., & Chatterton C.T. (1997). Connecticut’s Physical Fitness Assessment Program. CAHPERD The Bulletin, 43, 11 - 13.
- Godin J.T., Camaione D.N., & Chatterton C.T. (1997). Joints in Motion Marathon Training Manual, Southern New England Chapter of the Arthritis Foundation.

### **COMMUNITY SERVICE**

- Leukemia and Lymphoma Society; Volunteer coach for Leukemia Lymphoma Society.
- Fitchburg State College, Faculty Seminar Series, “Open and Closed Kinetic Chain Resistance Training and Physical performance in Older Adults”. February, 2006

Jeffrey T. Godin

- Fitchburg State College, Leadership Conference, “Stress management”, March 2006  
 Greenwich, Connecticut, Fire and Rescue – Conducted fitness assessment for fire and rescue candidates, June 2002.
- Multi-service Center, Leominster, MA – Presentation to senior group: Exercise and Osteoporosis, May 2002.
- Fitchburg State College, Leadership Conference – Presentation to students: Leadership through physical activity and wellness. April, 2002.
- Fitchburg State College, Health Fair – Presentation to students, faculty, and staff: Weight loss and dietary supplements. April 2002
- Fitchburg State College, Leadership Conference – Presentation to Students: Applying a Customer Service Frame of Mind in Your Everyday Life. April, 2003.
- Fitchburg State College, Professional Development – Presentation to Student Affairs Division: Physical Activity and Health. December 2003.
- SOAR Summer Advising 2002-2011
- Fitchburg State College Health Fair, September 2003, 2004, 2005, 2010
- Fitchburg State College Focus on Majors EXPO April 2004
- Exercise and Older Adults Seminars
- March 2003, Fitchburg Senior Center
  - January 2001, Fitchburg Senior Center
  - February 2001, Fitchburg Green Community living Center
  - June 2001, Friendship Club

**PROFESSIONAL CONFERENCES**

- Collegiate Strength and Conditioning Association, National Conference, Fort Worth, TX, May 2018
- Collegiate Strength and Conditioning Association, National Conference, Orlando, FL, May 2017
- IDEA Personal Trainers Conference, Bethesda, MD, February, 2017
- Collegiate Strength and Conditioning Association, National Conference, Nashville, TN, May 2015
- IDEA World Fitness Conference, Anaheim, CA, August 2014
- IDEA Personal Trainers Conference, Alexandria, VA February, 2014
- International Society for Sports Nutrition, National Conference, June 2013
- National Strength and Conditioning Association (NSCA) National Conference, Providence, RI, July 2012.
- IDEA World Fitness Conference, San Diego, CA, July 2012
- American College of Sports Medicine (ACSM) National Conference, Denver, CO. June, 2011.
- National Strength and Conditioning Association (NSCA) National Conference, Atlanta, GA July 2007
- American College of Sports Medicine (ACSM) National Conference, New Orleans, LA June 2007
- American College of Sports Medicine (ACSM) National Conference, Denver, CO June 2006
- International Society for Sports Nutrition (ISSN) national Conference, Las Vegas, NV July 2006
- NEACSM Annual Spring Conference, Concord, MA, 1998, 1999, 2005, 2006, 2008
- NEACSM Annual Fall Conference, Providence, RI, 1995 – 2012
- ACSM National Conference, Orlando, FL, 1998
- FACT/IDEA Personal Trainers Conference, Poughkipsee, NJ, 1996

Jeffrey T. Godin

- NEHRSA Regional Conference, various locations, MA, 1992 - 1995
- Sports One Personal Trainers Conference, New York, NY, 1994

**PROFESSIONAL MEMBERSHIPS**

- American College of Sports Medicine (ACSM)
- National Strength and Conditioning Association (NSCA)
- International Society for Sports Nutrition (ISSN)
- New England Chapter of the American College of Sports Medicine (NEACSM)
- International Dance and Exercise Association for Health and Fitness Professionals (IDEA)

**PROFESSIONAL ORGANIZATION APPOINTMENTS**

- Spartan Coaching, Director of Education (December 2011 – Present)
- Journal of the International Society for Sports Nutrition, Reviewer (January 2012 – present)
- Journal
- Collegiate Strength and Conditioning Coaches Association. Written Certification Executive Board (September 2009 – present)
- New England Regional Chapter of the American College of Sports Medicine. Executive Committee, Chair of Development (May 2004 – May 2008). 4 year appointment
- National Strength and Conditioning Association, Special Interest Group, Ice Hockey, Executive Committee Member. 2007-2011.



## Curriculum Vitae

### David Heikkinen

248 Rebecca Rd.  
Whitinsville, MA 01588  
(774) 644-9576  
dheikkin@fitchburgstate.edu

## EDUCATION

- Springfield College:** Springfield, MA 2012  
Ph.D. Exercise Physiology  
Dissertation: *Impact of Caffeine Ingestion on Circulating Growth Hormone and Insulin Like Growth Factor-1 levels during Endurance Training*
- University of Maine:** Orono, ME 2003  
M.S. Kinesiology; Exercise Science  
Thesis: *Physical Testing Characteristics and Technical Event Performance in Junior Alpine Ski Racers*
- University of Maine at Farmington:** Farmington, ME 1998  
B.S. Health

## ACADEMIC EXPERIENCE

- Fitchburg State University:** Fitchburg, MA Fall 2018 to present  
*Associate Professor:* Department of Exercise and Sports Science  
Teach Courses Titled:
- EXSS 1000 Health and Fitness
  - EXSS 2050 Functional Anatomy
  - EXSS 3120 Scientific Foundations of Strength Training
  - EXSS 4005 Biomechanics & Motor Control of Human Movement
  - EXSS 4041 Fitness Management
- Fitchburg State University:** Fitchburg, MA Fall 2012 to August 2018  
*Assistant Professor:* Department of Exercise and Sports Science  
Taught Courses Titled:
- EXSS 1000 Health and Fitness
  - EXSS 2050 Functional Anatomy
  - EXSS 2300 Nutrition in Exercise and Sport
  - EXSS 2500 Human Motor Development
  - EXSS 3020 Biomechanics of Sport

Curriculum Vitae: Heikkinen

- EXSS 3120 Scientific Foundations of Strength Training
- EXSS 4024 Motor Learning and Control of Human Movement
- EXSS 4041 Fitness Management
- EXSS 4095 Internship in Exercise Science

**Fitchburg State University:** Fitchburg, MA Fall 2008 to May 2012

*Adjunct Faculty:* Department of Exercise and Sport Science

Taught Courses Titled:

- EXSS 1000 Health and Fitness
- EXSS 2070 Exercise Physiology Laboratory
- EXSS 4041 Fitness Management

**Springfield College:** Springfield, MA Fall 2011

*Adjunct Faculty:* Department of Exercise Science and Sport Studies

Taught Course Titled:

- HLTH 261 Introduction to Nutrition

**Middlesex Community College:** Bedford, MA Spring 2005

*Adjunct Faculty:* Science Department

Taught Course Titled:

- SC 2114 Exercise Physiology

## RELATED WORK EXPERIENCE

**The Adirondack Club:** Franklin, MA November 2005 to August 2009

*Fitness Director:*

- Management and promotion of the Fitness Department
- Development and training of Staff
- Strength Coach to competitive junior USA Swimming and USTA Tennis Programs

**Fitness Together:** Westwood, MA May 2003 to November 2005

*Manager:*

- Management and promotion of the Personal Training studio
- Developed publicity, advertising, and marketing campaigns to promote the facility
- Design exercise programs for a wide variety of clientele ranging from senior exercise programs to competitive athletes

Curriculum Vitae: Heikkinen

***Carrabassett Valley Academy:*** Carrabassett Valley, ME 1999-2003

*Assistant Alpine Coach:* FIS Women/Development team

- Alpine Ski Coach- Athletes included Canadian and USA National team members and future NCAA All Americans
- Strength and Conditioning Coach
- Researched the physical testing protocol for more effective and time efficient techniques

***Brockton Public Schools:*** Brockton, MA Spring 1999

*Permanent Substitute Teacher:* Health Curriculum

- Long term substitute health teacher at both the North and South Junior High schools
- Instruction of Health curriculum

***Mountain Valley High School/Black Mountain:*** Rumford, ME 1998

*Head Alpine Ski Coach:*

- Conference Championship team- 2 athletes in the top 10 at the New England High School Championships

## FELLOWSHIPS

***Springfield College:*** Springfield, MA Fall 2010 to May 2012

*Research Assistant:* Department of Physical Therapy

## GRANTS

***Ruth Butler Grant*** Spring 2015

Fitchburg State University: Fitchburg, MA

\$810.00

***Graduate Student Research Fund Grant*** Summer 2011

Springfield College: Springfield, MA

\$3519.77

## PROFESSIONAL ASSOCIATIONS

***National Strength and Conditioning Association***

*Northeast Regional Coordinator:*

Oct. 2009 to July 2015

- Elected to organize Events and Clinics and provide guidance to the State Directors in the Northeast Region
- Serve as a spokesperson for the NSCA
- Member of Regional Coordinator & State/Provincial Director Committees
- Chair of Northeast Regional Coordinator Committee

Curriculum Vitae: Heikkinen

*Massachusetts State Director:* Aug. 2007 to April 2010

- Elected to interim term by State & Provincial Director's Committee
- Organize Events and Clinics and serve local membership

## **CERTIFICATIONS**

### ***National Strength and Conditioning Association***

*CSCS, \*D Certified Strength and Conditioning Specialist*

\* Recertified with Distinction in all reporting periods since 2009

### ***United States Ski Association***

*National Level 400 Coach Certified*

### ***Red Cross***

*CPR/AED certified*

## **PROFESSIONAL PRESENTATIONS**

Heikkinen, D. "Environmental Challenges: Athlete Safety and Coaching for Success in the Heat, Cold, and High Altitude" NSCA Regional Conference. Biddeford, ME. (2018, Dec. 2)

Heikkinen, D. "Talking to your athletes about diet and supplements in a World of misinformation" NSCA Regional Conference. Biddeford, ME. (2017, Dec. 3)

Heikkinen, D. "Training the Lower Back" NSCA Rhode Island State Clinic. Kingston, RI. (2015 Apr. 18)

Heikkinen, D. "Training Outside the Weight Room" NSCA Regional Conference. Fitchburg, MA. (2014 Oct. 5)

Heikkinen, D. "Training the Alpine Athlete" NSCA Regional Conference. Biddeford, ME. (2013 Oct. 12)

Heikkinen, D. "Training for the Reduction of Knee Injuries" NSCA Rhode Island State Clinic. Kingston, RI. (2013 Apr. 13)

Heikkinen, D. "Training for the Reduction of Knee Injuries" NSCA Northeast Regional Conference. Westfield, MA. (2011 Oct. 15)

Heikkinen, D. "Training for the Reduction of Knee Injuries" NEHRSA Spring Conference. Mashantucket, CT. (2011 May 21)

Curriculum Vitae: Heikkinen

Heikkinen, D. "Training for the Reduction of Knee Injuries" NSCA Northeast Regional Conference. Lebanon, NH (2010 Oct. 2)

Caulfield, S., Cooper, K., Heikkinen, D., McGrath, C., & Nutting, M. "*Training from the Ground up*" Club Industry East 2009. Boston, MA (2009 May 27)

Heikkinen, D. "*Training the Lumbo-Pelvic-Hip Complex for Performance Enhancement*" NSCA Northeast Regional 'Hands on' Clinic. Lebanon, NH (2008 Nov. 8)

Heikkinen, D. "*Training the Lumbo-Pelvic-Hip Complex for Performance Enhancement*" Symposium of Strength. Nashua, NH (2008 Sept. 27)

Heikkinen, D. "*Training the Lumbo-Pelvic-Hip Complex for Performance Enhancement*" NSCA Massachusetts State Chapter Meeting. Franklin, MA (2008 July 16)

## RESEARCH AND PUBLICATIONS

Valyo, M., Carmichael, R., Sotir, S., Alsup, J., Parisi, L., & Heikkinen, D.J. (2019). Physiological Characteristics of Youth and Junior Elite Triathletes and Competition Performance. *Manuscript in Preparation*.

Carmichael, R., Heikkinen, D.J., Mullin, E., & McCall, N.R. (2017). Physiological Responses to Cyclocross Racing. *Sports and Exercise Medicine*. (3)2: 74-80.

Carmichael, R., Heikkinen, D.J., & Mertens, E. (2015). Impact of Cycling Intensity on Cycle-run Transition in Female Triathletes. *Journal of Cycling and Science*. (4)1: 14-20.

Heikkinen, D. J., Carmichael, R., & Herrick, S. (2014). Impact of Caffeine Ingestion on Circulating Growth Hormone and Insulin Like Growth Factor-1 Levels During Endurance Exercise. *Journal of Strength and Conditioning Research*. 28(12): 103.

Heikkinen, D.J. (2008). Avoiding Knee Injuries in Alpine Ski Racing. Retrieved from [www.ski-race-coach.com](http://www.ski-race-coach.com).

Heikkinen, D.J. (2003). Physical Testing Characteristics of Junior Alpine Ski Racers (Master's Thesis, University of Maine)

## POSTER PRESENTATIONS

Heikkinen, D. J., Carmichael, R., & Herrick, S. Impact of Caffeine Ingestion on Circulating Growth Hormone and Insulin Like Growth Factor-1 Levels During Endurance Exercise. Poster session presented at: 37<sup>th</sup> Annual National Strength & Conditioning Association National Conference; 2014 July 10; Las Vegas, NV.

## Curriculum Vitae: Heikkinen

Carmichael, R., Heikkinen, D., & Mertens, E. Impact of Cycling Intensity on Cycle Run Transition. Poster session presented at: 60<sup>th</sup> Annual Meeting of the American College of Sports Medicine; 2013 May 29; Indianapolis, IN.

Chow, J., Heikkinen, D., Mertens, E., Matthews, T., & Paolone, V. Effects of Stretch Shortening Cycle Warm-Up on Cycling Performance in Females. Poster session presented at: 60<sup>th</sup> Annual Meeting of the American College of Sports Medicine; 2013 May 29; Indianapolis, IN.

### **HONORS & AWARDS**

2015 National Strength & Conditioning Association 38<sup>th</sup> Annual National Conference Awards Banquet

Recognition for Service and Outstanding Leadership

### **INTERESTS**

Member New England Masters Skiing & United States Ski Association (USSA)

-United States Ski Association Masters National Speed Series

Top 3 National age group ranking 2009, 2013, 2015

-2009 United States Ski Association Masters National Championships

Silver Medal Downhill event Class 2 (30-34 age group)

-2014 & 2015 NASTAR Eastern Regional Championships

Gold Medal Giant Slalom event Mens 35-39 age group

## Timothy S. Hilliard, PhD, CSCS

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*Exercise & Sport Sciences Department*

*155 North Street, Rm 108*

*Fitchburg State University*

*Fitchburg, MA 01420*

**Office: (978) 665-3671**

**thilliar@fitchburgstate.edu**

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### Education

1995

**PhD**

Exercise Science  
University of Massachusetts  
Amherst, MA

1984

**BA**

Public Affairs/Journalism  
Keene State College  
Keene, NH

### Teaching Experience

#### **Associate Professor**

Department of Exercise & Sport Sciences  
Fitchburg State University (September, 2005 - present)

- \*\* Biomechanics & Motor Control of Human Movement
- \*\* Biomechanics of Sport
- \*\* Cardiovascular & Electrophysiology
- \*\* Functional Anatomy
- \*\* Health & Fitness
- \*\* Introduction to Research in Exercise Science
- \*\* Introduction to Exercise Science
- \*\* Motor Learning & Control of Human Movement
- \*\* Scientific Foundations of Strength Training & Conditioning

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#### **Assistant Professor**

Department of Physical Therapy  
Northeastern University (September 1996 - 2004)

- \*\* Advanced Clinical Processes -- Motor Control (graduate)
- \*\* Research for Physical Therapists (undergraduate/graduate)
- \*\* Clinical Kinesiology (undergraduate)
- \*\* Pathokinesiology (undergraduate)

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#### **Lecturer**

Department of Exercise & Sport Sciences  
The University of Arizona (August, 1994 - July, 1996)

- \*\* Biomechanics of Human Motion (undergraduate/graduate)
- \*\* Neuromechanical Kinesiology (undergraduate/graduate)
- \*\* Scientific Methods and Professional Preparation (undergraduate)
- \*\* Functional Kinesiology (undergraduate)
- \*\* Introduction to Exercise Science (undergraduate)

## Peer-Reviewed Publications

- Wilmarth, MA and Hilliard TS. Measuring Head Posture via the Craniovertebral Angle. *Orthopaedic Physical Therapy Practice*. 14:1; 13-15. 2002
- Judith D. Schaechter, Eduard Kraft, Timothy S. Hilliard, Thomas Benner, Seth Finklestein, Bruce R. Rosen, Steven C. Cramer. Motor Recovery and Cortical Reorganization after Constraint-Induced Movement Therapy in Stroke Patients: a Preliminary Study. *Neurorehabilitation and Neural Repair*. 16:4; 326-338. 2002
- Wilmarth, MA and TS Hilliard. Craniovertebral Angle Following Backpack Loading. *The Journal of Orthopaedic and Sports Physical Therapy*. 32:1; A-40, January, 2002.
- Garber, M, Aaron, R, Hilliard, T. Localized Impedance of Muscle: Effects of Resistance Training. *Physical Therapy*. 81:5; A49. May, 2001
- T.S. Hilliard and J.D. Schaechter. Improved Motor Function and Muscle Activation Following Constraint-Induced Movement Therapy. 33:5; suppl; May, 2001 *Medicine and Science in Sports and Exercise*.
- Timothy S. Hilliard, Andrew M. Weiner, Jennifer L. Cann and Vincent P. Simmarano. Age & Gender Differences in Lower Extremity Control Descending Stairs. *Research Quarterly for Exercise & Sport*. 72:1 suppl; March, 2001
- Hilliard, Timothy S, and Maryann Wilmarth. Intrarater Reliability Of A Hand Held Device Used To Measure Head Posture and Cervical Curvature. *Medicine and Science in Sports and Exercise*. 32:5 suppl; May 2000.
- J.D. Schaechter, E. Kraft, T. Hilliard, B.R. Rosen and S.C. Cramer. Motor Recovery After Stroke Is Associated With Changes In Brain Activity Patterns. *Society of Neuroscience*. 25:385; 1999
- Kroll, Walter P., Jeffrey C. Ives, and Timothy S. Hilliard. Gender and Age Effects in Rapid Movement Control. *Medicine and Science in Sports and Exercise*. 28:5 suppl; May 1996.
- Hilliard, Timothy S., and Walter P. Kroll. Characteristics of Young and Elderly Females During Rapid Limb Movement. *Medicine and Science in Sports and Exercise*. 28:5 suppl; May 1996.
- Hilliard, Timothy S., and Walter P. Kroll. Retention of Rapid Movement Kinematic and Electromyographic Practice Improvements in Young and Elderly Women. *Research Quarterly for Exercise & Sport*. 67:1 suppl; 1996
- Hilliard, Timothy S., and Walter P. Kroll. EMG Power Spectrum Analysis During Fatiguing Maximal Isometric Wrist Flexion Contractions. *Medicine and Science in Sports and Exercise*. 25:5 suppl; May 1993.
- Hilliard, Timothy S., and Walter P. Kroll. EMG Power Spectrum Analysis Based on Initial Strength Level During Maximal Isometric Wrist Flexions. *Research Quarterly for Exercise & Sport*. 64:1 suppl; 1993



## **Presentations at International Conventions**

A Pilot Study: Development Of A Model To Predict Localized Muscle Fatigue During Hand-Intensive Work. Presented at *International Society of Biomechanics and Sport* International Convention, Amherst, MA, July 1993

## **Presentations at National Conventions**

Craniovertebral Angle Following Backpack Loading. Presented at *American Physical Therapy Association* Combined Sections Meeting, Boston, MA, February, 2002

Improved Motor Function And Muscle Activation Following Constraint-Induced Movement Therapy. Presented at *The American College of Sports Medicine* National Convention, Baltimore, MD, May 2001

Age & Gender Differences in Lower Extremity Control Descending Stairs. Presented at *American Alliance of Health, Physical Education, Recreation & Dance* National Convention, Cincinnati, OH, March, 2001

Intrarater Reliability Of A Hand Held Device Used To Measure Head Posture and Cervical Curvature. Presented at *The American College of Sports Medicine* National Convention, Indianapolis, IN, May 2000

Gender and Age Effects in Rapid Movement Control. Presented at *American College of Sports Medicine* National Convention, Cincinnati, OH, May 1996

Characteristics Of Young And Elderly Females During Rapid Limb Movement. Presented at *American College of Sports Medicine* National Convention, Cincinnati, OH, May 1996

Retention of Rapid Movement Kinematic and Electromyographic Practice Improvements in Young and Elderly Women. Presented at *American Alliance of Health, Physical Education, Recreation & Dance* National Convention, Atlanta, GA, March, 1996

EMG Power Spectrum Analysis During Fatiguing Maximal Isometric Wrist Flexion Contractions. Presented at *American College of Sports Medicine* National Convention, Seattle, WA, May 1993.

EMG Power Spectrum Analysis Based on Initial Strength Level During Maximal Isometric Wrist Flexions. Presented at *American Alliance of Health, Physical Education, Recreation & Dance* National Convention, Washington, DC, March, 1993.

## **Presentations at Regional Conventions**

*Strength & Conditioning by Discipline for High School Track Athletes.* Invited Presentation at Massachusetts State Track Coaches Association Clinic, Boston, MA 2015

*National Strength & Conditioning Association Northeast Regional Exam Prep.* Invited Presentation on Biomechanics & Program Design, Fitchburg, MA 2014

*Designing & Implementing Varied Warm-Up Protocols for a High-School Track Team.* Invited Presentation at National Strength & Conditioning Association Northeast Regional annual conference, Fitchburg, MA 2014

*Strength & Conditioning by Discipline for High School Track Athletes.* Invited Presentation at Massachusetts State Track Coaches Association Clinic, Boston, MA 2014

*Strength & Skill: Nervous System Phenomena.* Invited Presentation at York State convention of the *Alliance of Health, Physical Education, Recreation & Dance*. November, 1999

## **Institutional Service**

### Exercise & Sport Sciences Department

All University Curriculum Committee (2017-18)  
Center for Teaching & Learning Advisory Committee (2013-2014)  
EXSS Faculty Search Committee (2005-present)  
EXSS Academic Standing Committee (2007-present)  
Faculty Advisor Rugby Club (2015)  
Honors Convocation  
Human Subjects Committee (2005-2007)  
Technology Advisory Committee (2011-2013)  
Winter Commencement  
Spring Open House  
Strategic Planning Financial Sub-Group Committee (2014)  
Undergraduate Research Conference Committee (2015-2016)  
Undergraduate Research Conference Judge (2014, 2018)

### Active Member in Professional Organizations

American College of Sports Medicine  
Massachusetts State Track Coaches Association  
National Strength & Conditioning Association  
North American Society for Psychology of Sport and Physical Activity  
USA Cycling  
USA Track & Field Association

## BIOGRAPHICAL

**Name:** Karen A. Keenan

**Birth Place:** Westerly, Rhode Island

**Citizenship:** United States

**Home Address:**

204 Barton Road  
Stow, MA 01775  
(C) 412-801-1383  
karenannkeenan@gmail.com

**Business Address:**

Exercise and Sports Science Department  
Fitchburg State University  
155 North Street  
Fitchburg, MA 01420  
(O) 978-665-3304  
kkeenan5@fitchburgstate.edu

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### EDUCATION and TRAINING

**UNDERGRADUATE:**

1989-1993	University of New Hampshire Durham, New Hampshire	Bachelor of Science 1993	Physical Education: Athletic Training
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**GRADUATE:**

1993-1995	University of North Carolina Chapel Hill, North Carolina	Masters of Arts 1995	Physical Education, Exercise, and Sport Science
2008-2014	University of Pittsburgh Pittsburgh, Pennsylvania	Doctor of Philosophy April 2014	Rehabilitation Science: Sports Medicine & Nutrition

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### APPOINTMENTS and POSITIONS ACADEMIC

2005-2008	Heidelberg College Tiffin, Ohio	Athletic Trainer, Clinical Instructor, and Lecturer Academic Advisor (Undergraduate Students) (Department of Athletic Training)
2008-2013	University of Pittsburgh Pittsburgh, Pennsylvania	Graduate Student Researcher (Neuromuscular Research Laboratory, School of Health and Rehabilitation Science)
2013-2018	University of Pittsburgh Pittsburgh, Pennsylvania (Working remotely since 2014)	Assistant Professor (School of Health and Rehabilitation Science, Department of Sports Medicine and Nutrition, Neuromuscular Research Laboratory)
Fall 2017- Spring 2018	Fitchburg State University Fitchburg, Massachusetts	Adjunct Faculty (Exercise and Sports Science Department)
Fall 2018- Present	Fitchburg State University Fitchburg, Massachusetts	Assistant Professor (Exercise and Sports Science Department)

**NON-ACADEMIC:**

1995-1996	College of the Holy Cross Worcester, Massachusetts	Athletic Trainer
1996-1998	Kenyon College Gambier, Ohio	Athletic Trainer/ Interim Head Athletic Trainer
1998-2000	Central Michigan University Mount Pleasant, Michigan	Athletic Trainer and Lecturer
2000-2001	University of Maine Orono, Maine	Athletic Trainer and Lecturer
2001-2003	Ventiv Health US Sales Bangor, Maine	Pharmaceutical Sales Representative
2003-2004	Futures Gymnastics Mississauga, Ontario, Canada	Gymnastics Coach and Supervisor

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**CERTIFICATIONS and LICENSURE**

National Athletic Trainers' Association	1993-present
CPR/AED for the Professional Rescuer and Healthcare Provider (American Red Cross)	Current

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**MEMBERSHIPS in PROFESSIONAL and SCIENTIFIC SOCIETIES**

National Athletic Trainers' Association	1993-present
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**ACADEMIC COMMITTEES**

Departmental Assessment Committee Exercise and Sports Science Department Fitchburg State University	2018
Library Advisory Board Fitchburg State University	2018
Parking Committee (Fitchburg State University) Fitchburg State University	2018

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**HONORS**

School of Health and Rehabilitation Sciences Research Development Fund University of Pittsburgh Pittsburgh, PA	2010
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Freddie H. Fu, MD Graduate Research Award Pittsburgh, PA	2010, 2012
Bruce Baker Education Travel Fund Recipient School of Health and Rehabilitation Sciences University of Pittsburgh Pittsburgh, PA	2012
Graduate and Professional Student Association Travel Award University of Pittsburgh Pittsburgh, PA	2012

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### PUBLICATIONS and PRESENTATIONS

1. **Keenan, KA.** Chronic fatigue syndrome. *Sports Medicine Update*. 1994; 9(3).
2. Abt JP, Sell TC, Nagai T, Deluzio JB, **Keenan K**, Rowe R, McGrail MA, Cardin S, Lephart SM. Relationship between the Army Physical Fitness Test and laboratory-based physiological and musculoskeletal assessments. 2009 American College of Sports Medicine Annual Meeting; May 27-30, 2009; Seattle, WA.
3. Lovalekar MT, Abt JP, Sell TC, Lephart SM, **Keenan K**, House AJ, Zimmer AC, Hovey GD. Assessing the validity of self-reported injury history among U.S. military personnel. APHA Annual Meeting; November 7-11, 2009; Philadelphia, PA.
4. House AJ, Abt JP, Stone DA, Akins JS, Pederson JJ, **Keenan KA**, Lephart SM. Injection of the lateral ankle ligaments with local anesthetics does not inhibit muscle activity. 2010 Annual Meeting and Clinical Symposia of the NATA; June 22, 2010; Philadelphia, PA.
5. **Keenan KA**, Akins JS, Dugan B, Abt JP, Sell TC, Lephart SM. Optimal number of trials required to obtain reliable plantar pressure measurements utilizing a two-step approach. 2010 Annual Meeting and Clinical Symposia of the NATA; June 22, 2010; Philadelphia, PA.
6. Stone DA, Abt JP, House AJ, **Keenan KA**, Pederson JJ, Akins J, Lephart SM. Local anesthetics use following a lateral ankle sprain does not suppress muscle activity. 2010 AOSSM Annual Meeting; July 15-18, 2010; Providence, RI.
7. **Keenan KA**, Akins JS, Dugan BP, Francis M, Abt JP, Sell TC, Lephart SM. Reliability of dynamic foot geometry assessment using a pedobarographic platform and a two-step approach. *Clinical Biomechanics* (Bristol, Avon). 2011; 26(6): 679-680.
8. Akins JS, **Keenan KA**, Dugan BP, Francis M, Abt JP, Sell TC, Lephart SM. Comparison of plantar pressure measurements obtained during barefoot and shod conditions. *Clinical Biomechanics* (Bristol, Avon). 2011; 26(6): 696-697.

9. Akins JS, **Keenan KA**, Dugan BP, Francis M, Abt JP, Sell TC, Lephart SM. Reliability of in-sole plantar pressure using simple and detailed masks of the forefoot, midfoot, and hindfoot. *Clinical Biomechanics* (Bristol, Avon). 2011; 26(6): 695.
10. **Keenan KA**, Sell TC, Abt JP, Crawford K, House AJ, Smalley BW, Abt JP, Cardin S, Lephart SM. Physiological Differences between male and female Army Soldiers matched on age and years of service. 2011 American College of Sports Medicine; May 31-June 4; Denver, CO.
11. **Keenan KA**, Abt JP, Sell TC, Nagai T, House AJ, Deluzio JB, Smalley BW, Lephart SM. Strength differences between male and female Soldiers of the 101st Airborne Division (Air Assault). 2011 Annual Meeting and Clinical Symposia of the NATA; June 19-22; New Orleans, LA.
12. Akins JS, **Keenan KA**, Sell TC, Abt JP, Lephart SM. Test–retest reliability and descriptive statistics of geometric measurements based on plantar pressure measurements in a healthy population during gait. *Gait & Posture*. 2012; 35(1): 167-169.
13. Clark NC, **Keenan KA**, Abt JA, Sell TC, Nagai T, Deluzio JB, Lovalekar MT, McCord LJ, Wirt MD, Lephart SM. Clinically significant side-to-side lower extremity strength asymmetries in US Army 101st Airborne Soldiers. 2012 American College of Sports Medicine; May 29 – June 2, 2012; San Francisco, CA.
14. **Keenan KA**, Chu YC, Pederson JP, Abt JP, Sell TC, Lovalekar MT, Lephart SM. Kinesio<sup>®</sup>tape application does not improve shoulder proprioception or strength in healthy, physically active participants. 2012 National Athletic Trainer’s Association Annual Meeting and Clinical Symposia; June 26-29, 2012; St. Louis, MO.
15. Pederson JJ, Abt JP, **Keenan KA**, Sell TC, Stone DA, Lovalekar MT, Lephart SM. Ankle questionnaires correlate with dynamic postural stability in subjects with functional ankle instability. 2012 National Athletic Trainer’s Association Annual Meeting and Clinical Symposia; June 26-29, 2012; St. Louis, MO.
16. Pederson JJ, Abt JP, **Keenan KA**, Sell TC, Stone DA, Lovalekar MT, Lephart SM. Altered ground reaction forces during anterior jump landing in subjects with functional ankle instability. 5<sup>th</sup> International Ankle Symposium; October 17-20, 2012; Lexington, KY.
17. Stone DA, Abt JP, House AJ, Akins JA, Pederson JJ, **Keenan KA**, Lephart SM. Local anesthetics use does not suppress muscle activity following an ankle injection. *Knee Surgery, Sports Traumatology, Arthroscopy*. 2013; 21(6): 1269-1278.
18. Lovalekar M, Abt JP, Sell TC, **Keenan K**, Zimmer A, Lephart SM, FACSM. Descriptive epidemiology of musculoskeletal injuries in Naval Special Warfare Personnel. 2013 American College of Sports Medicine Annual Meeting; May 28 – June 1, 2013; Indianapolis, IN.
19. Nagai T, Abt JP, Sell TC, **Keenan KA**, Smalley BW, Wirt MD, Lephart SM. Comparison of trunk and hip strength and flexibility between pilots with and without a self-reported history of low back pain. National Athletic Trainers Association Annual Meeting; June 24-27, 2013; Las Vegas, NV.

20. Varnell MS, McFate DA, **Keenan KA**, Heebner NR, Salesi T, Csonka J, Kido Y, Schreppel B, Sell TC. The effect of intrinsic musculoskeletal characteristics on shoulder complex injury in collegiate baseball and softball players. National Athletic Trainers' Association Annual Meeting; June 24-27, 2013; Las Vegas, NV.
21. **Keenan KA**, Akins JS, Varnell MS, Abt JP, Sell TC, Lovalekar MT, Lephart SM. Kinesiology taping does not improve shoulder proprioception, shoulder strength, or scapular kinematics in healthy or shoulder impingement subjects: A preliminary report. National Athletic Trainers' Association Annual Meeting; June 24-27, 2013; Las Vegas, NV.
22. Nagai T, Allison KF, **Keenan KA**, Abt JP, Sell TC, Smalley BW, Wirt MD, Lephart SM. Gender differences in modifiable musculoskeletal characteristics in US Army helicopter pilots. Aerospace Medical Association Annual Meeting; May 11-15, 2014; San Diego, CA.
23. Sell MA, Abt JP, Sell TC, **Keenan KA**, Allison KF, Lovalekar MT, Lephart SM. The development and assessment of core strength clinical measures: The reliability and validity of medicine ball toss tests. National Athletic Trainers' Association Annual Meeting; June 25-28, 2014; Indianapolis, IN.
24. Abt JP, Sell TC, Lovalekar M, **Keenan KA**, Bozich, A, Morgan J, Kane S, Benson P, Lephart SM. Injury epidemiology of US Army Special Operations. *Military Medicine*. 2014; 179(10): 1106-1112.
25. Allison KF, **Keenan KA**, Sell TC, Abt JP, Nagai T, Deluzio J, McGrail Mark, Lephart SM. Musculoskeletal, biomechanical, and physiological sex differences in the US military. US Army Medical Department Journal. 2015; April-June: 12-22.
26. **Keenan KA**, Varnell MS, Sell TC, Abt JP, Lovalekar MT, Lephart SM. The relationship among trunk strength, trunk power, and knee kinematics during a stop jump-cut maneuver. National Athletic Trainers' Association Annual Meeting; June 23-26, 2015; St. Louis, MO.
27. Sell MA, Varnell MS, **Keenan KA**, Abt JP, Sell TC, Lephart SM. The relationship between trunk kinematics and the dynamic postural stability index. National Athletic Trainers' Association Annual Meeting; June 23-26, 2015; St. Louis, MO.
28. Chu Y, **Keenan K**, Allison K, Lephart S, and Sell T. The positive correlation between trunk, leg, and shoulder strength and linear bat velocity at different ball locations during the baseball swing in adult baseball players. *Isokinetics and Exercise Science*. 2015; 23(4): 237-244.
29. Sell MA, Abt JP, Sell TC, **Keenan KA**, Allison KF, Lovalekar MT, Lephart SM. Reliability and validity of medicine ball toss tests as clinical measures of core strength. *Isokinetics and Exercise Science*. 2015; 23(3): 151-160.
30. Lovalekar M, Abt J, Sell T, Morgan P, Hendershot R, **Keenan K**, Beals K, Lephart S. Descriptive epidemiology of unintentional musculoskeletal injuries among Naval Special Warfare Combatant-Craft Crewmen. 143rd Annual Meeting & Exposition of the American Public Health Association; October 31 - November 4, 2015; Chicago, IL.

31. Nagai T, Abt JP, Sell TC, **Keenan KA**, Clark NC, Smalley BW, Wirt MD, Lephart SM. Lumbar spine and hip flexibility and trunk strength in helicopter pilots with and without low back pain history. *Work*. 2015; 52(3): 715-722.
32. Parr JJ, Clark NC, Abt JP, Kresta JY, **Keenan KA**, Kane SF, Lephart SM. Residual impact of previous injury on musculoskeletal characteristics in Special Forces Operators. *Orthopaedic Journal of Sports Medicine*. 2015; 3(11): 1-7.
33. Varnell M, **Keenan K**, McFate D, Csonka J, Salesi K, & Sell T. Musculoskeletal characteristics of the dominant shoulder complex between intercollegiate baseball and softball pitchers and position players. *Athletic Training and Sports Health Care*. 2016; 8(2): 70-81.
34. Lovalekar M, Abt JP, Sell TC, Nagai T, **Keenan K**, Beals K, Lephart SM, Wirt MD. Descriptive epidemiology of musculoskeletal injuries in the Army 101st Airborne (Air Assault) Division. *Military Medicine*. 2016; 181(8): 900-906.
35. Nagai T, **Keenan KA**, Abt JP, Sell TC, Smalley BW, Wirt MD, Lephart SM. A comparison of cervical and trunk musculoskeletal characteristics between female and male Army helicopter pilots. *International Journal of Aviation, Aeronautics, and Aerospace*. 2016; 3(3).
36. Abt J, Heebner N, **Keenan KA**, Lambert B, Nagai T, Royer S, Williams N, Winters JD, Lephart S. Comparison of physical and physiological characteristics based on injury history. 2016 American College of Sports Medicine Annual Meeting; May 31 – June 4, 2016; Boston, MA.
37. **Keenan KA**, Allison KF, Frame M, Lovalekar MT, Beals K, Weinberg AM, Coleman LC, Nindl BC. Better fitness is related to lower injury risk in male and female Marines during integrated training. 2016 Military Health System Research Symposium; August 15 – 18, 2016; Kissimmee, FL.
38. Allison KF, **Keenan KA**, Frame M, Lovalekar MT, Beals K, Weinberg AM, Coleman LC, Nindl BC. Body composition and anthropometric variables are associated with better physiological and musculoskeletal performance in female Marines. 2016 Military Health System Research Symposium; August 15 – 18, 2016; Kissimmee, FL.
39. Perlsweig KA, **Keenan KA**, Parr J, Lovalekar MT, Beals K. Musculoskeletal injury epidemiology of the Naval Special Warfare Operator and student. 2016 Military Health System Research Symposium; August 15 – 18, 2016; Kissimmee, FL.
40. Eagle SR, **Keenan KA**, Lovalekar M, Nagai T, Morgan PM, Beals K. Special Warfare Combatant Crewmen demonstrate diminished cervical strength and range of motion compared to Crewmen Qualification Students. 2016 Military Health System Research Symposium; August 15 – 18, 2016; Kissimmee, FL.
41. Nagai T, Abt JP, Sell TC, **Keenan KA**, McGrail MA, Smalley BW, Lephart SM. Effects of deployment of musculoskeletal and physiological characteristics and balance. *Military Medicine*. 2016; 181(9): 1050-1057.



42. Eagle SR, **Keenan KA**, Connaboy C, Wohleber M, Simonson A, McFate D, Nindl B. Side-to-side knee strength imbalances and increased odds of reporting injury in Military Special Forces Operators. American College of Sports Medicine Mid-Atlantic Regional Chapter; November 4-5, 2016; Harrisburg, PA.
43. Johnson CD, Whitehead PN, Pletcher ER, Faherty MA, Lovalekar MT, Eagle SR, **Keenan KA**. Core strength as a predictor of performance during three Functional Movement Screens: A preliminary analysis. American College of Sports Medicine Mid-Atlantic Regional Chapter; November 4-5, 2016; Harrisburg, PA.
44. **Keenan KA**, Akins JS, Varnell M, Abt J, Lovalekar M, Lephart S, Sell TC. Kinesiology tape does not alter shoulder strength, shoulder proprioception, or scapular kinematics in healthy, physically active subjects and subjects with Subacromial Impingement Syndrome. *Physical Therapy in Sport*. 2017; 24: 60-66.
45. Johnson CD, Whitehead PN, Pletcher ER, Faherty MS, Lovalekar MT, Eagle SE, **Keenan KA**. Core strength as a predictor of performance during three Functional Movement Screens. American College of Sports Medicine Annual Meeting; May 30- June 3, 2017; Denver, CO.
46. Pletcher ER, **Keenan KA**, Lovalekar MT, Nindl BC, Coleman LC, Allison KA. Greater ankle strength and anaerobic capacity in female Marines who completed Military Occupational Specialty School. American College of Sports Medicine Annual Meeting; May 30- June 3, 2017; Denver, CO.
47. Allison KA, **Keenan KA**, Mi Q, Lovalekar MT, Beals K, Nindl BC. Body composition and physical determinants of physiological and musculoskeletal readiness in Marines. American College of Sports Medicine Annual Meeting; May 30- June 3, 2017; Denver, CO.
48. **Keenan KA**, Perlsweig KA, Lovalekar M, Abt JP, Sell TC, Nindl BC, Lephart SM, Beals K. Time-related changes in musculoskeletal, balance, and physiological characteristics in Naval Special Warfare Operators. National Athletic Trainers' Association Annual Meeting; June 26-29, 2017; Houston, TX.
49. Perlsweig KA, **Keenan KA**, Lovalekar M, Abt JP, Sell TC, Nindl BC, Lephart SM, Beals K. Impact of previous injury on musculoskeletal and physiological characteristics in Naval Special Warfare Operators and Students. National Athletic Trainers' Association Annual Meeting; June 26-29, 2017; Houston, TX.
50. Lovalekar M, **Keenan KA**, Chang Y, Wirt MD, Nindl BC, Beals K, Nagai T. Using the capture-recapture method to estimate the incidence of musculoskeletal injuries among U.S. Army soldiers. *Journal of Science and Medicine in Sport*. 2017; 20 (Suppl4): S23-S27.
51. Allison KF, **Keenan KA**, Wohleber MF, Perlsweig KA, Pletcher ER, Lovalekar M, Beals K, Coleman LC, Nindl BC. Greater ankle strength, anaerobic and aerobic capacity, and agility predict Ground Combat Military Occupational School graduation in female Marines. *Journal of Science and Medicine in Sport*. 2017; 20 (Suppl4): S85-S90.

52. Lovalekar M, Perlsweig KA, **Keenan KA**, Baldwin TM, Caviston M, McCarthy AE, Parr JJ, Nindl BC, Beals K. Epidemiology of musculoskeletal injuries sustained by Naval Special Forces Operators and students. *Journal of Science and Medicine in Sport*. 2017; 20 (Suppl4): S51-S56.
53. **Keenan KA**, Wohleber MF, Perlsweig KA, Baldwin TM, Caviston M, Lovalekar M, Connaboy C, Nindl BC, Beals K. Association of prospective lower extremity musculoskeletal injury and musculoskeletal, balance, and physiological characteristics in Special Operations Forces. *Journal of Science and Medicine in Sport*. 2017; 20 (Suppl4): S34-S39.
54. Beals K, **Keenan KA**, Lovalekar M, Perlsweig KA, Wohleber MF, Simonson AJ, Connaboy C, Nindl BC. The association of prospective upper extremity musculoskeletal injuries with body composition and physiological measures in Special Operations Forces. 4<sup>th</sup> International Congress on Soldiers' Physical Performance; November 28-December 1, 2017; Melbourne, Australia.
55. Wohleber MF, **Keenan KA**, Perlsweig KA, Simonson AJ, Connaboy C, Nindl BC, Beals K. Musculoskeletal, physiological, and balance characteristics associated with prospective lower extremity injury types in Special Operations Forces. 4<sup>th</sup> International Congress on Soldiers' Physical Performance; November 28-December 1, 2017; Melbourne, Australia.
56. **Keenan KA**, Wohleber MF, Perlsweig KA, Simonson AJ, Connaboy C, Nindl BC, Beals K. Musculoskeletal, balance, biomechanical, and physiological predictors of shoulder injury in Special Operations Forces. 4<sup>th</sup> International Congress on Soldiers' Physical Performance; November 28-December 1, 2017; Melbourne, Australia.
57. Beals K, **Keenan KA**, Kissel N, Mentch L, Yang W, Nindl BC, Mi Q. Prediction of lower extremity musculoskeletal injuries for Naval Special Warfare Operators: A machine learning approach. American College of Sports Medicine Annual Meeting; May 29- June 2, 2018; Minneapolis, MN.
58. Johnson CD, Whitehead PN, Pletcher ER, Faherty MS, Lovalekar MT, Eagle SR, **Keenan KA**. The relationship of core strength and activation and performance on Three Functional Movement Screens. *Journal of Strength and Conditioning Research*. 2018; 32(4): 1166-1173.
59. Lovalekar M, **Keenan KA**, Beals K, Nindl BC, Coleman LC, Posey M, Allison KF. Descriptive epidemiology of musculoskeletal injuries among female and male Marines during Ground Combat Element Integrated Task Force. American Public Health Association 2018 Annual Meeting & Expo. Nov. 10 - Nov. 14, 2018; San Diego, CA.
60. Allison KF, **Keenan KA**, Lovalekar M, Mi Q, Beals K, Coleman LC, Coleman L, Nindl BC. Fight Load Index and body composition are most associated with combat fitness in female Marines. *Journal of Science and Medicine in Sport*. (Accepted)
61. Eagle SR, **Keenan KA**, Connaboy C, Wohleber M, Simonson A, Nindl BC. Bilateral quadriceps strength asymmetry is associated with previous knee injury in military Special Tactics Operators. *Journal of Strength and Conditioning Research*. (Accepted)

## COMPLETE LIST OF PUBLICATIONS AND PRESENTATIONS

<https://www.ncbi.nlm.nih.gov/sites/myncbi/1HKWdheEOFdA3/bibliography/51738446/public/?sort=date&direction=ascending>

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### PROFESSIONAL ACTIVITIES

#### TEACHING:

1998-2000	Pharmacology for Athletic Trainers Central Michigan University 10-20 Students (Undergraduate), 3 contact hours, 30 Lectures
2005-2008	Pathophysiology and Pharmacology Heidelberg College 10-20 Students (Undergraduate), 3 contact hours, 30 Lectures
2005-2008	Clinical Competencies I Heidelberg College 10-20 Students (Undergraduate), 1 contact hours, 15 Lectures
2005-2008	Clinical Competencies II Heidelberg College 10-20 Students (Undergraduate), 1 contact hours, 15 Lectures
2005-2008	Clinical Competencies III Heidelberg College 10-20 Students (Undergraduate), 1 contact hours, 15 Lectures
2005-2008	Clinical Competencies IV Heidelberg College 10-20 Students (Undergraduate), 1 contact hours, 15 Lectures
2005-2008	Therapeutic Modalities Heidelberg College 10-20 Students (Undergraduate), 3 contact hours, 30 Lectures
2009-2010	Introduction to Medical Terminology (Teaching Assistant) University of Pittsburgh 120-130 Students (Undergraduate), 3 contact hours
Fall 2010	Musculoskeletal Assessment and Injury Prevention Independent Study—Assisted in course development University of Pittsburgh
2009-2012	Anatomical Basis of Sports Medicine (Gross Anatomy Laboratory, Teaching Assistant) University of Pittsburgh

8-16 Students (Graduate—MS and PhD), 3 contact hours, 15 Lectures

- 2015-2016 Anatomical Basis of Sports Medicine  
University of Pittsburgh  
8 Students (Graduate—MS and PhD), 3 contact hours, 15 Lectures
- Fall 2017 Health and Fitness  
Fitchburg State University  
29 Students (Undergraduate), 3 contact hours, 26 Lectures
- 2017-2018 Applied Nutrition  
Fitchburg State University  
12 Students (Undergraduate), 3 contact hours, 26 Lectures
- 2017-2018 Human Motor Development  
Fitchburg State University  
20 Students (Undergraduate), 3 contact hours, 26 Lectures
- Fall 2018 Introduction to Exercise Science (2 sections)  
Fitchburg State University  
25 Students (Undergraduate), 3 contact hours, 26 Lectures

**LECTURES and SEMINARS:**

- 1994 Myofascial Trigger Points  
NATA District 3 Convention
- 2000-2001 Care and Prevention of Athletic Injuries  
University of Maine  
25-35 Student (Undergraduate), Guest Lecturer (Various Topics)
- 2000-2001 Basic Athletic Training  
University of Maine  
25-35 Student (Undergraduate), Guest Lecturer (Various Topics)
- Spring 2006 Low Back Pain: Innominate Rotations and Sacral Torsions  
Alma College  
Alma, Michigan
- Spring 2006 Having a Ball in the Athletic Training Room: Core Stability  
Heidelberg College  
Tiffin, Ohio
- Summer 2006 Non-Steroidal Anti-Inflammatory Drugs  
Tiffin University  
Tiffin, Ohio

Fall 2008	Low Back Pain <i>Fitness Assessment and Exercise Prescription</i> University of Pittsburgh Pittsburgh, Pennsylvania
Fall 2009-2010	Electromyography Laboratory <i>Rehabilitation Biomechanics</i> University of Pittsburgh Pittsburgh, Pennsylvania
Fall 2009-2011	Motion Analysis Laboratory <i>Rehabilitation Biomechanics</i> University of Pittsburgh Pittsburgh, Pennsylvania
Fall 2009-2012	Force Plates & Plantar Pressure Laboratory <i>Rehabilitation Biomechanics</i> University of Pittsburgh Pittsburgh, Pennsylvania
Fall 2009	Body Composition (BodPod) Laboratory <i>Nutrition and Performance</i> University of Pittsburgh Pittsburgh, Pennsylvania
Spring 2010	Sacroiliac Joint Dysfunction <i>Pathokinesiology of Orthopaedic Injuries</i> University of Pittsburgh Pittsburgh, Pennsylvania
Spring 2010	Low Back Pain <i>Pathokinesiology of Orthopaedic Injuries</i> University of Pittsburgh Pittsburgh, Pennsylvania
Spring 2010-2012	Proprioception Theory, Testing, and Testing Laboratory <i>Laboratory Techniques in Sports Medicine II</i> University of Pittsburgh Pittsburgh, Pennsylvania
Spring 2010	Research Development and Implementation in Sports Medicine <i>Special Topics in Athletic Training</i> University of Pittsburgh Pittsburgh, Pennsylvania

- Fall 2010-2012      Novel Technology: Emed-X and Pedar-X  
*Laboratory Techniques in Sports Medicine I*  
University of Pittsburgh  
Pittsburgh, Pennsylvania
- Fall 2010-2012      Assessment of the Cervical Spine  
*Musculoskeletal Assessment and Injury Prevention*  
University of Pittsburgh  
Pittsburgh, Pennsylvania
- Fall 2010              Institutional Review Board  
*Nutrition Research Seminar*  
University of Pittsburgh  
Pittsburgh, Pennsylvania
- Fall 2010-2012      Exercise Physiology Laboratory Testing Demonstrations: Body Composition  
Assessment (BodPod), Anaerobic Power, and Aerobic Capacity Testing  
*Exercise Physiology*  
University of Pittsburgh  
Pittsburgh, Pennsylvania
- Spring 2011           Research Development and Implementation in Sports Medicine  
*Special Topics in Athletic Training*  
University of Pittsburgh  
Pittsburgh, Pennsylvania
- Spring 2011-2013    Evaluation and Treatment of Low Back Pain  
*Advanced Health Assessments and Exercise Prescription*  
University of Pittsburgh  
Pittsburgh, Pennsylvania
- Spring 2011-2013    Sacroiliac Dysfunction: Innominate Rotations and Sacral Torsions  
The Cervical and Lumbar Spine  
*Pathokinesiology of Orthopaedic Injuries*  
University of Pittsburgh  
Pittsburgh, Pennsylvania
- Fall 2011-2012      Presenting an Article Critique  
*Research Seminar*  
University of Pittsburgh  
Pittsburgh, Pennsylvania

Spring 2012            Kinesio Taping  
*Therapeutic Exercise*  
University of Pittsburgh  
Pittsburgh, Pennsylvania

Spring 2013            Proprioception Testing Laboratory  
*Laboratory Techniques in Sports Medicine II*  
University of Pittsburgh  
Pittsburgh, Pennsylvania

**THESIS/DISSERTATION COMMITTEE MEMBERSHIP:**

Mallory Sell, BS, ATC

Thesis Title: The development and assessment of core strength clinical measures: validity and reliability of medicine ball toss tests

Defended: August 2013

Jordan Lane, BS

Thesis Title: The effect of fatigue on the relationship between two postural stability tests in male and female athletes

Defended: December 2017

**SCHOLARLY PAPERS AND SUPERVISED RESEARCH**

Caleb Johnson, MS

Research Title: The relationship of core strength and core muscle activity with performance on three of the functional movement screens™

Study Period: Summer 2015- 2017

Raul Perez, ATC

Thesis Title: Relationship of core musculature and strength with hip and thigh muscle strains in competitive athletes (In pre-proposal preparation)

Study Period: Fall 2016- 2017

Kayla Belin, BS, LAT, ATC

Scholarly Paper Title: Functional ankle instability following a lateral ankle sprain decreases athletic performance

Period: Fall 2016- Spring 2017

**OTHER PROFESSIONAL ACTIVITIES:**

Journal of Sport Rehabilitation (Reviewer)	2013-present
Journal of Strength and Conditioning Research (Reviewer)	2015-present
Medicine & Science in Sports & Exercise (Reviewer)	2015-present
Gait and Posture (Reviewer)	2016-present
Journal of Science and Medicine in Sport (Reviewer)	2017-present
Palliative Medicine & Care: Open Access (Reviewer)	2017-present
BMC Musculoskeletal Disorders (Reviewer)	2017-present

## **RESEARCH**

### **CURRENT RESEARCH**

1. Title: North Central Massachusetts Health Career Opportunity Program  
Health Resources Services Administration 9/1/2018-8/31/2023  
Award #: NA  
The major objective of this study is to build an allied health pipeline for disadvantages students from Mount Wachusett Community College and three regional high schools (Athol High School, Ralph C. Mahar Regional High School, Gardner High School) that promotes health career professions; improves student retention, matriculation, and graduation rates; and exposes students to the primary care setting in rural and underserved communities.  
Principal Investigator: Margaret Jaillet  
Co-Principal Investigator: Fagan Forhan  
Role: Health Research Mentor

### **PREVIOUS RESEARCH RELATED ACTIVITIES (GRANT FUNDED)**

1. Title: Naval Special Warfare injury prevention and human performance initiative  
United States Department of Defense 8/15/11-12/31/16  
Award #: N00014-11-0929  
The major objective of this study is to identify and modify risk factors that are known to contribute to unintentional injuries of the Navy SEAL/SWCC.  
Principal Investigator: Kim Beals  
Role: Co-Investigator
2. Title: MARSOC injury prevention and human performance research initiative  
Office of Naval Research 10/1/13-9/30/17  
Award #: N00014-14-1-0022  
The major objective of this research initiative is to create a systematic and sustained injury prevention and performance enhancement training program based on the specific tasks and demands of the MARSOC Special Forces Soldier.  
Principal Investigator: Takashi Nagai  
Role: Co-Investigator
3. Title: USASOC injury prevention/performance optimization musculoskeletal screening initiative  
US Army Medical Research Acquisition Activity 10/1/15 -12/31/17  
Award #: W81XWH-15-C-0179  
The major objective is to scientifically evaluate its Tactical Human Optimization, Rapid Rehabilitation, and Reconditioning (THOR3) human performance training program to improve injury mitigating and performance characteristics.  
Principal Investigator: Kim Beals  
Role: Co-Investigator
4. Title: MARSOC injury prevention and human research initiative  
Office of Naval Research 4/1/16-3/31/17



Award#: N00014-15-1-0069

To examine underwater biomechanics during flutterkicks, sidestrokes, and turtleback strokes and establish the relationship between the land-based musculoskeletal characteristics and underwater biomechanical characteristics. To examine the effect of endurance combat swimming tasks (flutterkicks/sidestrokes/turtleback strokes) on the rate of perceived exhaustion, blood lactate, and water-based anaerobic power/capacity. To examine the gender differences between water-based physiological characteristics and underwater biomechanics during flutterkicks, sidestrokes, and turtleback strokes with full combat gear.

Principal Investigator: John Abt

Role: Co-Investigator

## **OTHER RESEARCH RELATED ACTIVITIES**

1. Title: Prediction of knee kinematics during a stop jump-cut maneuver using trunk neuromuscular characteristics and kinematics in a healthy, physically active population  
Years: 2012- present  
**Role: Principal Investigator**  
Source: Freddie H. Fu, MD Graduate Research Award
2. Title: Injury risk factors for lower extremity injury in collegiate soccer and basketball athletes  
Principal Investigator: Mary Murray  
Role: Co-investigator  
Years: 2012- 2018
3. Title: The relationship between strength, range of motion/flexibility, and posture with shoulder complex injury in intercollegiate baseball and softball players  
Principal Investigator: Mary Murray  
Role: Co-investigator  
Years: 2012- 2018
4. Title: The relationship between core strength and muscle activity and performance on three of the Functional Movement Screens™  
**Principal Investigator: Caleb Johnson**  
**Role: Co-investigator, Faculty Advisor**  
Years: 2015- 2017
5. Title: Variation in muscle activation patterns following ankle injection  
Principal Investigator: John Abt  
Role: Co-investigator  
Years: 2008-2013
6. Title: The effect of Kinesio® Tape on shoulder proprioception, scapular kinematics, and strength in subjects with and without subacromial impingement syndrome  
**Role: Principal Investigator**  
Years: 2010- 2016  
Sources: Freddie H. Fu, MD Graduate Research Award  
School of Health and Rehabilitation Sciences Research Development Fund

7. Title: Joint range of motion and baseball participation history in Taiwanese and American baseball players  
Principal Investigator: Yungchien Chu  
Role: Co-investigator  
Years: 2009-2010
8. Title: Biomechanic comparisons between adult American and Taiwanese baseball players  
Principal Investigator: Yungchien Chu  
Role: Co-investigator  
Years: 2009-2010
9. Title: Within trial and between trials reliability of plantar pressure measurements in ambulatory adults using the Emed and Pedar Systems  
**Principal Investigator: Karen Keenan**  
Years: 2009-2012
10. Title: Relationship between functional ankle instability questionnaires and static and dynamic postural stability in previously injured and healthy controls  
Principal Investigator: Jon Pederson  
Role: Co-investigator, Doctoral Student Advisor  
Years: 2010-2011
11. Title: Strength and swing biomechanic characteristics in adult baseball hitters of different swing velocity  
Principal Investigator: Yungchien Chu  
Role: Co-investigator  
Years: 2010-2015
12. Title: The effects of scapular kinematics during arm elevation, glenohumeral range of motion, and shoulder muscle strength on kinematics during baseball throwing  
Principal Investigator: Yungchien Chu  
Role: Co-investigator  
Years: 2011
13. Title: Muscle activation of the quadriceps and hamstrings during five jump landing tasks  
Principal Investigator: Timothy Sell  
Role: Co-investigator  
Years: 2012- 2015
14. Title: Dynamic postural stability during a rotational jump landing  
Principal Investigator: Timothy Sell  
Role: Co-investigator  
Years: 2012- 2015
15. Title: The development and assessment of core strength clinical measures: Validity and reliability of medicine ball toss tests  
Principal Investigator: Timothy Sell

Role: Co-investigator  
Years: 2013- 2015

16. Title: Expanding the role of women in the Marine Corps: Injury prevention & human performance research  
Principal Investigator: Katelyn Allison  
Role: Co-investigator  
Years: 2013- 2016

**LIST of CURRENT RESEARCH INTERESTS:**

Core stability, neuromuscular control, and proprioception as it relates to injury of the extremities and athletic performance

Injury prevention and performance optimization in military personnel and tactical athletes

**COMPUTER APPLICATIONS:**

Microsoft Excel (10+ years)

Powerpoint (10+ years)

SPSS (9 years)

STATA (2 years)

SAS (2 years)

SQL (2 years)

# MONICA M. MALDARI

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## EDUCATION

### **Doctorate of Education, Mathematics and Science Education**

University of Massachusetts, Lowell, MA 2016  
Dissertation: "An analysis of physical activity behaviors and self-efficacy in an undergraduate wellness course"

### **Master of Science, Clinical Exercise Physiology**

University of Wisconsin, La Crosse, WI 1997  
Thesis: "A comparison of the physiological and psychological responses to exercise on a virtual reality recumbent cycle versus a non-virtual reality recumbent cycle"

### **Bachelor of Science, Cum Laude, Exercise Science**

University of Massachusetts, Amherst, MA 1994

### **Junior Year Study Abroad**

University of Sussex, Falmer, England 1991-1992

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## PROFESSIONAL EXPERIENCE

### **Assistant Professor-Tenure Track**

September 2012-Present

### **Full-Time Day Instructor**

January 2011-August 2012

Exercise and Sports Science Department  
*Fitchburg State University*

*Fitchburg, Massachusetts*

### **Courses Taught:**

*EXSS 1000 Health and Fitness*

*EXSS 1002 Health and Fitness Across Cultures (Faculty-Led course in Verona, Italy)*

*EXSS 1011 Introduction to Exercise Science*

*EXSS 3130 Apprenticeship*

*EXSS 3600 Exercise Response and Adaptations in Special Populations*

*EXSS 4045 Cardiovascular and Electrophysiology*

*EXSS 4200 Professional and Career Development*

*EXSS 4950 Internship*

*EXSS 4900 Independent Study Electrocardiography*

*HON 4990 Sr. Thesis/Project Research*

*IDIS 4950 Capstone Project Advisor*

**Responsibilities Include:**

- Providing academic advising for 30+ assigned students
- Overseeing student internships
- Advising during new-student summer orientation advising and registration (SOAR)
- Designing curriculum, assessment material and laboratory practicums
- Evaluating and providing feedback on labs, presentations and assignments
- Attending faculty professional development activities
- Representing the university at open house events
- Participating in university and departmental committees

**Part-Time Day Instructor**

Spring 2005 &amp; 2006, September 2008-December 2010

Exercise and Sports Science Department

*Fitchburg State University**Fitchburg, MA***Courses Taught:***EXSS 1000 Health & Fitness**EXSS 3600 Exercise Response in Special Populations***Clinical Exercise Physiologist** (per diem since 2012)

January 2002-Present

*Emerson Hospital**Concord, Massachusetts*

- Provide risk factor intervention/management programming to patients in Phase II cardiac rehabilitation program with patient population diagnoses consisting of myocardial infarction, coronary artery bypass graft surgery, percutaneous transluminal angioplasty, stent, congestive heart failure, cardiomyopathy, and valve replacement/repair.
- Comorbidities of patient population include: diabetes, hypertension, obesity, hyperlipidemia, smoking & poor stress management skills.
- Direct warm-up and cool down, monitor EKG telemetry and blood pressure of exercising patients, and lead guided relaxation sessions.
- Clear patients for exercise, complete SOAP notes at end of session and participate in monthly clinical rounds assessing patient progress and needs.

**Clinical Exercise Physiologist**

1997-2000

*Brigham & Women's Hospital**Boston, Massachusetts*

- Provided individualized education on dietary management, exercise training, stress management, & etiology of disease process to above patient populations (see Emerson Hospital) as well as transplant and pre-transplant with left ventricular assist device (LVAD) patients.
- Conducted initial evaluations, risk stratified patients and created an individualized plan of action based upon patient's medical history, exercise test results and Prochaska's Stage of Change Model.
- Directed warm-up/cool-down sessions, monitored EKG telemetry sessions & wrote weekly progress notes for assigned patients.
- Taught weekly education sessions on topics such as exercise, etiology of CAD, and risk factor management.
- Conducted maximal, submaximal,  $\dot{V}O_2$ , and nuclear exercise tolerance tests on inpatient and outpatient populations.
- Assisted in administrative duties of department, i.e., data entry, billing, and patient scheduling.

**Consultant** 1997  
*CardioResponse* Natick, Massachusetts

- Developed the exercise programming section for a manual designed to educate patients after myocardial infarction, coronary artery bypass surgery or angioplasty.

**Graduate Assistant** 1996-1997  
*University of Wisconsin Adult Fitness/Cardiac Rehabilitation Program* La Crosse, Wisconsin

- Performed V<sub>O</sub><sub>2</sub> Max exercise testing on undergraduate students entering the fitness major as well as on research study volunteers.
- Demonstrated laboratory techniques and supervised undergraduate anatomy and physiology classes.
- Monitored hemodynamic and ECG responses during graded exercise testing on cardiac and healthy populations.
- Prescribed exercise to healthy participants for indoor running/walking, weight training, water aerobics and swimming.

**Teaching Assistant** 1993-1994  
*University of Massachusetts* Amherst, Massachusetts

**Graduate and Undergraduate Research Assistant** 1991-1997  
*Human Performance Laboratory, Department of Exercise & Sport Science* La Crosse, Wisconsin  
*Physiology Laboratory, Department of Exercise Science* Amherst, Massachusetts  
*Biochemistry Laboratory, Department of Exercise Science* Amherst, Massachusetts  
*Kinesiology Laboratory, Department of Exercise Science* Amherst, Massachusetts  
*Experimental Psychology Laboratory, University of Sussex* Falmer, England

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## REFEREED ABSTRACTS and NATIONAL CONFERENCE PRESENTATIONS

Thematic Poster Presentation: **Maldari, M.M.**, Scribner-MacLean, M., Rice, D. J. (2017). An analysis of physical activity, motivators, and self-efficacy in an undergraduate wellness course. National Meeting of the American College of Sports Medicine, Denver, CO, June 2017. *Medicine and Science in Sports and Exercise*, 49(5S), 185.

Poster Presentation: Naser, J., Porcari, J. P., **Maldari, M. M.**, Zedaker, J. (1998). A comparison of the physiologic responses to self-selected exercise intensity on the rowbike, treadmill, and bicycle. National Meeting of the American College of Sports Medicine, Orlando, FL, June 1998. *Medicine and Science in Sports and Exercise*, 30(5), 169.

Poster Presentation: **Maldari, M.M.**, Zedaker, J., Pein, R., Porcari, J.P. (1997). Physiological responses exercising on a virtual reality versus a non-virtual reality recumbent cycle. National Meeting of the American College of Sports Medicine, Denver, CO, June 1997. *Medicine and Science in Sports and Exercise*, 29(5S), 161.

Poster Presentation: Zedaker, J., **Maldari, M.M.**, Pein, R., Porcari, J.P. (1997). A comparison of the physiological responses exercising on a virtual reality versus non-virtual reality stepper. National Meeting of the American College of Sports Medicine, Denver, CO, June 1997. *Medicine and Science in Sports and Exercise*, 29(5S), 161.

## **REFEREED ABSTRACT and REGIONAL PRESENTATION**

Poster Presentation: **Maldari, M. M.**, Scribner-MacLean, M., Rice, D. J. (2016), An analysis of physical activity, motivators, and self-efficacy in an undergraduate wellness course. New England American College of Sports Medicine regional meeting, Providence, RI. October, 2016.

## **REFEREED ABSTRACT in REVIEW**

Poster Presentation: Wigmore, D., & **Maldari, M.M.**, Physical activity practices and influencing factors in undergraduate students. New England American College of Sports Medicine regional meeting, Providence, RI. *Submitted September 2017.*

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## **PEER REVIEWED MANUSCRIPTS IN PREPARATION**

**Maldari, M.M.**, Rice, D.J., Scribner-MacLean, M., An analysis of physical activity, motivators, and self-efficacy in an undergraduate wellness course. *To be submitted to the Journal of American College Health.*

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## **OTHER PUBLICATIONS**

Porcari, J. P., Zedaker, M. S., & **Maldari, M. M.** (1998). Virtual motivation. *Fitness Management*, 14(13), 48-51.

**Maldari, M. M.** (2014). *The Hierarchical Structure of Learning*. UMASS Lowell Annual Symposium Journal of Educational Research and Practice (Volume XIX) <http://www.uml.edu/education/symposium>

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## **EDUCATIONAL and PUBLIC SERVICE PRESENTATIONS**

**“The American Classroom” Fitchburg State University International Student Orientation Faculty Panelist.** August, 2017

**Alumna Panelist.** UMASS Amherst School of Public Health Alumni Panel Discussion. Amherst MA, April 2017.

**“Taking the ‘hell’ out of Being Healthy: What Fitchburg State Students Gain from Taking Health and Fitness.”** Fitchburg State University’s Speakers Series, March 2017.

**“Tipping the Balance Towards Better Outcomes: A review of fall risk assessment and neuromotor training recommendations.”** Co-presenter with Esther Burchinal, M.S., Massachusetts Association of Cardiovascular and Pulmonary Rehabilitation (MACVPR) regional meeting, Natick MA, January 2016.

**“Should Football be Banned?”** Fitchburg State University’s Center for Conflict Studies panel discussion member. April 2015.

**“Exercise and Activity.”** Presented to Emerson Hospital Cardiac Rehabilitation patients. Concord MA, June 7, 2012.

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## PROFESSIONAL SERVICE

### *Fitchburg State University Service*

Human Subjects Committee (HSC)	September 2015-present
<ul style="list-style-type: none"><li>Reviewed research protocol applications</li><li>Created informational pamphlet on HSC procedures</li><li>Co-organized and worked HSC information table at 2017 undergraduate research conference</li></ul>	
International Education Office Search Committee	June-July 2017
<ul style="list-style-type: none"><li>Reviewed resumes and conducted interviews for staff assistant position</li></ul>	
Honors Curriculum Committee	AY 2016-2017
<ul style="list-style-type: none"><li>Reviewed current Honors Program policies and courses</li></ul>	
International Advisory Committee	AY 2016-2017
<ul style="list-style-type: none"><li>Contributed to content of faculty led study abroad program handbook</li><li>Assisted with development of ideas for promotional video for international student recruitment</li></ul>	
Dual Enrollment Focus Group	April 2016
<ul style="list-style-type: none"><li>Met with members of Mass Board of Higher Ed to discuss dual enrollment programming</li></ul>	
Student Success Collaborative Working Group	May 2016
<ul style="list-style-type: none"><li>Provided feedback on faculty needs of platform</li></ul>	
Academic Transitions Presenter	June 2016
<ul style="list-style-type: none"><li>Conducted workshop on Mindset to incoming first year students</li></ul>	
Development Day Break-Out Group Leader	September 2015
<ul style="list-style-type: none"><li>Led small group faculty discussion on interdisciplinary learning</li></ul>	
Interdisciplinary Studies Working Group	Summer 2015
<ul style="list-style-type: none"><li>Examined possible ways to promote interdisciplinary courses</li></ul>	
DegreeWorks Audit	Spring 2015
<ul style="list-style-type: none"><li>Tested the new software platform for university degree evaluations</li></ul>	
Guided Pathways to Success in STEM Committee	Spring 2015
<ul style="list-style-type: none"><li>Assisted in the development of suggested coursework for potential STEM students</li></ul>	
Center for Conflict Studies “Should Football be Banned” Panel	April 2015
<ul style="list-style-type: none"><li>Presented data on concussion in youth football</li></ul>	
Ruth Butler Grant Committee:	Committee Chair 2014, Committee Member 2013
<ul style="list-style-type: none"><li>Reviewed grant applications and allocated funding</li></ul>	
Health and Wellness Collaborative	AY 2012-2013, AY 2013-2014
<ul style="list-style-type: none"><li>Working group aimed at addressing student health issues on campus</li></ul>	
Undergraduate Research Conference Judge	2012, 2013, 2014, 2015, 2016, 2017
<ul style="list-style-type: none"><li>Provided feedback on poster and oral presentations and judged for content</li></ul>	
Undergraduate Research Conference Poster Sponsor	2013, 2014, 2015
<ul style="list-style-type: none"><li>Mentored students on poster submission and design</li></ul>	
Summer Orientation Advising & Registration (SOAR)	June 2012, 2013, 2014, 2016
<ul style="list-style-type: none"><li>Assisted incoming freshmen with course selection and scheduling</li></ul>	
Open House Representative	Fall 2012, 2013, 2014, 2016
<ul style="list-style-type: none"><li>Discussed the EXSS major and FSU with potential students and parents</li></ul>	
Accepted Students Day Representative	2013, 2014, 2016
<ul style="list-style-type: none"><li>Met with accepted students and their families to discuss university and major</li></ul>	



### ***Exercise and Sports Science Departmental Service***

- Alumni Career Night February 2015, March 2016, March 2017
- Organized the event by contacting alumni working in the discipline to return to campus to discuss careers and offer advice to undergraduate students
- Social Media Organizer May 2014 to Present
- Created and continue to maintain departmental Facebook page
- Curriculum Committee (Chair AY 2015-2016) AY 2012-2013, AY 2013-2014, AY 2014-2015
- Evaluated current course programming and new course applications
- Search Committee (Co-Chair AY 2016-2017) AY 2012-2013, AY 2014-2015
- Reviewed resumes and conducted interviews of potential faculty
- Student Affairs Committee AY 2013-2014, AY 2014-2015, AY 2015-2016, AY 2016-2017
- Established policies related to student interests, review academic appeals, and hold college-bowl competition
- Program Review 2012
- Researched and co-wrote sections on curriculum trends and relationship of degree concentrations to program mission statement

### ***Other Professional Service***

- Massachusetts Association of Clinical Exercise Physiologists (MACEP) February 2014
- Organized a professional conference held on campus
- Manuscript Review Booth, K. A., & O'Brien, T.E. (TBD) *Electrocardiography for Healthcare Professionals, 5<sup>th</sup> ed.*, McGraw Hill June 2016
- Textbook Review Panelist *ACSM Resources for Clinical Exercise Physiology*, Lippincott Williams and Wilkins March 2014
- Manuscript Review Fahey, T.D., Insel, P.M., Roth, W.T. *Fit & Well 9<sup>th</sup> ed.*, McGraw Hill May 2010

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### **GRANTS, HONORS, AND AWARDS**

- Special Projects Grant (\$1000) Fitchburg State University, Fitchburg MA, 2015
- Partner's Award Partner's HealthCare, Boston, MA, 1998
- Lui/Thomas Award (\$500) University of Wisconsin, La Crosse, 1997
- Departmental Honors for Outstanding Academic Achievement UMASS, Amherst, 1994

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### **PROFESSIONAL MEMBERSHIPS**

- Massachusetts Association of Clinical Exercise Physiologists (MACEP), **Founding Member**
- American College of Sports Medicine (ACSM)
- Clinical Exercise Physiology Association (CEPA)
- New England American College of Sports Medicine (NEACSM)
- Massachusetts Association of Cardiovascular and Pulmonary Rehabilitation (MACVPR)

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### **CURRENT CERTIFICATIONS**

- Registered Clinical Exercise Physiologist*: American College of Sports Medicine
- Certified Exercise Physiologist*: American College of Sports Medicine
- Exercise is Medicine, Level 3 Provider*: American College of Sports Medicine
- Basic Cardiac Life Support (BCLS)*: American Heart Association

## Lindsay R. Parisi

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Princeton, MA 01541

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### **EDUCATION**

Springfield College            Ph.D., Physical Education  
  Specialization: Exercise Physiology  
  Dissertation Title: “Barefoot Versus Shod Versus Minimalist Shoe  
  Effect on Performance of Recreationally Active College-Aged  
  Individuals During a Maximal Treadmill Running Test”  
  Date of Graduation: May 2013

Springfield College            B.S., Sports Biology  
  Minor: Nutrition  
  Date of Graduation: May 2009

### **PROFESSIONAL EXPERIENCE**

#### **Assistant Professor- Tenure Track, Exercise and Sports Science**

School of Health and Natural Sciences  
Department of Exercise and Sports Science  
Fitchburg State University, Fitchburg, MA  
2015 – Present

*Taught Undergraduate Courses in:* Health and Fitness (Day and GCE Online), Exercise Physiology I (Day and GCE), Exercise Physiology I Lab (Day and GCE), Exercise Physiology II, Exercise Physiology II Lab, Human Motor Development, Biomechanics, and Internship: Exercise Science

*Areas of Responsibility:* Attend bi-weekly department meetings, attend winter and spring commencement, advise undergraduate students, EXSS Equipment Committee, EXSS Student Affairs Committee, EXSS Assessment Committee, Community Read Committee, Interdisciplinary Studies Working Group, Internship Coordinator, Search Committee Member and Co-Chair, Co-Faculty Advisor of EXSS Club, STEM Living-Learning Community, University Assessment and Research Committee, 2<sup>nd</sup> reader of honors thesis, attend EXSS Alumni Career Night, and attend all faculty in-service programs.

#### **Assistant Professor- Tenure Track, Human Performance and Fitness**

School of Education  
Department of Health and Physical Education  
Northern State University, Aberdeen, SD

2013 – 2015

*Taught Undergraduate Courses in:* Wellness, Honors Wellness, Honors Wellness Lab, Nutrition, Exercise Physiology, Biomechanics, and Exercise Testing & Prescription

*Taught Graduate Courses in:* Analysis and Mechanical Principles of Sport Skills, Sport Leadership, and Nutrition

*Areas of Responsibility:* Director of the Nora Staael Evert Human Performance Laboratory, co-advisor of PHIT club, Athletic Committee, Affirmative Action Committee, HPE Discipline Council, HPE assessment coordinator, curriculum review, 4-year plan review, attend bi-weekly department meetings, attend winter and spring commencement, advise undergraduate and graduate students, serve on Honors Thesis committees, and attend all faculty in-service programs.

**Graduate Assistant- Doctoral Fellow**

School of Arts, Sciences, and Professional Studies

Department of Math, Physics, and Computer Science

Springfield College, Springfield, MA

2009 – 2013

*Taught Undergraduate Courses in:* General Physics I & II Laboratories, Sport Physics Laboratory

*Areas of Responsibility:* Tutor undergraduate students and grade homework for the following courses: General Physics I & II, General Physics I & II Laboratory, Sport Physics, Sport Physics Laboratory, Physics of Movement and Science, Physics of Movement and Science Laboratory, Pre-Algebra, Intermediate Algebra, Introduction to College Algebra, and Survey of Algebra and Geometry, and administer exams

**Exercise Physiology Laboratory Instructor**

School of Health, Physical Education, and Recreation

Department of Exercise Science and Sport Studies

Springfield College, Springfield MA

2011-2012

*Taught Undergraduate Courses in:* Exercise Physiology Laboratory

*Areas of Responsibility:* Tutor undergraduate students, set up and break down of laboratory equipment, maintain equipment, grade laboratory assignments, maintenance/upkeep of official Facebook page for Springfield College Exercise Physiology

**Adjunct Professor, School of Health, Physical Education, and Recreation**

School of Health, Physical Education, and Recreation

Department of Exercise Science and Sport Studies

Springfield College, Springfield, MA

Spring 2013

*Taught Undergraduate Courses in: Wellness: A Way of Life*

*Areas of Responsibility:* Design syllabus and lesson plans, engage undergraduate students in a general education course, grade assignments, design and administer exams

## **LABORATORY SKILLS**

Blood and Urine Analysis:

Capillary Puncture

Blood assays:

Lactate

Glucose

Lipids

Various hormones

Analysis of Hb & HCT

Urine Specific Gravity

Metabolic and Cardiovascular Analysis:

Calibration and operation of computerized metabolic system

ECG stress testing

Leg ergometry

Arm ergometry

Velatron cycle simulation system

Thermodynamic analysis:

Skin and core thermal measures

Biomechanical analysis

EMG

Biodex Isokinetic Dynamometer

Dartfish

Body Composition Analysis

Bod Pod

Skinfold technique

Hydrostatic weighing

Bioelectrical impedance

## **SCHOLARLY ACTIVITY**

### **PRESENTATIONS**

*Submitted proposal to present: Physical Activity: Where We Have Been and Where We Are Going.* Massachusetts Association for Health, Physical Education, Recreation and Dance (November 2018).

Visual Tools in the Classroom- Northern Rocky Mountain Educational Research Association. Historic Alex Johnson, Rapid City, SD (October 2014).

Barefoot Versus Shod Versus Minimalist Shoe Effect on Performance during a Maximal Treadmill Running Test. American College of Sports Medicine. Orange County Convention Center and the Rosen Centre Hotel, Orlando, FL (May 2014).

Barefoot Running: A Review- Massachusetts Association for Health, Physical Education, Recreation, and Dance. Endicott College, Beverly, MA (March 2013).

## **REFEREED ABSTRACTS**

**Laamann, L.,** & Jay, J. (2015). Student constructed visuals to enhance learning. *The Researcher*, 27(2), 34-37.

**Laamann, L.,** Brown, J., Pollard, N., D'Eon, S., Carney, L., Matthews, T., & Paolone, V. (2014). Barefoot versus shod versus minimalist shoe effect on performance during a maximal treadmill running test. *Medicine and Science in Sports and Exercise*, 46(5), S697 – S699.

Brown, J., **Laamann, L.,** Ward, M., Mertens, E., Matthews, T., & Paolone, V. The effect of posture on physiological parameters in NCAA Division III field hockey players. *Medicine and Science in Sports and Exercise*, 46(5), S697 – S699.

Brown, J. C., **Laamann, L. R.,** Pollard, N. E., Schultz, S. L., Grannis, D. J., Matthews, T. D., & Paolone, V. J. (2012). The effect of wearing a cooling vest between two heated exercise bouts on core temperature. *Medicine and Science in Sports and Exercise*, 44(5), S322.

Pollard, N. E., Brown, J. C., **Laamann, L. R.,** Carmichael, R. D., Matthews, T. D., & Paolone, V. J. (2012). Effects of a carbohydrate containing beverage on thermoregulatory parameters during endurance exercise in a thermoneutral environment. *Medicine and Science in Sports and Exercise*, 44(5), S422.

## **PROFESSIONAL MEMBERSHIPS**

Health and Physical Education- Discipline Council for South Dakota 2014 – 2015

American College of Sports Medicine, 2011 – 2012; 2015 – 2017

American College of Sports Medicine- New England Chapter, 2011 – 2012; 2015 – Present

## **PROFESSIONAL DEVELOPMENT**

2017 New England American College of Sports Medicine- Regional Chapter Meeting, Providence, RI

2016 New England American College of Sports Medicine- Regional Chapter Meeting, Providence, RI

2016 American College of Sports Medicine- National Meeting, Boston, MA

2015 New England American College of Sports Medicine- Regional Chapter Meeting, Providence, RI

2014 Northern Rocky Mountain Educational Research Association Annual Meeting- Rapid City, SD

2014 American College of Sports Medicine- 61<sup>st</sup> Annual Meeting and World Congress on Exercise is Medicine, Orlando, FL

2013 Massachusetts Association for Health, Physical Education, Recreation, and Dance, Beverly, MA

2011 New England American College of Sports Medicine- Regional Chapter Meeting, Providence, RI

2011 American College of Sports Medicine- National Meeting & World Congress on Exercise is Medicine, Denver, CO

## **SERVICE**

Spartan Documentary (2018)

EXSS Search Committee Member (2017 – 2018)

EXSS Alumni Career Night (2017)

University Assessment and Research Committee (2017 – Present)

STEM Living-Learning Community Committee (2017 – Present)

Co-Advisor of EXSS Club (2017 – Present)

Internship Coordinator (2016 – Present)

EXSS Assessment Committee (2016 – Present)

Co-Chair of EXSS Search Committee (2016 – 2017)

Honors Thesis Second Reader (2016 – 2017)

Working with members of the Athol, MA Fire Department to form a presentation on Weight Training Safety (2016)

-Presented and performed demonstrations, Summer 2016

EXSS Equipment Committee, Fitchburg State University (2015 – 2016)

EXSS Student Affairs Committee, Fitchburg State University (2015 – 2016; 2017 - Present)

Community Read Committee, Fitchburg State University, At large member (2015 – Present)

Interdisciplinary Studies Working Group, Fitchburg State University (2015 – 2017)

Fitchburg State University Open House Day, Fitchburg State University (2015, 2016)

Fitchburg State University Accepted Students Day Volunteer, Fitchburg State University (2015)

South Dakota Special Olympics Bowling Tournament. Assisted athletes and scorekeepers during the tournament. (October, 2013)

Culture Fest, Northern State University. Organized and directed cultural events for children with elementary education students. (October, 2013, 2014)

Recycling program for undergraduate and graduate students. As NSU had no previous recycling program, organized and implemented a recycling program for students (2013 – 2015)

Athletic Committee, Northern State University. At large member. (2014 – 2015)

Affirmative Action Committee, Northern State University. At large member. (2014 – 2015)

Co-Advisor of PHIT Club, Northern State University. Supervise various wellness and fitness activities, including: Steps for Shep 5k, I hate winter contests, health and fitness screenings, nutrition awareness programs. (2013 – 2015)

Fit for Life: Get a Grip! What your Handgrip Strength Can Tell You, Springfield College.

Workshop for Springfield College students, faculty, and staff, highlighting the importance of maintaining fitness over one's lifetime. (February, 2013).

## **GRANTS RECEIVED**

Special Projects Grant- Major Grant. \$2500. Fitchburg State University. June 2, 2017.

Mass Humanities- Discussion Grant. \$3000. Mass Humanities. FSU “Community Read”: Robert D. Putnam’s *Our Kids: The American Dream in Crisis*. December 20, 2016.



# Jason Talanian Ph.D.

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**Employer**     **Fitchburg State University** (2011-present)

Associate Professor

- Currently teaching four classes a semester
- Human Subjects Committee Chair (2011-present)
- Department search committee (member and chair) and curriculum committee member
- Institutional Review Board Subcommittee member
- EXSS retention Specialist

**Classes instructed:** Human Motor Development  
Health and Fitness (in class and online)  
Exercise Testing and Prescription  
Scientific Principles of Strength and Conditioning  
Exercise Physiology I & II  
Professional and Career Development  
Exercise Nutrition and Heart Disease

**Bacone College** (2009-2011)

Assistant Professor, Exercise Science Coordinator & Faculty Athletic Representative

- Currently teaching 4-5 classes a semester
- 2009-2010 Merit Award Winner – Awarded to top five faculty for ancillary service to the College and Community
- Advise students and supervise internships
- Maintain a fairly new curriculum that has only been offered for four years
- Faculty Athletic Representative (Compliance Officer)
- Vice-chair (active chair) for the Subcommittee on Institutional Change
- Faculty Advisor for the School of Education, Freshman Student Associations and Board Of Executives
- Member of the Student Affairs and Athletic Committee

**Classes instructed:** Exercise Physiology I & II (in class and online)  
Kinesiology (Biomechanics) (in class and online)  
NSCA Strength and Conditioning Certification Preparation  
ACSM Personal Training Certification Preparation  
Wellness and Fitness (in class and online)  
Fitness Assessment  
Administration of Exercise Testing and Prescription (in class and online)  
Personal Health (online)  
Foundations of Health, Education and Recreation (online)  
Exercise Science Internship

**Education**     **University of Guelph**

Ph.D. in Human Physiology (2008)

**Advisor:** Dr. Lawrence Spriet

**Dissertation:** Regulation of skeletal muscle fatty acid metabolism following acute and chronic exercise

**Other research:** Caffeine and cycling performance  
Amino acid supplementation and exercise  
Hydration regulation in professional and national level athletes  
Supervised numerous student projects

**Classes instructed:** Regulation of Metabolism  
Cardio-Respiratory Physiology  
Work Physiology Lab  
Applied Human Biology Lab  
Human Physiology (TA)

**California State University Sacramento**

M.Sc. in Exercise Physiology (2003) & B.A. in Biological Science (2000)

**Advisor:** Dr. Roberto Quintana

**Thesis:** The effect of supra-maximal intensity interval training on fat oxidation rates, the crossover point and  $\text{VO}_2\text{max}$ .

**Other duties:** Internship for the Irvin Faria Human Performance Lab. Duties included exercise stress testing, body composition and respiratory analysis.

**Classes instructed:** Intermediate Jogging  
Exercise Physiology Lab (TA)  
Biomechanics Lab (TA)

**Relevant Professional Work Experience**

**Applied Medical** (2008-2009)

Territory Manager Associate

- Observed numerous surgeries in a support-role during open and laparoscopic operations

**Canadian Centre for Ethics in Sports** (2007-2008)

Doping Control Officer

- Regulated drug testing for national level athletes

**Medtox** (2003)

Exercise Physiologist

- Conducted numerous physical skills tests on Nevada Police and Sheriff to develop new standards for incoming officers.

### **Schools Insurance Authority** (2002-2003)

Employment Exercise Technician

- Provided medical evaluations and exercise tests for new-hires.

### **Athletic Coaching Highlights**

- Ontario provincial high school championships (silver and bronze medals)
- Two regional championships (high school varsity)
- State championship bronze medal (7<sup>th</sup> grade girls)
- Four league championships (high school varsity and middle school)
- Head coach for women's basketball at Lesley University (NCAA)
- Assistant coach for women's basketball at Eastern Nazarene College (NCAA)
- Cross country and track sectional team and individual medalist (HS varsity)
- Sports camp director and game official

### **Other Accomplishments and Awards**

- Gatorade Sports Science Institute Student Research Award (2005)
- Numerous interviews for health and fitness magazines, newspapers and TV
- Student presentation award finalist (ACSM & State University competition)
- Department of Human Biology and Nutritional Sciences Entrance Scholarship (2004 & 2005)
- CSU-Sacramento Student Travel Awards (2002 & 2003)
- Joseph Farrell Memorial Scholarship (2002)
- Wellington Catholic School Board Volunteer Recognition Award (2008)
- National, regional and local scientific presentations
- Competitive triathlete/marathoner
- Cross country athlete for Sacramento City College (1991 & 1993)
- Athletic MVP (cross country)
- Varsity high school basketball, tennis and cross country
- Volunteer work (fund raising, coaching & event coordination)
- Martial arts (Ti Chi, Kung Fu & Tae Kwon Do)

### **Certifications**

- ACSM Personal Training Certification
- NSCA CSCS Certification (Summer 2013)

### **Professional Affiliations**

- American College of Sports Medicine (National & Central States Chapter)
- American Physiological Society

## Publications

1. **J.L. Talanian & L.L. Spriet. Low and moderate doses of caffeine late in exercise improve performance in trained cyclist.** *Appl Physiol Nutr Metab.* 2016, 41 (8), p. 850-855.
2. **Jason L. Talanian. Defining different types of interval training: Do we need to use more specific terminology?** *Sports and Exercise Medicine Open Journal.* 2015, DOI: <http://dx.doi.org/10.17140/SEMOJ-1-124>.
3. **J.L. Talanian, G.P. Holloway, L.A. Snook, G.J.F. Heigenhauser, A. Bonen & L.L. Spriet. Exercise Training increases sarcolemmal and mitochondrial fatty acid transport proteins in human skeletal muscle.** *Am J Physiol Regul Integr Endocrinol Metab.* 2010, 299 (2), p. 180-188.
4. J. Quadriatero, E. Bombardier, S.M. Norris, **J.L. Talanian**, M.S. Palmer, H.M. Logan, A.R. Tupling, G.J. Heigenhauser & L.L. Spriet. **Prolonged moderate-intensity aerobic exercise does not alter apoptotic signaling and DNA fragmentation in human skeletal muscle.** *Am J Physiol Regul Integr Endocrinol Metab.* 2010, 298 (3), p. 534-547.
5. S.D.R. Galloway, **J.L. Talanian**, A.K. Shoveller, G.J.F. Heigenhauser & L.L. Spriet. **Seven days of oral taurine supplementation does not increase muscle taurine content or alter substrate metabolism during prolonged exercise in humans.** *J Appl Physiol.* 2008, 105 (2), p. 643-651.
6. L.L. Spriet, Christopher G.R. Perry & **J.L. Talanian. Legal pre-event nutritional supplements to assist energy metabolism.** *Essays Biochem.* 2008, 44, p. 27-43.
7. **J.L. Talanian, S.D.R. Galloway, G.J.F. Heigenhauser, A. Bonen & L.L. Spriet. Two weeks of high-intensity aerobic interval training increases the capacity for fat oxidation in women.** *J Appl Physiol.* 2007, 102 (4), p.1439-1447.
8. C.G.R. Perry, **J.L. Talanian**, G.J.F. Heigenhauser & L.L. Spriet. **The effects of training in hyperoxia vs normoxia on skeletal muscle enzyme activities and exercise performance.** *J Appl Physiol.* 2007, 102 (3), 1022-1027.
9. **J.L. Talanian, R.J. Tunstall, M.J. Watt, M. Duong, C.G.R. Perry, G.R. Steinberg, B.E. Kemp, G.J.F. Heigenhauser & L.L. Spriet. Adrenergic regulation of HSL serine phosphorylation and activity in human skeletal muscle during the onset of exercise.** *Am J Physiol Regul Integr Comp Physiol.* 2006. 291 (4), 1094-1099.

**Danielle M. Wigmore, Ph.D.**

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**EDUCATION**

University of Massachusetts, Amherst, Ph.D. Exercise Science, 2006  
University of Massachusetts, Amherst, M.S., Exercise Science, 2003  
Skidmore College, Saratoga Springs, NY, B.S., Physical Education, 1998

**ACADEMIC AND POSITIONS**

September 2017      **Professor**, *Exercise and Sports Science, Fitchburg State University*

Sept 2013-Sept 2017   **Associate Professor**, *Exercise and Sports Science, Fitchburg State University*

Sept 2006-Sept 2013   **Assistant Professor**, *Exercise and Sports Science, Fitchburg State University*

Summer 2003, 2005   **Instructor**, *Exercise Science, University of Massachusetts, Amherst*

2001-2003              **Teaching Assistant**, *Exercise Science, University of Massachusetts, Amherst*

1995-1998              **Teaching Assistant**, *Department of Physical Education and Dance, Skidmore College*

**TEACHING EXPERIENCE**

**Courses Taught**

- Wellness in Today's World
- Cardiovascular and electrophysiology
- Exercise physiology with lab
- Exercise physiology I and II with lab
- Exercise response and adaptation in special populations
- Exercise, nutrition, and heart disease
- Health and fitness (online and traditional)
- Human physiology

**Curriculum Development**

- Developed a wellness course for the Honors program to fulfill the Health and Fitness requirement
- Designed and implemented an online version of Health and Fitness

- Collaborated with other EXSS faculty on changes to the EXSS curriculum, including splitting Exercise Physiology into a 2 semester course and adding a Research Methods course
- Worked with team of faculty and administrators to review and revise IDIS major
- Use assessment data and knowledge gained from assessment and pedagogical workshops and conferences to revise course curriculum

**Other academic responsibilities**

- Advise students in the Exercise and Sport Science major
- Supervise student internships
- Advise students for IDIS capstone
- Advise students in research project for independent study
- Write letters of recommendation for graduate school entrance or job references

**ADMINISTRATIVE EXPERIENCE**

- Jan 2015-present      **Chair**, *Exercise and Sports Science, Fitchburg State University*
- Lead department of 8 full-time faculty and 7 adjunct faculty with approximately 200 majors
  - Oversee course scheduling, which includes determining course offerings and faculty loads, facilitating class schedules, and hiring adjunct faculty
  - Plan yearly budget and prioritize departmental spending to ensure continued operation of lab, classroom, and office activities as well as advancement of program
  - Conduct regular classroom observations and faculty evaluations
  - Organize retreat for department faculty to discuss departmental curricular and policy issues
  - Supported the development of a proposal for a new concentration in Strength and Conditioning
  - Facilitated the creation of a collaborative staffing model for the Strength and Conditioning program involving Athletics and EXSS

**RESEARCH EXPERIENCE**

- Summer 2015-present      **Co-investigator**, “Health of the Fitchburg Community.” Fitchburg State University Summer Research Collaborative

- Collaborated with faculty from multiple disciplines to create a summer research experience for undergraduate students
- Conducted background research and designed study to examine health parameters and physical activity habits of Fitchburg residents as well as access to fitness and recreation resources in Fitchburg
- Prepared Institutional Review Board (IRB) application for study
- Recruited and selected students to participate in project
- Collected data at various locations in Fitchburg
- Presented work at Active Living Research Conference in 2018

Sept 2016-present

**Principal Investigator**, “Physical activity practices and influencing behaviors in undergraduate students.” *Fitchburg State University*

- Designed study to examine self-reported and objectively measured physical activity in college students as well as students’ knowledge and use of fitness and recreation resources and social/environmental factors influencing the use of such resources
- Prepared Institutional Review Board (IRB) application for study
- Collected survey data on 97 participants and activity monitor data on 10 participants

Spring 2014

**Faculty advisor**, “The effect of caffeine on EPOC levels following submaximal aerobic exercise.” *Fitchburg State University*

- Supervised students on study design, IRB application, data collection and analysis, data reporting
- Students presented work at Fitchburg State’s Undergraduate conference on research and creative practice and University of Massachusetts’s statewide research symposium

Sept 2000-2006

**Research Assistant**, Muscle Physiology Laboratory, *University of Massachusetts, Amherst*

- Organized subject recruitment efforts
- Oversaw human subjects requirements and applications for all studies in the laboratory
- Collected and analyzed data for a variety of studies in the laboratory
- Wrote and submitted manuscripts for publication
- Built and maintained equipment for studies
- Supervised undergraduate students participating in independent study and thesis projects
- Mentored junior members of the laboratory with regard to study design, synthesis of the literature, presentation and writing skills

May 2005-  
August 2006

**Doctoral Dissertation Research**, “The role of intracellular oxygenation in age-related differences in skeletal muscle fatigue.” collaboration with investigators at *Yale University School of Medicine*

- Collected, processed and analyzed data for studies on muscle fatigue,

- oxygenation and aging
  - Ran spectrometer for magnetic resonance spectroscopy experiments
  - Recruited volunteers for study
  - Presented preliminary data from study
  - Published results in peer-reviewed journal upon completion of study
- March 2001-January 2003    **Master’s Thesis Research**, “Magnetic resonance imaging measures of muscle perfusion and the role of contraction intensity in the occlusion of perfusion.” collaboration with investigators at *Yale University School of Medicine*.
- Collected and analyzed data for studies on muscle function, aging and blood flow
  - Built and maintained equipment for studies
  - Recruited volunteers for studies
- Fall 1997    **Senior Thesis Project** , “The effect of hyperbaria on intense intermittent anaerobic exercise in college age women.” *Human Performance Laboratory, Skidmore College*,
- Performed subject recruitment and exercise testing as well as data entry and analysis
  - Presented results at Senior Thesis forum
- 1995-1998    **Research Assistant/Laboratory Technician**, *Human Performance Laboratory, Skidmore College*
- Administered various exercise tests (VO<sub>2</sub>max, WAT, various submaximal protocols, and body composition)
  - Maintained Human Performance Laboratory in organized, working condition
  - Conducted literature searches using library databases and the Internet
- Summer 1996    **Collaborator**, student-faculty research project, “The physiological effects of caffeine ingestion on African Americans.” *Skidmore College*,
- Performed subject recruitment, exercise testing (heart rate, blood pressure, resting metabolic rate) and data analysis

## **PUBLICATIONS**

### **Peer Reviewed**

- J. Berg, L.M. Grimm, **D. Wigmore**, C.K. Cratsley, R.C. Slotnick, S. Taylor. Quality collaborative to assess quantitative reasoning: adapting the LEAP VALUE rubric and the DQP. *Peer Review*. 16(3): 17-21, 2014.
- D.M. Wigmore**, B. Fernhall, D.L. Smith. Cardiovascular responses to acute aerobic exercise. In: *Advanced cardiovascular exercise physiology* (pp.139-162). Champaign, IL: Human Kinetics, 2011.



- D.M. Wigmore**, B. Fernhall, D.L. Smith. Cardiovascular adaptations to aerobic training. In: *Advanced cardiovascular exercise physiology* (pp.163-1178). Champaign, IL: Human Kinetics, 2011.
- D.M. Wigmore**, D.E. Befroy, I.R. Lanza, J.A. Kent-Braun. Contraction frequency modulates muscle fatigue and the rate of myoglobin desaturation during incremental contractions in humans. *Appl Phys Nutr Metab* 33(5): 915-921, 2008.
- D.W. Russ, T.F. Towse, **D.M. Wigmore**, I.R. Lanza, J.A. Kent-Braun. Contrasting influences of age and sex on muscle fatigue. *Med Sci Sport Ex.* 40(2): 234-241, 2008.
- I.R. Lanza, **D.M. Wigmore**, D.E. Befroy, J.A. Kent-Braun. In vivo ATP production during free-flow and ischaemic muscle contractions in humans. *J Physiol* 577 (Pt1): 353-367, 2006.
- D.M. Wigmore**, K. Propert, J.A. Kent-Braun. Blood flow does not limit skeletal muscle force production during incremental isometric contractions. *Eur J Appl Phys* 96(4): 370-378, 2006.
- Kent-Braun JA, BM Damon, **DM Wigmore**, DM Pober. BOLD indirect versus ASL direct measurement of muscle perfusion: a reply [letter]. *J Appl Physiol* 99(1): 376-377, 2005
- D.M. Wigmore**, B.M. Damon, D.M. Pober, J.A. Kent-Braun. MRI measures of perfusion-related changes in human skeletal muscle during progressive contractions. *J Appl Physiol* 97(6): 2385-2394, 2004
- Damon, B.M., **D. Wigmore**, Z. Ding, J.C. Gore, J.A. Kent-Braun. Cluster analysis of muscle functional MRI data. *J Appl Physiol* 95(3): 1287-1296, 2003.
- Lanza, I.R., G.E. Caldwell, T.F. Towse, **D.M. Wigmore**, J.A. Kent-Braun, FACSM. Effects of age on human muscle torque, velocity and power in two muscle groups. *J Appl Physiol*, 95(6): 2361-2369, 2003

### Manuscripts In Preparation

- D.M. Wigmore** and M. Maldari. Physical activity practices and influencing factors in undergraduate students.

### Abstracts

- D. M. Wigmore** and M. Maldari. Physical activity practices and influencing factors in undergraduate students. Submitted to the annual meeting of the New England chapter of the American College of Sports Medicine—Providence, RI, October 19-20, 2017.
- K.M. Gildea, A. Berry, C.J. Wunsch, T.M.J. Rook, D. A. Benes, **D.M. Wigmore**. Physical activity habits and indicators of health in a low-socioeconomic community. Submitted to the annual meeting of the New England chapter of the American College of Sports Medicine—Providence, RI, October 19-20, 2017.
- D. Benes, J. Huang, and **D.M. Wigmore**. Physical Activity and Perception of Recreational Facilities in a Low Socioeconomic Community. Submitted to the Active Living Research Conference—Banff, Canada, February 11-14, 2018.
- Bartholomew, D.M.**, B.M. Damon, J.C. Gore, J.A. Kent-Braun. Comparable post-exercise muscle hyperemia measured by MRI and plethysmography. *Med. Sci. Sports Exerc.* 35(5): S388, 2003

- DW Russ, **DM Bartholomew**, TF Towse, and JA Kent-Braun, FACSM. Influence of duty cycle on sex differences in fatigue during maximum-effort exercise. *Med. Sci. Sports Exerc.* 35(5): s145, 2003
- Sakkas, G., J. Kent-Braun, K. Mulligan, J. Doyle, M. Knudsen, I. Lanza, **D. Bartholomew**, M. DaSilva, T. Schleich, M. Schamben. Muscle specific strength, Intramuscular energy metabolism, and other indices of mitochondrial function are not altered in HIV-infected patients with marked peripheral lipoatrophy. Presented at International Society of Magnetic Resonance in Medicine—Toronto, Canada, 2003
- Towse, T.F., P. Sacco, D. Russ, **D.M. Bartholomew**, JA Kent-Braun, FACSM. Fatigue and central activation failure in young and older adults. Presented at Experimental Biology--New Orleans, LA, April 2002
- Kent-Braun, J.A. FACSM, A.V. Ng, FACSM, J. Doyle, F. Beaudoin, **D. Bartholomew**. Gender, but not age, affects relative fatigue during sustained maximal voluntary isometric contractions. *Med. Sci. Sports Exerc.* 33(5): S262, 2001

## **PROFESSIONAL AND EDUCATIONAL PRESENTATIONS**

- Fitchburg State and MWCC collaborative breakout session on Research and Problem Solving in the Health Sciences, Fitchburg State University Development Day—Fitchburg, MA, May 2015 (slide presentation)
- “Research and problem solving in the health sciences”, Fitchburg State University Development Day—Fitchburg, MA, May 2015 (slide presentation)
- “Assessing quantitative reasoning across institutions”, New England Educational Assessment Network Fall Forum—Worcester, MA, November 2014 (slide presentation)
- “Engaging contingent and adjunct faculty in curriculum and assessment design”, AAC&U Quality Collaboratives Project Meeting—Kansas City, MO, June 2014 (roundtable discussion)
- “Describing the cycle of assessment and program improvement in an assessment report”, Fitchburg State University Assessment Day—Fitchburg, MA, January 2012. (Slide Presentation)
- “Using internships for assessment”, Fitchburg State College Assessment Day—Fitchburg, MA, January 2010. (Slide Presentation)
- “Assessment efforts: EXSS department”, Fitchburg State College Assessment Day—Fitchburg, MA, May 2008. (Slide Presentation)
- “Role of cellular oxygen in age-related differences in muscle fatigue during incremental contractions”, American College of Sports Medicine annual conference--New Orleans, LA, June 2007. (Slide Presentation)
- “In vivo assessment of intracellular oxygenation during fatiguing isometric contractions of the ankle dorsiflexors”, American College of Sports Medicine annual conference--Denver, CO, June 2006. (Poster Presentation).
- “Skeletal muscle perfusion and oxygenation: Impact of contraction intensity and age”, Seminar, University of New Hampshire--Durham, NH, February 2006. (Slide Presentation)
- “Skeletal muscle perfusion and oxygenation: effects of contraction intensity”, New England Regional Chapter of the American College of Sports Medicine annual conference—Providence, RI, November 2005. (Invited presentation)

- “Skeletal muscle fatigue is related to a mismatch between oxygen delivery and usage”, Workshop on Investigation of Human Muscle Function *in Vivo*—Nashville, TN, October 2005. (Poster Presentation)
- “In vivo muscle intracellular oxygenation by MR spectroscopy: effect of age”, Graduate Seminar, University of Massachusetts--Amherst, MA, May 2005. (Slide Presentation)
- “Perfusion of human skeletal muscle: new applications of fMRI”, MRS of Skeletal Muscle Seminar, Yale University Magnetic Resonance Research Center--New Haven, CT, February 2005. (Slide Presentation)
- “Does blood flow limit force production during incremental isometric contractions?” Integrative Biology of Exercise APS Intersociety Meeting--Austin, TX, October 2004. (Poster Presentation)
- “Perfusion of human skeletal muscle: utility of fMRI”, Graduate Seminar, University of Massachusetts--Amherst, MA, March 2004. (Slide Presentation)
- “Comparable post-exercise muscle hyperemia measured by MRI and plethysmography”, American College of Sports Medicine annual conference--San Francisco, CA, June 2003. (Poster Presentation)
- “Comparable post-exercise muscle hyperemia measured by MRI and plethysmography”, School of Public Health Annual Poster Session, University of Massachusetts--Amherst, MA, April 2003. (Poster Presentation)
- "MRI measures of muscle perfusion and the role of contraction intensity", American College of Sports Medicine annual conference--St. Louis, MO, June 2002. (Poster Presentation)
- "MRI measures of muscle perfusion and the role of contraction intensity", School of Public Health Annual Poster Session, University of Massachusetts-- Amherst, MA, April 2002. (Poster Presentation)
- "Gender, but not age, affects relative fatigue during sustained maximal voluntary isometric contractions" American College of Sports Medicine annual conference--Baltimore, Maryland, June 2001. (Poster Presentation)
- “The effect of hyperbaria on intense intermittent anaerobic exercise in college age women” Mid Atlantic Regional Chapter of the American College of Sports Medicine annual conference--Penn State, November 1997. (Slide presentation)
- “Comparison of submaximal cycling exercise in hyperbaric and normobaric conditions” Mid Atlantic Regional Chapter of the American College of Sports Medicine annual conference--Baltimore, Maryland, November 1995. (Poster Presentation)

## **GRANTS**

- 2017-2019                   Lloyd Balfour Foundation Grant (\$240,000)
- Grant obtained by the University to establish a summer collaborative research program involving undergraduate students.
  - I was involved in planning the summer collaborative program and working with students during the first summer
- 2016                           Fitchburg State University Special Projects Grant (\$1500)
- Faculty grant to support research investigating physical activity practices in college students.

## **PROFESSIONAL ORGANIZATIONS**

Since 2001	American College of Sports Medicine
Since 2000	New England Chapter of American College of Sports Medicine
2000-2011	American Physiological Society

## **SERVICE**

### **Committee Work**

2017-present	Member, Working Group on Digital Learning
2017-2018	Member, Working Group to develop Institutional Learning Priorities
2011-2017	Chair, Exercise and Sports Science Assessment Committee
2017-present	Member, Exercise and Sports Science Assessment Committee
2017	Member, Selection Committee for Student Recognition Awards
2015-2018	Member, Exercise and Sports Science Curriculum Committee
2012-2016	Member, Liberal Arts and Sciences Council
2017-present	
2014-2015	Member, Peer Evaluation Committee for Exercise and Sports Science
2015	Member, Selection Committee for Special Projects Grants
2013-2014	Chair, Peer Evaluation Committee for Exercise and Sports Science
2012-2014	Member, Working Group to revise Interdisciplinary Studies Major
2012-2013	Member, Faculty Search Committee for exercise and Sports Science
2012-2013	Chair, Exercise and Sports Science Student Affairs Committee
2010-2013	Member, Exercise and Sports Science Student Affairs Committee
2012	Member, Ruth Butler Grant Committee
2011-2012	Co-chair, Faculty Search Committee for Exercise and Sports Science
2011	Judge, Student Free Communications, New England College of Sports Medicine annual meeting
2010-2011	Member, Leadership Academy Curriculum Committee
2009-2011	Member, All College Committee, Curriculum Committee
2009-2010	Chair, Fitchburg State College Human Subjects Committee
2007-2008	Member, Exercise and Sport Science Search Committee
2007-2008	Secretary, Student Affairs Committee
2006-2007	Member, Fitchburg State College Human Subjects Committee

### **Other Professional Activities**

2017	Reviewed and updated answers to chapter review questions for new edition of <i>Exercise Physiology for Health, Fitness and Performance</i>
2016	Reviewed chapter of <i>Exercise Physiology</i>
2013-2014, 2016	Judge, Undergraduate Conference on Research and Creative Practice
2014	Coordinator, Stretching prototype focus group for KRAM Wellness Group
2012-2014	Assessment Scholar, Fitchburg State University and Mount Wachusett Community College Quality Collaborative Dyad, Association of American Colleges and Universities (AAC&U) Quality Collaborative project

- 2013 Reviewed and updated test bank for new edition of *Exercise Physiology for Health, Fitness and Performance*
- 2013 Reviewed manuscript for *Physiologic Reports*
- 2013 Presented at an Expanding Horizons workshop entitled “Working with Your Professors”
- 2011-2012 Mentor, New Faculty Mentor Program
- 2011 Judge, Student Free Communications, New England College of Sports Medicine annual meeting

### **HONORS AND AWARDS**

- 2005 Trainee Travel Stipend Award, *Workshop on Investigation of Human Muscle Function in Vivo*
- 2005 Predoctoral Fellowship, *American Heart Association*
- 2005 NASA Space Physiology Research Grant, *ACSM Foundation*
- 2005 Phi Kappa Phi Honor Society
- 2002-2004, Graduate Student Travel Grant, *University of Massachusetts*
- 2006
- 2002 Mark Connolly Memorial Masters Scholarship Award, *American College of Sports Medicine*
- 2002-2003 James Z. Naurison Scholarship, *Community Foundation of Western Massachusetts*
- 2002 Third place winner, School of Public Health and Health Sciences Annual Poster Session, *University of Massachusetts*
- 2001 Academic Achievement Award, School of Public Health and Health Sciences, *University of Massachusetts*

### **RELATED WORK EXPERIENCE**

- 2001 **Fitness Consultant**, *University of Massachusetts Police Department*, Amherst, MA, winter 2001
- Ran program on principles of exercise training for new recruits
  - Devised exercise routine for new recruits
- 1999-2000 **Exercise Physiologist and Group Fitness Director**, *Fitcorp*, Waltham, MA, Billerica, MA, January 1999-July 2000
- Performed fitness evaluations and consultations (cardiovascular fitness, body composition, flexibility, goal assessment)
  - Devised personalized workouts for members
  - Organized group fitness activities and conducted group fitness classes
  - Organized and executed corporate wellness events and ran incentive games to increase utilization

1998

**Personal Trainer**, *World Gym*, Saratoga Springs, NY

- Trained several handicapped members, notable progress observed
- Created individualized exercise programs for members
- Instructed members on proper machine use and exercise techniques

## **Appendix 4: Resources**

The EXSS department holds space at 155 North St., the Recreation Center, and the Landry Arena. Resources within each space are described below.

### 155 North Street 1<sup>st</sup> floor

Faculty reside in newly (since 2011) renovated office space that includes nine faculty offices, a chair's office and an administrative assistant's office. Each office includes workspace, telephone, file cabinets, and bookshelves and hardwired network availability. In addition, the first floor has a conference room that seats about 8-10 individuals, houses faculty mailboxes and has bookshelves filled with relevant textbooks and journals. This floor also has a copier room with a copier machine, printer, office accessories for faculty, and DVD's of relevant topics discussed in class.

The DVD's available include:

- Super Size Me
- Eater Beware: *From Chemical Stews to Organic Gardens*
- Obesity and the Relative Role of Exercise and Genetics
- Exercise Programming for Special Populations: *Recent Advances*
- Heart Disease in America: The Hidden Epidemic
- Food, Inc. (2 copies of this DVD)
- FAT: What No One is Telling You ( 2 copies of this DVD)
- The Forgetting: A Portrait of Alzheimer's
- Depression: Out of the Shadows
- The Truth About Cancer
- The English Surgeon
- Worried Sick (Scientific American Frontiers)
- The New Medicine
- Anatomica
- Diet and Disease in Modern Society
- King Kor

Lastly, the first floor has a kitchenette/breakroom.

### 155 North Street 2<sup>nd</sup> floor

The second floor contains an exercise science lab and a student computer lab that has six desktop computers and two chairs and a small couch to lounge.

Laboratory space:

This space houses our primary exercise science laboratory. It contains a media center and a long desk that seats about 12-15 individuals. In addition, this space contains the following equipment:

- Treadmills (2)
- Lode bike
- Monarch Bikes (3)

- Electronically braked bike
- Treatment tables (2)
- Parvo Metabolic Carts (3)
- Quinton ECG Stress Test Monitor
- Plethysmograph with computer and pressure inflators
- Pulse Oximeters (8)
- Lactate Analyzers (4)
- Blood Glucose and Cholesterol Analyzers (4)
- Portable Spirometers (2)
- Skinfold Calipers (8)
- Weight/height scale
- Bioelectrical Impedance Analyzer – handheld (4)
- Bioelectrical Impedance Analyzer – foot scale
- Manual blood pressure cuffs (15)
- Stethoscopes (24)
- Dual stethoscopes (20)
- Stopwatches (20)
- Heart rate watches and monitor straps (12)
- Pedometers (stored on first floor) (~30)
- Fully stocked blood draw cart
- Step exercise boxes (4)
- Gulick tapes (10)
- Exercise floor mats (7)
- Therabands of varied thickness (~100)
- Sit and Reach boxes (3)
- Hand dynamometers (2)
- Metronomes (5)
- Portable spirometers (2)
- Actigraph Accelerometers (15)
- Sink and countertop
- GoPro (2)

### Recreation Center

The Recreation Center includes a designated laboratory, a storage garage and a shared space that faculty can have students use and can also be reserved for classes. The center includes a gymnasium hardwood floor, 110 yard indoor track, numerous cardio equipment, a weight training room and dance studio. Within the dance studio there are exercise balls, step blocks, yoga mats and foam rollers. In addition, the dance studio has 1000's of group exercise classes on video that can be followed by the viewer.

The Recreation Center lab houses:

- ECG (Cardio-Science)
- Biopac Physiologic Monitoring System



- Treadmill
- Monarch bikes (3)
- Two complete skeleton models
- Numerous skeleton bones, stored and separated in Tupperware and bone boxes
- Full skeletal vertebra model
- Human muscle models (thigh, individual muscles, upper body, hips)
- Sarcomere model
- Skinfold calipers (12)
- Foam rollers (2)
- Thera bands (~40 of varying thickness)
- Towels (10)
- Measuring tapes (7)
- Handheld BIA (5)
- Stopwatches (10)
- Exercise floor mats (4)
- Sit and reach box (2)
- Sink and countertop
- Large flat screen smart TV)
- Treatment table (2)
- Tables (2) and chairs (12)
- Height/weight scale
- Desktop computer
- NASCO food portion kits

The EXSS department also has a storage garage housed in the Recreation Center gymnasium that includes the following equipment:

- Full set of plyometric boxes (5)
- Speed trap electronic timing system
- Agility cones of varied size (20)
- Badminton equipment (racquets, shuttlecocks and nets)
- Sprint parachute
- Stop watches (10)
- Vertec vertical jump tester
- Weighted vests (2)
- Agility ladder
- Mini hurdles
- Distance wheel
- Parachute Resistance system (3)

### Landry Center

The Landry Center includes a shared space with the Athletics Department. It includes a full strength and conditioning facility with most of the relevant equipment used in the field of strength training. The center also includes a large indoor turf area that can be used for training.

- Gymaware Velocity Based Training units (4)
- Teambuildr Training Software
- I pads to support Gymaware and Teambuildr (4)
- Firstbeat Heart Rate Monitoring system (30)
- Power racks, weightlifting platforms, power bar, olympic bar, and olympic pates (8)
- Medicine Balls (30)
- Resistance Bands (40)
- Sleds (2)
- Dumbbells 5-80 in 5 pound increment (2 pair ea.)
- Powerblock (4)
- Brower timing system
- Vertec vertical jump testing system
- 20 x 5 yards of turf for speed, agility, and quickness drills

## **Appendix 5: Report on Library Support for EXSS**

To: Exercise and Sports Science Faculty  
From: Jacalyn Kremer, Dean of Amelia V. Gallucci-Cirio Library  
CC: Alberto Cardelle, Provost  
John Schaumloffel, Dean of Health and Natural Science  
Linda LeBlanc, E-Learning & Instruction Librarian

Date: October 10, 2018  
Re: Draft Report - Library resources support for Exercise and Sports Science program

The New England Commission on Higher Education's Standard 7.22 calls for "access to library and information resources, services, facilities, and qualified staff sufficient to support its teaching and learning environments and its research and public service mission as appropriate." The purpose of this draft report is to outline the current Amelia V. Gallucci-Cirio Library's resources, services and facilities that support the undergraduate program in Exercise and Sports Science at Fitchburg State University. This draft report will be used as a basis to meet and talk with the Exercise and Sports Science Faculty about the resources and services we are currently providing to the department and its students, as well as how we might improve the Library's support.

### ABOUT Exercise and Sports Science at Fitchburg State University

Total EXSS students enrolled in Fall 2018	20
	5
Clinical Exercise Physiology Concentration	16
	0
Fitness Management Concentration (also Business minor)	45
Strength and Conditioning Concentration	1

\* The strength and conditioning major was recently approved.

An analysis of the library support needed for the Exercise and Sports Science undergraduate major are classified into three categories: resources, services and facilities.

## RESOURCES for Exercise and Sports Science

Researchers in Exercise and Sports Science predominantly use academic journals, with less emphasis on monographs (books). Currency of sources is critical with an emphasis on the prioritization of sources less than 5 years old. Faculty in Exercise and Sports Science are interested in incorporating streaming films/documentaries into their teaching.

### 1. Journals and Databases

The Amelia V. Gallucci-Cirio Library offers access to over 100,000 online journals in over 165 databases. Specifically for the Exercise and Sports Science major, the Library purchases the database SportsDiscus with Full Text. This database is an excellent source of literature for sports and sports medicine studies, providing full-text content from more than 650 journals and magazines. Usage statistics show declining usage of this database over the past four years, although the database is still well used. See Appendix A: Full-text Journal Databases by Disciplines related to Exercise and Sports Science.

Looking at Exercise and Sports Science through an interdisciplinary lens, the library offers numerous medical and psychological related databases and these databases adequately meet the needs of an undergraduate researcher. See Appendix A.

The Exercise & Sports Science faculty has requested an online subscription to the *International Journal of Sports Medicine*. It is a peer reviewed journal indexed in MEDLINE with 14 issues per year with no full-text availability within a database. Pricing is approximately \$1,800. We look forward to a conversation about the possible purchase of this journal versus access through Interlibrary Services.

### 2. Books

A review of our print collection in the Library of Congress call number ranges specifically associated with Exercise & Sports Science shows approximately 3,800 books in our collection, with about 350 published in the past 5 years. This is well below the optimal depth of collection, although this does not include those books in the general medical section that total over 6,000. See Appendix B: Monograph Collection Description and Analysis. In addition, almost all the books are in the print collection as the Library offers few eBooks. It is our recommendation that an eBook package that includes exercise and sports science books be acquired to meet the needs of the undergraduate researcher and the faculty. This will not only increase the number of volumes available, it will also increase the number of books published in the past 5 years.

### 3. Films and other Media

In 2018, the Library purchased a subscription to the academic streaming film database Kanopy. Over 450 videos are available with subject headings aligned with Exercise and Sports Science. See Appendix C –Films and Other Media Collection for a breakdown by category.

## SERVICES for Exercise and Sports Science

### 1. Library Instruction

For all academic departments in the 2018 academic year, faculty librarians taught over 184 research sessions and were embedded into 63 courses. Through these efforts, we reached over 4,340 students during the last academic year. With only 6 faculty librarians on staff, the number of classes with research sessions and/or an embedded librarian is impressive and requests continue to increase.

In the past two academic years though, the number of exercise and sports science classes with research sessions and/or an embedded librarian is down to close to zero. This happened, in part, because the faculty librarian liaison Linda LeBlanc went on sabbatical and there was not enough staff to cover for her. See Appendix D: Research Instruction for more information. We look forward to a robust conversation about how the Library can support the research needs of exercise and sports science students, particularly in research intensive courses.

## 2. Research Help

### *Library Research Guides*

The Library offers 32 subject research guides plus over 100 course specific guides, covering all disciplines at Fitchburg State. For Exercise and Sports Science, we have created 1 subject research guide and 5 course specific research guides. The usage statistics for the Exercise and Sports Science research guide show the guide was accessed 52 times in a year, about half the usage the average subject guide receives. We welcome a conversation about how the Exercise and Sports Science research guide might be modified to make it more useful to your students.

### *Research Help*

The Library offers one-on-one reference services in a variety of modes, including dropping in at the reference desk, making a personal appointment and chat instant messaging service. The overwhelming majority of such services are offered in-person at the research help desk, although this number has declined significantly over time. During the academic year, research help is available to students for 60 hours per week. The aggregate trends in research help appear in Appendix E: Research Help. Statistics on the use of research help by Exercise and Sports Science students only are not available.

## 3. Reserves

The Library's Reserve system is well used by the Fitchburg State community. For example, this semester 98 professors put a total of 567 items on reserves. Checkouts of reserve materials by all students were more than 2,000 during the last academic year. For the past three semesters, there have been 3 Exercise and Sports Science professors who have put a total of 4-5 items on Reserves. We would like to explore ways to increase the use of Reserves by Exercise and Sports Science professors in order to give students more access to textbooks and other course materials.

## 4. Interlibrary Services Request

Data shows Exercise and Sports Science students and professors use interlibrary services. As a department, they ranked in the middle on their use compared to other departments. See Appendix F: Interlibrary Services for details.

## FACILITIES

With the Library's recent renovation, students have access to welcoming spaces designed to support individual and group work. Building information is in Appendix G –Facilities.

### Appendix 6: 2 year rotation for EXSS courses

<b>Course #</b>	<b>Course Name</b>	<b>Frequency of Offering</b>
EXSS 1000	Health & Fitness	Fall, Spring, Summer (also offered online)
EXSS 1010	Basketball	offered less than once every two years
EXSS 1011	Intro to Exercise Science	Fall, Spring
EXSS 1060	Badminton	offered less than once every two years
EXSS 1170	Intro to Mountain Hiking	offered less than once every two years
EXSS 1180	Backpacking	offered less than once every two years
EXSS 1280	Orienteering	offered less than once every two years
EXSS 1300	Recreational Sports	offered less than once every two years
EXSS 1400	Jogging: Theory and Practice	offered less than once every two years
EXSS 1440	Body Shaping	offered less than once every two years
EXSS 1450	Weight Training for Athletes	offered less than once every two years
EXSS 1460	Standard First Aid/Adult CPR/AED	Fall, Spring
EXSS 1470	Techniques of Road Racing	offered less than once every two years
EXSS 1490	Stress Management	offered less than once every two years
EXSS 1500	Lifeguarding	offered less than once every two years
EXSS 1510	Consumer Health	offered less than once every two years
EXSS 1520	Diet, Exercise, and Weight Control	offered less than once every two years
EXSS 2023	Intro to Sports Medicine	Spring
EXSS 2050	Functional Anatomy	Fall, Spring
EXSS 2060	Exercise, Nutrition, and Heart Disease	Fall, Spring, Summer (also offered online)
EXSS 2065	Introduction to Research in Exercise Science	Fall
EXSS 2071	Exercise Physiology I	Fall, Spring, Summer
EXSS 2072	Exercise Physiology II	Fall, Spring, Summer

EXSS 2300	Nutrition in Exercise and Sport	Fall, Spring
EXSS 2400	Health Promotion	Fall
EXSS 2500	Human Motor Development	Fall, Spring
EXSS 2660	Psychology of Sport and Exercise	offered less than once every two years
EXSS 3000	Applied Nutrition	offered annually
EXSS 3001	Assessments for Strength & Conditioning	offered annually
EXSS 3011	Practicum in Strength & Conditioning 1-a	offered every semester
EXSS 3012	Practicum in Strength & Conditioning 1-b	offered every semester
EXSS 3020	Biomechanics of Sport	offered less than once every two years
EXSS 3050	Adaptations	offered less than once every two years
EXSS 3120	Scientific Foundations of Strength Training and Conditioning	Fall, Spring
EXSS 3130	Apprenticeship	as needed, special scheduling
EXSS 3450	Exercise Testing and Prescription	Fall, Spring
EXSS 3600	Exercise Response and Adaptations in Special Populations	Fall, Spring
EXSS 4000	Fundamentals of Coaching	offered less than once every two years
EXSS 4002	Practicum in Strength & Conditioning 2-a	offered every semester
EXSS 4003	Practicum in Strength & Conditioning 2-b	offered every semester
EXSS 4005	Biomechanics and Motor Control of Human Movement	Fall, Spring
EXSS 4010	Recreational Leadership	offered less than once every two years
EXSS 4025	Motor Learning and Control of Human Movement	Fall, Spring
EXSS 4040	Fitness Management	Fall, Spring
EXSS 4045	Cardiovascular and Electrophysiology	Fall, Spring
EXSS 4060	Outdoor Education	offered less than once every two years
EXSS 4110	Programs in Recreation	offered less than once every two years

EXSS 4200	Professional and Career Development	Fall, Spring
EXSS 4900	Independent Study	as needed, special scheduling
EXSS 4950	Internship	Fall, Spring, Summer
EXSS 4975	Directed Study	as needed, special scheduling



**Appendix 7: 2018-2019 EXSS Handbook**



**Exercise and Sports Science  
Department**

# STUDENT HANDBOOK

**Academic Year 2018-2019**



# Table of Contents

Introducing the Exercise and Sports Science Faculty & Staff.....	1-2
Exercise Science Career Opportunities.....	3-4
What You Will Learn.....	5-6
The Curriculum.....	7-13
Professional Conferences.....	14
Apprenticeships.....	14-16
Internships.....	16-22
Academic Advising.....	23
Academic Policies and Procedures.....	23-25
Inappropriate Use of Technology in the Classroom.....	25
Academic Awards.....	25
Exercise and Sports Science Club.....	25
Student Feedback.....	26



# Introducing the Exercise and Sports Science Department:

## **Danielle Wigmore, Ph.D., Department Chair**

[dwigmor1@fitchburgstate.edu](mailto:dwigmor1@fitchburgstate.edu)

**Office: 155 North Street, Room #100A; Extension 3250**

Teaches: Exercise Physiology I; Exercise Physiology II; Cardiovascular and Electrophysiology;  
Topics: Wellness in Today's World, Exercise, Nutrition and Heart Disease; Health and Fitness

## **Jessica Alsup, Ph.D.**

[jalsup@fitchburgstate.edu](mailto:jalsup@fitchburgstate.edu)

**Office: 155 North Street, Room #109; Extension 3673**

Teaches: Exercise Response and Adaptations in Special Populations; Exercise Physiology II;  
Intro to Exercise Science; Human Motor Development; Applied Nutrition; Health and Fitness

## **Jeff Godin, Ph.D., CSCS**

[jgodin@fitchburgstate.edu](mailto:jgodin@fitchburgstate.edu)

**Office: 155 North Street, Room #111; Extension 3716**

Teaches: Exercise Physiology I; Exercise Physiology II; Exercise Testing and Prescription;  
Fitness Management; Functional Anatomy; Scientific Foundations of Strength Training &  
Conditioning; Nutrition in Exercise and Sport; Health Promotion; Exercise, Nutrition and Heart  
Disease; Health and Fitness

## **David Heikkinen, Ph.D., CSCS**

[dheikkin@fitchburgstate.edu](mailto:dheikkin@fitchburgstate.edu)

**Office: 155 North Street Room #109; Extension 3922**

Teaches: Fitness Management; Biomechanics of Sport; Functional Anatomy; Human Motor  
Development; Health and Fitness

## **Timothy Hilliard, Ph.D., CSCS**

[thilliar@fitchburgstate.edu](mailto:thilliar@fitchburgstate.edu)

**Office: 155 North Street, Room #108; Extension 3671**

Teaches: Biomechanics & Motor Control of Human Movement; Scientific Foundations of  
Strength Training & Conditioning; Intro to Exercise Science; Intro to Research in Exercise  
Science; Functional Anatomy; Health and Fitness

## **Karen Keenan, Ph.D.**

[kkeenan5@fitchburgstate.edu](mailto:kkeenan5@fitchburgstate.edu)

**Office: 155 North Street, Room #104; Extension 4483**

Teaches: Intro to Sports Medicine; Human Motor Development; Applied Nutrition; Health and  
Fitness

**Monica Maldari, Ed.D, ACSM, CES, RCEP, EIM**

[mmaldar1@fitchburgstate.edu](mailto:mmaldar1@fitchburgstate.edu)

**Office: 155 North Street Room #103; Extension 4483**

Teaches: Professional and Career Development; Exercise Response and Adaptations in Special Populations; Intro to Exercise Science; Cardiovascular and Electrophysiology; Health and Fitness

**Lindsay Parisi, Ph.D.**

[llaamann@fitchburgstate.edu](mailto:llaamann@fitchburgstate.edu)

**Office: 155 North Street Room #110; Extension 3158**

Teaches: Biomechanics of Sport; Exercise Physiology I; Exercise Physiology II; Human Motor Development; Health and Fitness

**Jason Talanian, Ph.D.**

[jtalania@fitchburgstate.edu](mailto:jtalania@fitchburgstate.edu)

**Office: 155 North Street, Room #112; Extension 3396**

Teaches: Exercise Physiology I; Exercise Physiology II, Exercise Testing & Prescription; Human Motor Development; Scientific Foundations of Strength Training & Conditioning; Professional and Career Development; Health and Fitness; Exercise, Nutrition and Heart Disease; MPTC Applied Concepts in Fitness for Police Officers

### **Secretary**

**Cheryl Sarasin**

**Office: 155 North Street, Room #100; Extension 3304**

[csarasi1@fitchburgstate.edu](mailto:csarasi1@fitchburgstate.edu)

**Hours: Monday thru Friday: 8:00 – 4:30 p.m.**

# EXERCISE SCIENCE CAREER OPPORTUNITIES

Career opportunities are numerous and varied for Exercise and Sports Science graduates all tracks – Clinical Exercise Physiology, Fitness Management, or Strength and Conditioning. You may elect to work in an entry-level position immediately upon graduation, or you may choose to further your education. The Exercise and Sport Science major prepares you for either option.

As the Health Club industry continues to grow and be profitable, numerous opportunities exist for qualified students to obtain employment as fitness club workers. Although health club memberships span all age groups, senior citizens represent the fastest growing cohort in new membership applications. Fitness instructors in this setting will be working increasingly with an at-risk population. Appropriate education is essential; employers are already seeking those who have the knowledge base to work with this group

Additionally, the role of the clinical exercise physiologist will continue to expand, as chronic diseases such as cardiovascular disease and diabetes continue to be pervasive. It is already impossible to rehabilitate these individuals with such conditions using supervised medical programs alone. More stable patients - those at low to moderate risk for a first or second myocardial infarction (heart attack) - are joining health clubs. Because of this trend, fitness centers/health clubs will need specially trained employees to provide the acceptable standard of care. The clinical exercise physiologist will be the “point person” for risk stratification and exercise programming for these clients, often in conjunction with physician recommendation.

The field of exercise science has been continuously growing to meet the increased demand for educated, certified, and experienced fitness professionals. A baccalaureate degree in exercise science with associated certification would strongly position a graduate for a career in the fitness field. Most patients can benefit from supervised physical activity. Whether a fitness evaluation, a clinical or functional capacity test, or interpretation and exercise prescription, the exercise specialist is qualified to provide these services. Physical activity is not only preventive of over 26 diseases and conditions, it also is recognized as viable treatment for a significant number of disorders. Exercise specialists are best suited for this work, and are fast becoming formally recognized as an integral part of the health care team. Recently, the American College of Sports Medicine (ACSM) has spearheaded the “Exercise is Medicine” initiative. This initiative creates a new way to view the association between physical activity and health and seeks to establish formal working relationships between medical practitioners and health fitness professionals. The ACSM offers 3 levels of certification for exercise physiologists that ensure high standards of knowledge and experience for exercise professionals, whether seeking to work with patients or the general population.

The burgeoning field of strength and conditioning provides an excellent opportunity for students wishing to apply the practices of safe and effective exercise training to the athletic population. There is a growing need for professionals in the strength and conditioning field, both in athletics and the general population at commercial facilities. The Bureau of Labor Statistics projects 15% growth in the field of strength and conditioning between 2012 and 2022 compared to 11% growth for all other professions (BLS.gov).



The role of the strength and conditioning coach has and will continue to grow. Today's strength and conditioning coach focuses on athlete health, injury prevention, and the improvement of human performance. The delicate balance among these dimensions requires a specific set of knowledge, skills, and abilities from the Exercise and Sport Sciences. The strength and conditioning coach needs to be able to communicate with other team health care professionals including the team physician and athletic trainer. Thus, the strength and conditioning coach must be proficient with program design and be knowledgeable in the area of sports medicine.

Because of the shift to alternative care, and because of the interest the elderly show in acquiring and maintaining as much quality of life as is possible, there will be a growing employment market for the clinical exercise physiologist, and for those who have expertise in the management of fitness/wellness facilities. Likewise, there will be an increased demand for trained strength and conditioning professionals to work with athletes across a variety of settings (professional, collegiate, youth, or weekend warrior). Fitchburg State University will be at the leading edge of the employment market because of its strong track in clinical exercise physiology, its hands-on preparation in strength and conditioning, and because of the purposeful blend of clinical physiology and health fitness emphases in all tracks. The completion of your degree will prepare you to sit for a variety of certification exams offered by the ACSM, the National Strength and Conditioning Association, and other certifying bodies.

The following lists include employment possibilities. Students who elect a broader program of study may opt for graduate education, or work in the commercial, corporate, or hospital-based fitness industries.

<b>Clinical Exercise Physiology</b>	<b>Fitness Management</b>	<b>Strength and Conditioning</b>
Cardiac rehabilitation	Commercial health/fitness club	Strength coach for:
Cardiopulmonary exercise testing	Corporate/employee wellness programs	Division I, II, and III Collegiate Athletics
Chiropractic*	Fitness equipment design	Professional Sports Teams
Exercise technician	Fitness equipment installation	Commercial strength and conditioning settings
Exercise physiologist	Fitness equipment marketing/sales	Research in strength and conditioning or sports science
Hospital-based wellness program	Municipal fitness/recreation programs	Sport scientist
Occupational therapy*	Management consultant	
Physical therapy*	Personal trainer	
Pulmonary rehabilitation	Small business owner	
Prosthesis design		
Physician Assistant*		
Research in health and exercise*		
Resident care facilities		
Shoe design		

*\*Some career paths require a Masters or Doctoral degree. The Exercise and Sports Science program will provide students with the necessary prerequisites.*

# WHAT YOU WILL LEARN

## *General Knowledge and Skills*

College students need to acquire not only profession-specific skills, but they also need to acquire more generalized skills in order to navigate successfully the changing world of work. These are:

## *Communication and Interpersonal Skills*

To a large measure, the success of the exercise science practitioner depends on his/her ability to communicate and relate to others effectively. These competencies include listening, interpreting, conveying information, and public speaking. Students in Exercise and Sports Science will have numerous opportunities to develop public speaking skills, including class presentations and internship presentations.

Students will also be encouraged to submit work to regional professional organizations as well as the University's annual Undergraduate Conference on Research and Creative Practice for presentation in poster or oral session formats. **All students are required to attend one professional conference during their tenure at FSU. This requirement is on the advising form, and is a graduation requirement.**

## *Leadership and Teamwork Skills*

The ability to work in a team either as a member or as its leader is critical in most professional settings, including the fields of clinical exercise physiology and fitness management. Therefore, courses incorporate group projects, laboratory teams, group presentations, and case studies to develop the skills and attitudes of leadership and team building. In addition, the department will begin each year with a series of team building events and activities in order to build a strong cohort as well as to provide a viable team experience.

## *Organizational Skills*

The complexity of the workplace demands strong organizational skills. These skills would be developed primarily through the experiential base that is the foundation of this curriculum. Laboratory experiences, apprenticeships, and internships develop and reinforce organization with regard to work efficiency and reporting. The capstone course, Professional and Career Development, will require extensive writing and literature searches.

## *Critical Thinking Skills*

Critical thinking skills such as analysis, synthesis, judgment, and reflection are essential components of the practitioners work. The successful outcome for many clients may depend on the practitioner's ability to think, to communicate, to articulate, and to formulate appropriate questions. Established on a firm foundation in the liberal arts and sciences, the Exercise and Sports Science major reflects a curriculum that recognizes the importance of these traits, and emphasizes the process of systematic learning of these skills. This is fulfilled by the progressive rigor in thought and expression required as students advance in course levels.

## ***Computer Competency***

Computer competency will be developed within the department, although you may elect an introductory computer course as a free elective. Students in the Fitness Management track are required to take CIS for Business as a prerequisite for other Business Administration courses. The matrix below depicts the courses in which students will practice and gain competencies in word processing, Power Point, Excel, statistical packages, and Access.

## **Discipline-Specific Knowledge and Skills**

***Quantitative Skills:*** Quantitative skills such as research, testing, and interpretation of testing are the foundation of Exercise Science. Throughout departmental course work, students will learn to search the literature, develop and conduct surveys, collect physiological data, interpret data, and analyze the results of studies.

***Specific Knowledge, Skills, Abilities:*** There is currently no licensure for health/fitness professionals; licensure for Clinical Exercise Physiologists is in the early stages. However, ACSM and the National Strength and Conditioning Association do offer certification programs in health and fitness, and in clinical exercise physiology. Furthermore, the Commission on Accreditation of Allied Health Education Programs (CAAHEP) uses the knowledge, skills, and abilities (KSAs) set by the ACSM as the foundation for accreditation of undergraduate programs in Exercise Science. While we are not convinced that seeking CAAHEP accreditation is the right path, we have based the curriculum, in large part, on the KSAs set as standards by ACSM and NSCA. These specific certifications are rapidly becoming the industry standard. Therefore, the curriculum is based, in large part, on the knowledge, skills, and abilities set as standards by these two organizations. These are:

### **Health/Fitness**

Functional Anatomy and Biomechanics  
Exercise Physiology  
Human Development and Aging  
Pathophysiology/Risk Factors  
Human Behavior/Psychology  
Health Appraisal and Fitness Testing  
Emergency Procedures and Safety  
Exercise Programming  
Nutrition and Weight Management  
Program Administration/Management  
    personnel  
    budget/finance  
    marketing/sales  
    operations  
    communication  
    health promotion  
    risk management  
Interpersonal Skills

### **Clinical Exercise Physiology**

Metabolic Function  
Pathophysiology/Risk Factors  
Health Appraisal/Exercise Testing  
Emergency Procedures and Safety  
Exercise Programming  
Electrophysiology  
Interpersonal Skills

# THE CURRICULUM

The major is both multi- and inter-disciplinary. It is multidisciplinary in that it is the integration of anatomy, physiology, physics, psychology, and learning theory to describe and explain responses and adaptations to exercise and training, and to apply that knowledge to enhance physical potential for health, for sport, and in rehabilitation. It is interdisciplinary in that it draws from Biology and Business Administration to provide a foundation in these disciplines to support exercise science applications as well as to enhance career preparedness.

There is a common core of Exercise Science courses to ensure a solid foundation in the various disciplines that comprise this multidisciplinary field of study, and to ensure the ability to apply knowledge in a variety of practical experiences. There is an opportunity also to develop breadth and depth in the field of Exercise and Sports Science as each track has specific requirements, as well as free electives. All Exercise and Sports Science majors must complete a core of EXSS courses, including a 240 hour internship, as well a 4 or 5 liberal arts and sciences courses, depending on concentration.

## 4-Year Plan of Study

2018-2019

### FITNESS MANAGEMENT TRACK (B.S. Degree)

#### FRESHMAN YEAR

**Fall Semester      16 Credits**

EXSS 1011	Introduction to Exercise Science	(3)
BIOL 1200	Anatomy & Physiology I	(4)
MATH 1250	Intro to Functions (SMT)	(3)
ENGL 1100	Writing I (ART)	(3)
PSY 1100	Intro to Psychological Science (CTW)	(3)

**Spring Semester      16 -17 Credits**

EXSS 2500	Human Motor Development	(3)
BIOL 1300	Anatomy & Physiology II (OPTION III)	(4)
ENGL 1200	Writing II (ART)	(3)
BSAD 1700	Intro to Computer Info Sys for Business	(3)
XXXX	LA&S Elective	(3-4)

#### SOPHOMORE YEAR

**Fall Semester      17 Credits**

EXSS 2050	Functional Anatomy	(3)
EXSS 2065	Intro to Research in Exercise Science	(3)
EXSS 2071	Exercise Physiology I	(4)
CHEM 1200	Chemistry for Health Sciences (SMT LAB)	(4)
BSAD 3200	Principles of Management	(3)

**Spring Semester      16 Credits**

EXSS 2072	Exercise Physiology II	(4)
BSAD 3300	Fundamentals of Marketing	(3)
ECON 1200	Principles of Economics: Microeconomics	(3)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)

#### JUNIOR YEAR

**Fall Semester      15 Credits**

EXSS 2300	Nutrition for Exercise & Sport <b>OR</b>	(3)
EXSS 3000	Applied Nutrition	(3)
EXSS 3120	Scientific Foundations of Strength Training & Conditioning	(3)
EXSS 4200	Professional & Career Development	(3)
BSAD 2010	Introduction to Financial Reporting	(3)
XXXX	LA&S Elective	(3)

**Spring Semester      13 Credits**

EXSS 3450	Exercise, Testing and Prescription	(4)
BSAD 2020	Introduction to Managerial Accounting	(3)
XXXX	LA&S OPTION Course	(3)
XXXX	LA&S OPTION Course	(3)

#### SENIOR YEAR

**Fall Semester      15 Credits**

EXSS 2400	Health Promotion	(3)
EXSS 4005	Biomechanics and Motor Control of Human Movement	(4)
BSAD 3500	Business Law I	(3)
XXXX	LA&S Elective	(3)
XXXX	Free Elective	(2)

**Spring Semester      12 Credits**

EXSS 4040	Fitness Management	(3)
EXSS 4950	Internship	(6)
XXXX	LA&S OPTION Course	(3)

**Total Credits: 120-121** depending on LA&S electives

# EXSS Major Requirements and Prerequisites

## Fitness Management Track

### Liberal Arts and Sciences Requirements for all EXSS Majors (15 Credits)

- Anatomy and Physiology I (BIOL 1200) – 4 credits
- Anatomy and Physiology II (BIOL 1300) – 4 credits
- Chemistry for Health Sciences (CHEM 1200) OR General Chemistry I (CHEM 1300) – 4 credits
- Introduction to Psychological Science (PSY 1100) – 3 credits

### Core Requirements (46 Credits)

- Intro to Exercise Science (EXSS #1011) - 3 credits
- Functional Anatomy (EXSS #2050) – 3 credits
- Intro to Research in Exercise Science (EXSS # 2065) – 3 credits
- Exercise Physiology I (EXSS # 2071) – 4 credits
- Exercise Physiology II (EXSS # 2072) – 4 credits
- Sports Nutrition (EXSS #2300) – 3 credits OR Applied Nutrition (EXSS #3000) – 3 credits
- Exercise Testing and Prescription (EXSS #3450) – 4 credits
- Scientific Foundations of Strength Training & Conditioning (EXSS #3120) – 3 credits
- Biomechanics & Motor Control of Human Movement (EXSS #4005) – 4 credits
- Professional & Career Development (EXSS #4200) – 3 credits
- Fitness Management (EXSS #4040) – 3 credits
- Human Motor Development (EXSS #2500) – 3 credits
- Internship (EXSS #4900) – 6 credits

### Track Requirements (24 Credits)

- Health Promotion (EXSS #2400)- 3 credits
- Intro to CIS for Business (BSAD#1700) – 3 credits
- Principles of Management (BSAD #3200)- 3 credits
- Fundamentals of Marketing (BSAD #3300)- 3 credits
- Intro to Financial Reporting (BSAD#2010) – 3 credits
- Microeconomics (counts in LA&S) (ECON#1200) – 3 credits
- Intro to Managerial Accounting (BSAD#2020) – 3 credits
- Business Law I (BSAD#3500) – 3 credits

### Free Electives to Meet a Minimum of 120 Credits

### Departmental Requirements

- Conference Attendance- students must submit paper demonstrating attendance at conference
- CPR Certified- students must have current First Aid/CPR certification

**Readiness:** (*Institution credit only; does not count toward graduation credits*)

Mathematics:  Placement Exam OR  Basic Math II

English:  Placement Exam OR  Basic College Writing

# 4-Year Plan of Study

## 2018-2019

### CLINICAL EXERCISE PHYSIOLOGY TRACK (B.S. Degree)

#### FRESHMAN YEAR

<i><b>Fall Semester</b></i>	<i><b>17 Credits</b></i>	
EXSS 1011	Introduction to Exercise Science	(3)
BIOL 1200	Anatomy & Physiology I	(4)
BIOL 1800	General Biology I (SMT) (LAB)	(4)
ENGL 1100	Writing I (ART)	(3)
PSY 1100	Intro to Psychological Science (CTW)	(3)

<i><b>Spring Semester</b></i>	<i><b>16 Credits</b></i>	
EXSS 2500	Human Motor Development	(3)
BIOL 1300	Anatomy & Physiology II	(4)
ENGL 1200	Writing II (ART)	(3)
MATH XXXX	College-Level Math (SMT)	(3)
XXXX	LA&S Elective	(3)

#### SOPHOMORE YEAR

<i><b>Fall Semester</b></i>	<i><b>17 Credits</b></i>	
EXSS 2050	Functional Anatomy	(3)
EXSS 2065	Intro to Research in Exercise Science	(3)
EXSS 2071	Exercise Physiology I	(4)
CHEM 1200 <i>OR</i>	Chemistry for Health Sciences (SMT) <i>OR</i>	(4)
CHEM 1300	Gen Chemistry I (SMT)	

<i><b>Spring Semester</b></i>	<i><b>16 Credits</b></i>	
EXSS 2072	Exercise Physiology II	(4)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)
XXXX	Free Elective	(3)

#### JUNIOR YEAR

<i><b>Fall Semester</b></i>	<i><b>15 Credits</b></i>	
EXSS 2300 <i>OR</i>	Nutrition for Exercise & Sport <i>OR</i>	(3)
EXSS 3000	Applied Nutrition	(3)
EXSS 3120	Scientific Foundations of Strength Training & Conditioning	(3)
EXSS 4200	Professional & Career Development	(3)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

<i><b>Spring Semester</b></i>	<i><b>13 Credits</b></i>	
EXSS 3450	Exercise, Testing and Prescription	(4)
EXSS 4045	Cardiovascular and Electrophysiology	(3)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

#### SENIOR YEAR

<i><b>Fall Semester</b></i>	<i><b>14 Credits</b></i>	
EXSS 3600	Exercise Response & Adaptation in Special Populations	(3)
EXSS 4005	Biomechanics & Motor Control of Human Movement	(4)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)
XXXX	Free Elective	(1)

<i><b>Spring Semester</b></i>	<i><b>12 Credits</b></i>	
EXSS 4040	Fitness Management	(3)
EXSS 4950	Internship	(6)
XXXX	LA&S OPTION Course	(3)

**Total Credits: 120**

# EXSS Major Requirements and Prerequisites

## Clinical Exercise Physiology Track

### Liberal Arts and Sciences Requirements for all EXSS majors (19 Credits)

- Anatomy and Physiology I (BIOL 1200) – 4 credits
- Anatomy and Physiology II (BIOL 1300) – 4 credits
- General Biology I (BIOL 1800) – 4 credits
- Chemistry for Health Sciences (CHEM 1200) OR General Chemistry I (CHEM 1300) – 4 credits
- Introduction to Psychological Science (PSY 1100) – 3 credits

### Core Requirements (46 Credits)

- Intro to Exercise Science (EXSS #1011) - 3 credits
- Human Motor Development (EXSS #2500) – 3 credits
- Functional Anatomy (EXSS #2050) – 3 credits
- Intro to Research in Exercise Science (EXSS #2065) - 3 credits
- Exercise Physiology I (EXSS # 2071) – 4 credits
- Exercise Physiology II (EXSS # 2072) – 4 credits
- Sports Nutrition (EXSS #2300) – 3 credits **OR** Applied Nutrition (EXSS #3000) – 3 credits
  
- Exercise Testing and Prescription (EXSS #3450) – 4 credits
- Scientific Foundations of Strength Training & Conditioning (EXSS #3120) – 3 credits
- Professional and Career Development (EXSS #4200) – 3 credits
- Biomechanics & Motor Control of Human Movement (EXSS #4005) – 4 credits
- Fitness Management (EXSS #4040) – 3 credits
- Internship (EXSS #4900) – 6 credits

### Track Requirements (6 Credits)

- Cardiovascular and Electrophysiology (EXSS #4045) - 3 credits
- Exercise Response and Adaptation in Special Populations (EXSS #3600) - 3 credits

### Free Electives to Meet a Minimum of 120 Credits

### Departmental Requirements

- Conference Attendance- student must submit paper demonstrating attendance at conference
- CPR Certified- students must have current First Aid/CPR certification

**Readiness:** (*Institution credit only; does not count toward graduation credits*)

Mathematics:  Placement Exam OR  Basic Math II

English:  Placement Exam OR  Basic College Writing



## 4-Year Plan of Study

2018-2019

### STRENGTH & CONDITIONING TRACK (B.S. Degree)

#### FRESHMAN YEAR

##### *Fall Semester      16 Credits*

EXSS 1011	Introduction to Exercise Science	(3)
BIOL 1200	Anatomy & Physiology I	(4)
ENGL 1100	Writing I (ART)	(3)
MATH 1700	Applied Statistics (SMT)	(3)
PSY 1100	Intro to Psychological Science (CTW)	(3)

##### *Spring Semester      16 Credits*

EXSS 2500	Human Motor Development	(3)
BIOL 1300	Anatomy & Physiology II	(4)
ENGL 1200	Writing II (ART)	(3)
XXXX	LA&S Elective	(3)
XXXX	Free Elective	(3)

#### SOPHOMORE YEAR

##### *Fall Semester      16 Credits*

EXSS 2050	Functional Anatomy	(3)
EXSS 2065	Intro to Research in Exercise Science	(3)
EXSS 2071	Exercise Physiology I	(4)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)

##### *Spring Semester      17 Credits*

EXSS 2072	Exercise Physiology II	(4)
EXSS 3120	Scientific Foundations of Strength Training & Conditioning	(3)
EXSS 2023	Introduction to Sports Medicine	(3)
EXSS 3011	Practicum in Strength Train & Cond/ 1-A	(1)
XXXX	LA&S Elective	(3)
XXXX	LA&S Elective	(3)

#### JUNIOR YEAR

##### *Fall Semester      14 Credits*

EXSS 1450	Weight Training for Athletes	(1)
EXSS 2300	Nutrition for Exercise and Sport	(3)
EXSS 4200	Professional & Career Development	(3)
EXSS 3012	Practicum in Strength Train & Cond/ 1-B	(1)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

##### *Spring Semester      14 Credits*

EXSS 1460	First Aid/CPR / AED	(1)
EXSS 3450	Exercise, Testing and Prescription	(4)
EXSS 3001	Assessment for Strength Train & Cond	(1)
EXSS 4000	Fundamentals of Coaching	(3)
EXSS 4002	Practicum in Strength Train & Cond / 2-A	(2)
XXXX	LA&S OPTION Course	(3)

#### SENIOR YEAR

##### *Fall Semester      15 Credits*

EXSS 4003	Practicum in Strength Train & Cond / 2-B	(2)
EXSS 4005	Biomechanics & Motor Control of Human Movement	(4)
EXSS 4040	Fitness Management	(3)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

##### *Spring Semester      12 Credits*

EXSS 4950	Internship	(6)
XXXX	LA&S OPTION Course	(3)
XXXX	Free Elective	(3)

**Total Credits: 120**

# EXSS Major Requirements and Pre-requisites Strength and Conditioning Track

## Liberal Arts and Sciences Requirements for all EXSS majors (11 Credits)

- Anatomy and Physiology I (BIOL 1200) – 4 credits
- Anatomy and Physiology II (BIOL 1300) – 4 credits
- Introduction to Psychological Science (PSY 1100) – 3 credits

## Core Requirements (46 Credits)

- Intro to Exercise Science (EXSS #1011) - 3 credits
- Human Motor Development (EXSS #2500) – 3 credits
- Functional Anatomy (EXSS #2050) – 3 credits
- Intro to Research in Exercise Science (EXSS #2065) - 3 credits
- Exercise Physiology I (EXSS # 2071) – 4 credits
- Exercise Physiology II (EXSS # 2072) – 4 credits
- Sports Nutrition (EXSS #2300) – 3 credits
- Exercise Testing and Prescription (EXSS #3450) – 4 credits
- Scientific Foundations of Strength Training & Conditioning (EXSS #3120) – 3 credits
- Professional and Career Development (EXSS #4200) – 3 credits
- Biomechanics & Motor Control of Human Movement (EXSS #4005) – 4 credits
- Fitness Management (EXSS #4040) – 3 credits
- Internship (EXSS #4900) – 6 credits

## Track Requirements (15 Credits)

- First Aid/CPR/AED (EXSS 1460) – 1 credit
- Introduction to Sports Medicine (EXSS 2023) – 3 credits
- Weight Training for Athletes (EXSS 1450) – 1 credit
- Assessment for Strength Training and Conditioning (EXSS 3001) – 1 credit
- Practicum in Strength Training and Conditioning 1A (EXSS 3011) – 1 credit
- Practicum in Strength Training and Conditioning 1B (EXSS 3012) – 1 credit
- Practicum in Strength Training and Conditioning 2A (EXSS 4002) – 2 credits
- Practicum in Strength Training and Conditioning 2B (EXSS 4003) – 2 credits
- Fundamentals of Coaching (EXSS 4000) – 3 credits

Free Electives to Meet a Minimum of 120 Credits

## Departmental Requirements

- Conference Attendance- student must submit paper demonstrating attendance at conference
- CPR Certified- students must have current First Aid/CPR certification

**Readiness:** (*Institution credit only; does not count toward graduation credits*)

Mathematics:  Placement Exam OR  Basic Math II

English:  Placement Exam OR  Basic College Writing

# PROFESSIONAL CONFERENCES

All students must attend one professional conference prior to graduation. This requirement will only be considered fulfilled if the student attends the conference and its seminar for a full day. Students who choose not to stay for the duration of the conference will not receive credit. To receive credit the student must submit a four-page paper that summarizes the conference seminar they attended and write about their overall conference experience. The department frequently posts approved conferences on the Student Information/Announcement Bulletin Board. Attendance to conferences other than those posted is possible but need to receive approval by your Academic Advisor beforehand.

## APPRENTICESHIPS

Apprenticeships are 1, 2, or 3 credit mentoring opportunities with specific professors. They are designed to enhance theory through work in a specific area, such as exercise testing, strength training, fitness management, personal training, and research skills.

A variety of Apprenticeships will be advertised on the Exercise Science Bulletin Board. If you are interested in these opportunities, you should apply to the faculty sponsor in the semester prior to the semester in which the work will be done. You must be a junior or senior to participate in an Apprenticeship.

### *Objectives and Learning Outcomes*

Specific learning outcomes will vary according to the apprenticeship experience designed, and the learning contract signed.

In all Apprenticeships students will:

- develop working relationships with professionals in the field
- apply academic learning in a work setting
- learn new job-specific skills and organizational knowledge
- perform duties, projects, and/or services that meet organizational needs
- develop work habits and attitudes needed as a professional
- gain greater awareness of personal strengths

### *Method of Assessment*

- Mentor evaluation of the degree of competence displayed in the work done.
- Reflective paper on the experience and the knowledge and skills gained.

### *Grading Procedure*

Mentor evaluation of work performance	75%
Paper	25%

## ***Required Readings***

Vary according to the apprenticeship experience. Readings will be part of the learning contract

## ***Apprenticeship Requirement***

Hours required: 45 hours per credit

## ***Time Sheets***

A time sheet is a record of the apprentice's hours and tasks. Each sheet *must* be signed by the Mentor.

## ***Learning Contract***

This is a document that describes specifically the apprentice's role, responsibilities, learning goals, and objectives (academic skills, personal development skills, professional development skills) for the term. The student's input is included in the final contract which both student and mentor will sign. This document is used to check progress throughout the semester.

## ***Reflective Paper***

This written assignment will be a letter to your colleagues at Fitchburg State University. It will cover the following topics:

- What you have accomplished and what you have learned (skills and knowledge) from the Apprenticeship.
- Whether you have fulfilled the goals outlined in the Apprenticeship Learning Contract (or how/why they have changed.)
- Obstacles faced and methods you developed for overcoming them and what you learned in the process.
- Any other reflections on the apprenticeship experience you want your colleagues to know.

## **STUDENT ROLE AND RESPONSIBILITIES**

The student contracts to serve in a paraprofessional capacity. The student is ultimately responsible for insuring the experience fulfills all the learning goals and course requirements:

1. Fulfillment of the required hours
2. Evaluations by the mentor
3. Formal Learning Contract
4. Time sheets
5. All written assignments

## **MENTOR ROLE AND RESPONSIBILITIES**

The Mentor directly supervises the Apprentice and trains the student in the work duties, overseeing the daily work. He/she supports the student's learning goals and provides valuable feedback and insights. Specific responsibilities include:

1. Provide thorough orientation to the organization and job role training
2. Discuss and sign formal Learning Contract

3. Provide on-going and constructive feedback
4. Support apprentice's achieving the goals in the Learning Contract
5. Complete written mid-term and final evaluation forms for the apprentice, and hold evaluation discussions

# Internship Program

EXSS students have completed their internships at a number of sites. Among these are: Tufts Medical Center (Pediatric Echocardiology) in Boston, Department of Emergency Medicine at Heywood Hospital, Wachusett Dirt Dawgs, CrossFit EXP, the Cardiac Rehabilitation Facility at Emerson Hospital, Department of Pulmonary Medicine at HealthAlliance Hospital, Exercise Physiology lab at Children's Hospital in Boston, Caveny Chiropractic Neurology, Winchester Hospital Chiropractic Center, Joslin Diabetes Clinic, Camp Shane in Ferndale New York, USARIEM (United States Army Research Institute of Environmental Medicine), Women's Professional Softball (Riptide), U-Mass Lowell Sports Performance, USA Triathlon National Training Center, Mike Boyle's Strength & Conditioning, Pfizer Corporate Wellness Center, Global Fitness, Orchard Hills Fitness Club, Verizon Health & Wellness Center, Assumption College Athletic Department, Cushing Academy (hockey team), Gardner Public Schools (track and field teams), St. John's Prep School (track team), College of the Holy Cross Athletic Department, Harvard University Athletic Department, Ramsey Rehab, Townsend Public Schools (education), Walt Disney World, FSU Athletic Training Room, FSU athletic teams, FSU Recreation and Athletic Departments, These are just a few of the site and additional sites are continually being developed.

## Overview of the Internship Program

The internship program in the EXSS department is an experiential education program. The student intern contracts with an organization to provide specific outcomes/services that meet the students' learning objectives as well as the needs of the organization.

Using the actual work as the foundation, the students actively engage in their own educational and professional growth through conscious reflection and analysis. They grow by relating to professionals in the field, practicing what they have been learning conceptually, striving for high (but attainable) expectations, and systematically reflecting on their experiences.

**To be eligible to participate in an internship, students must have an EXSS GPA and overall GPA of 2.5 or greater, hold a current, valid CPR certification, have attended a professional conference and turned in their conference paper to their academic advisor, and have completed EXSS #3450 *Exercise Testing and Prescription*. Additionally, students doing an internship in a clinical setting must have completed**

## **EXSS #4045 Cardiovascular and Electrophysiology and EXSS #3600 Exercise Response and Adaptations in Special Populations.**

**Note:** Students planning to complete their internships at most clinical sites will need to complete additional requirements, including several vaccinations, a CORI check, and an online orientation. *Please plan accordingly, as these additional requirements will require extra time and must be completed before you can register for your internship.*

### **Definitions**

**Internship Site Supervisor:** This is the person you will report to while at your internship. They are overseeing your experience at the site.

**FSU Internship Coordinator:** This is a EXSS faculty member at FSU who is overseeing the internship program that given year. They will be conducting the pre-internship meetings and will collect the learning objectives (via e-mail) for students interning in the fall or spring of that year, by the assigned date.

**FSU Internship Supervisor:** This is a EXSS faculty member at FSU whose internship section you will be in (Web 4/Blackboard) if you are interning in the fall or spring. This is the person who will be grading your internship assignments.

**Academic Advisor:** This is the EXSS faculty member at FSU that you meet with in the fall or spring regarding academic advising. If you are doing an internship in the summer, your academic advisor will be grading your internship assignments. If you are doing a summer internship, you should e-mail the draft of your learning objectives to your Academic Advisor by the assigned date.

## **II. Program Objectives**

**In the Internship Program, students will:**

- Develop working relationships with professionals in the field
- Observe the organization's functions and roles in action
- Apply academic learning in a work setting
- Learn new job-specific skills and organizational knowledge
- Perform duties, projects, and/or services that meet organizational needs
- Develop work habits and attitudes needed as a professional
- Gain greater awareness of personal strengths, interests and career/educational goals

## **III. Requirements**

**Credits/Hours:** The Internship is 6 credits and a total of 240 hours at the internship site.

*It is possible to do 120 hours (3 credits) at one site and then an additional 120 hours (3 credits) at another site.*

**Required Internship Meetings:**

There are two mandatory meetings required for the internship:

- The first is an informational internship meeting. There is one meeting during the fall semester for those students who plan on doing their internship in the spring, and there is a meeting during the spring semester for those students who plan on doing their internship over the summer or during the fall semester.
- The second meeting will be for your final internship presentation. Final internship presentation meetings are held three times a year in August, December, and in May.

### **Assignments:**

- Learning Objectives
- Journals
- Time sheets
- Informational Interview
- Reflective Paper
- Final Internship Presentation

### **Description of Assignments:**

*These are general descriptions. You may be given more specific requirements for each of these assignments in the syllabus once you are registered for the internship course.*

### ***Learning Objectives:***

The Learning Objectives is a typed document that describes specifically the intern's role, responsibilities, learning goals, and objectives (academic, personal development, career development, and professional development skills) for the internship. This document is used to check the intern's progress throughout the semester. You should refer to the Learning Objective Guidelines included in this document to write your learning objectives.

### ***Weekly Journal:***

The journal is a collection of daily notes of your observations, reflective thoughts, questions and feelings about your internship experience. A critical incident journal is a technique that helps monitor and evaluate the internship experience in relation to the specific goals and learning objectives you set for the experience.

The Weekly Journal will be made up of two individual parts:

- Daily Journal Entries
- Weekly Summary

**Daily Journal Entries:** For every day of the week that you attend your internship you should write a 1 or 2 paragraph reflection about your activities for that day. This reflection does not need to include every detail of your day, but should instead focus on what you learned that day. What you have learned and taken away from the day is the most important part.

**Weekly Summary:** The weekly journal is a summary of what you did that week that helped you to progress in attaining your learning objectives. Please review your learning objectives and

write about which objective that you learned the most about for the week. You should also write about learning objectives that you have not improved on that week, or improved to a lesser extent, and discuss strategies for how you will move forward with completing those objectives in your remaining internship hours. The weekly summary should be between 1 and 2 double spaced pages (this does not include the daily journal entries).

**Weekly submission guidelines will be outlined in the course syllabus.**

### ***Time Sheets:***

A time sheet is a record of the intern's hours and tasks at the internship site. Each sheet *must* be signed by the intern's Internship Site Supervisor. Your time sheets are submitted to your FSU Internship Supervisor at the end of your internship, on the day you present your final internship presentation. Time sheets are created by the student and can be in the form of a table where date and # of hours are recorded, or a calendar where # of hours are recorded for each day.

### ***Informational Interview/Professional Interview:***

Locate one professional in your chosen career field. (NOTE: You may not interview your supervisor, friends, or relatives for this assignment.) Contact and set up an informational interview with this individual. This process takes time, so start early.

#### ***Focus on:***

- *How did this person decide on his/her career?*
- *How did this professional get to their present position?*
- *What is a typical day like?*
- *What advice would he/she give to people entering this field?*
- *What skills does he/she look for on a resume when an entry-level position is filled?*

In your written report of the interview, include: exact name, title, and phone number, why you selected this person for the interview, the list of questions asked and a summary of the answers you received. Draw a general conclusion about the career path discussed: Did the interview help you decide/solidify whether you would like to enter that field? What would your job description likely be if you entered the field? Are there any additional qualifications you need in order to begin working in this field?

### ***Reflective Paper:***

This written assignment will be a letter to your colleagues at Fitchburg State University and will cover the following topics:

- What you have accomplished and what you have learned (skills and knowledge) from the Internship experience.
- Whether you have fulfilled the goals you outlined in your Learning Objectives (or how/why they have changed.)
- Obstacles faced and methods you developed for overcoming them and what you learned in the process.
- Observations about your professional field and organizations (challenges, opportunities, issues)
- How your definition of “professionalism” may have changed.
- What your future educational and career plans are
- Any other reflections on the internship experience you want your colleagues to know



### ***Final Internship Presentation:***

This is a **10 minute presentation** of the work done, and the things accomplished. The reflective paper may serve as a basis for this talk. Use of multimedia enhancements to this talk, such as Power Point or video, is encouraged. This is a *professional presentation*. ***Your demeanor should be formal as should be your dress.*** See the Final Internship Presentation Guidelines.

### ***Mid-Term and Final Internship Evaluations***

Please have your Internship Site Supervisor do your mid-term evaluation after you have completed ~ 120 hours of your internship and the final evaluation upon completion of your 240 hours. You will turn in these evaluations on the day of your final internship presentation.

## **IV. Student Role and Responsibilities**

The student intern is primarily responsible for developing the internship and gaining approval for the internship from the FSU Internship Coordinator/Academic Advisor and Internship Site Supervisor. The student contracts with the organization to serve in a paraprofessional or professional capacity during the semester. The student is ultimately responsible for ensuring the experience fulfills all the learning goals and course requirements:

1. Attendance at both mandatory Internship Meetings (Informational meeting before the student begins the internship and the meeting for your Final Internship Presentation)
2. Typed Learning Objectives document (Objectives are drafted then discussed/reviewed with FSU Internship Coordinator/Academic Advisor first, and then by their Internship Site Supervisor, *prior* to final approval).
3. Learning Objectives Form and Contractual agreement form signed by the Internship Site Supervisor and submitted along with the Red Card Checklist to the FSU Internship Coordinator/Academic Advisor by deadline.
4. Submission of weekly Journals.
5. Fulfillment of the required hours at the site to meet credit criteria (*signed time sheets will be the documentation*).
6. Evaluations by the Site Supervisor (mid-term evaluation AND final evaluation).
7. Informational Interview
8. Reflective Paper
9. Time sheets (to be turned in to faculty advisor at the time of student's Final Internship Presentation).
10. Final Internship Presentation

## **V. Internship Site Supervisor Role and Responsibilities**

The Internship Site Supervisor, who directly supervises the student intern, plays a dual role. As the staff *supervisor*, he/she trains the student in the work duties and oversees the daily work. As an educational *mentor* for the student intern, he/she supports the student's learning goals and provides valuable feedback and insights. Specific responsibilities include:

1. Provide thorough orientation to the organization and job role training
2. Discuss and sign formal Learning Objectives document
3. Review and sign Fitchburg State University Contractual Agreement
4. Review and sign weekly time sheets
5. Provide on-going and constructive feedback

6. Provide appropriate opportunities to learn about the work unit, organization, and profession
7. Support the intern achieving his/her goals in the Learning Objectives
8. Be available to discuss topics and issues for selected written assignments
9. Complete written mid-term and final evaluation forms for the intern, and hold evaluation discussions

## **VI. FSU Internship Supervisor Role and Responsibilities**

The FSU Internship Supervisor for the internship serves as a resource to the student during the placement process, grades all written assignments, and monitor's the student's progress throughout the internship. In addition, he/she serves as the University's liaison between the organization (site supervisor), student intern, and Fitchburg State University. Responsibilities include:

1. Orient the site supervisor to FSU requirements and quality expectations
2. Grade and record all assignments
3. Be available to support the site supervisor on matters related to the internship
4. Be available to advise student interns on any program-related or work-related issues as needed
5. Contacting the site supervisor (in person or by phone) during the time of the internship
6. Submits final grade for semester

## **VII. Grading**

*The way you will be graded will be outlined in the course syllabus.*

# Learning Objectives

Student Intern Name \_\_\_\_\_ Internship Site \_\_\_\_\_

Site address \_\_\_\_\_

Site Supervisor Name \_\_\_\_\_ Phone \_\_\_\_\_

Internship dates: **Beginning:** \_\_\_\_\_ **Ending:** \_\_\_\_\_

Compensation \_\_\_\_\_ (if none, report \$0)

**To Intern:** *Is there anything that would prevent you from carrying out the assigned duties?  
If so, please make all parties aware at this time.*

**Job description** Obtain a job description from the internship site.

Please attach a copy of the job description to this form, along with your final, revised learning objectives.

**Learning Objectives:** Describe what your learning objectives will be.

**I. Academic**

Learning Objectives  
*What I want to learn*

Tasks and Strategies  
*How I am going to learn it?*

**II. Professional Development**

Learning Objectives  
Tasks and Strategies  
*What I want to learn*

*How I am going to learn it?*

**III. Personal Development**

Learning Objectives  
*What I want to learn*

Tasks and Strategies  
*How I am going to learn it?*

**IV. Job Hunting Goals**

Learning Objectives  
*What I want to learn*

Tasks and Strategies  
*How I am going to learn it?*

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*You are encouraged to meet with each other periodically as you are out on your internship in order to discuss experiences informally, and glean suggestions and ideas from your colleagues.*

**Site Supervisor Signature:** \_\_\_\_\_ **AND**

**FSU Internship Supervisor Signature:** \_\_\_\_\_

# ACADEMIC ADVISING

Each of you will be assigned an academic advisor who will work with you to ensure that you are progressing through the program. Advisors will meet with you on a regular basis to provide academic and career counseling, to help hone your presentation skills, and to assist you in building your portfolios. Of course, you do not have to wait for your advisor to contact you – each faculty member holds regularly scheduled office hours, and are always willing to meet at other times as needed. Take advantage of the faculty as a resource!

## **Course Scheduling**

Each advisor posts a list of times for you to sign up for academic advising. This guarantees you ample time to discuss your course selections and your academic progress. Course scheduling occurs twice a year during October and March. During the registration period in April, you will also sign up for summer session courses, if you wish to take them.

## **Portfolio Development**

During your junior year, you will take a course in Professional and Career Development, where you will develop a Portfolio of your accomplishments achieved throughout your tenure at Fitchburg State University. This portfolio will be evaluated and graded by your class instructor. The portfolio must include, but is not limited to, the following: a cover letter, resume, list and description of courses taken, list of all exercise testing competencies, list of professional certifications, names of 2 professional references, transcripts, and a final statement of purpose for employment or graduate school application.

# ACADEMIC POLICIES AND PROCEDURES

## **Good Academic Standing for EXSS majors**

To achieve good academic standing, students must:

- Maintain an overall cumulative GPA of 2.0 or higher in all college courses;
- Maintain a cumulative GPA of 2.5 or higher in EXSS courses

## **Minimum Grade Requirement for EXSS Courses**

In addition to the departmental 2.50 GPA requirement, the following courses carry a prerequisite minimum grade of 2.0 in (EXSS 1011) Intro to Exercise Science *and* (BIOL 1200) Anatomy and Physiology I in order to move forward in the major and register for the courses listed below:

- EXSS 2050 Functional Anatomy
- EXSS 2065 Introduction to Research in Exercise Science
- EXSS 2071 Exercise Physiology I

- EXSS 2300 Sports Nutrition
- EXSS 2400 Health Promotion
- EXSS 3000 Applied Nutrition
- EXSS 4040 Fitness Management
- EXSS 4200 Professional and Career Development

Students who do not meet the 2.0 minimum grade requirement in EXSS 1011 and/or BIOL 1200 will only be allowed to re-take these courses once in order to achieve the grade requirement.

### **Early Intervention for Academic Difficulties**

Any student failing to maintain good academic standing in a given semester will be required to meet with their advisor.

### **Departmental Probation**

If a student's cumulative GPA in the major falls below 2.5 at the end of any semester that student will be placed on departmental probation and given one semester to bring his/her GPA up to 2.5 or better. Failure to do so will result in removal from the EXSS major, with the following two exceptions:

- A student on probation who has attempted fewer than 33 semester hours and who has maintained a cumulative GPA of 2.1 or higher in major courses may enroll for a third semester to improve academic standing.
- A student on probation who has attempted 33 to 59 semester hours and who has maintained a cumulative GPA of 2.3 or higher in major courses may enroll for a fifth semester to improve academic standing

### **Students on probation must:**

- Meet with their academic advisor before the start of the second week of each semester to review current course load and arrange periodic meetings throughout the semester.
- Utilize the many resources the university offers, including faculty, Counseling Services, Academic Success Centers, Expanding Horizons, Career Services, and other support systems, as needed.

Students not making satisfactory progress in completing the academic requirements of the major for two consecutive semesters will be required to leave the EXSS major.

A student may be on academic probation in the EXSS major only once. Students who return to good academic standing after being on probation must maintain an EXSS GPA of 2.5 or higher; falling below a GPA of 2.5 in any subsequent semester will result in automatic removal from the major.

For information regarding **University Probation** please read the *Undergraduate Academic Policies and*

Procedures from the University Catalog:

[https://fitchburgstate.acalogadmin.com/preview/content.php?catoid=32&navoid=2056#Additional\\_Undergraduate\\_Day\\_Policies\\_and\\_Procedures](https://fitchburgstate.acalogadmin.com/preview/content.php?catoid=32&navoid=2056#Additional_Undergraduate_Day_Policies_and_Procedures)

## **Appeal Process**

Any student required to leave the EXSS major due to deficient academic progress may appeal to the EXSS Student Affairs Committee, who deal with issues of academic standing. The student will be allowed to present, in writing, evidence of significant extenuating circumstances. The Student Affairs Committee will take this information into consideration and issue a recommendation to the Chair of the EXSS Department within 24 hours following the hearing. The Student Affairs Committee may also make recommendations to the chair regarding plans of action for students on academic probation. The EXSS Department Chair will notify the student within 3 days of the departmental ruling.

## **Inappropriate Use of Technology in the Classroom**

The Exercise and Sports Science Department has established the following policy regarding inappropriate use of technology in the classroom.

### **Definitions**

- Technology includes cell phones, laptop computers, computer tablets, Ipads, portable recording or listening devices.
- Inappropriate use includes the use of devices for personal entertainment, communication with people outside the classroom, or for use other than class related purposes.

### **Policy**

It is at the discretion of the course instructor to ask a student to leave the classroom for any suspected or obvious inappropriate use of technology. If a student is a repeated offender then a formal complaint may be filed with the Dean of Student and Academic Life.

## **Academic Awards**

Each spring, at Honors Convocation, the department gives awards to Exercise and Sports Science students who have demonstrated leadership in the department as well as excellent potential for success in the field.

## **The Exercise and Sports Science Club**

Consider joining the Exercise and Sports Science Club. Social and academic activities will be planned throughout the year under the auspices of the club.

# STUDENT FEEDBACK

There are several opportunities for students to become involved in shaping their own learning opportunities. These are described below:

## *Exercise Science Curriculum Committee:*

Faculty and student representatives will convene biannually to address such issues as course offerings, teaching needs, administrative challenges, and issues relevant to the administration of the major. An annual review of the curriculum to ensure that the skills, knowledge, and abilities needed in the profession are included throughout the course work in the depth required for professional success.

Student representatives from each track will be selected in the fall for the academic year. A meeting of the majors will be held, and students will make nominations from the floor. The meeting and agenda will have been announced via flyer, email, and classes approximately 10 days prior to the meeting date. Each term of representation is two consecutive semesters; students may share the position and may serve multiple terms. Student representatives must be in good academic standing, and have no incomplete grades.

## *Meetings of the Major:*

In accordance with departmental policies, meetings of the students and faculty must be held each semester for the following purposes: (1) updates and announcement about the major, (2) immediate concerns/issues of the students, (3) student interest in courses being offered the following semester, (4) pre-registration information for select courses (e.g. internship seminar schedule), and (5) Exercise Science Club updates.

## *Feedback from Students:*

In addition to the Exercise Science Curriculum Committee and meetings of the major, there would be several opportunities for students to give feedback about the courses and the major. The preferred means is conversation with course instructors, the Program Coordinator, or the Department Chairperson. Another avenue is the use of a reflective feedback form, generated by the instructor. A third form of feedback would be the use of a departmental suggestion box with active responses via bulletin board. A fourth means of gathering information is an exit interview with students who choose to leave the major and/or the University to ascertain their reasons for leaving.