

# **Sports Medicine Program Review**

# Pepperdine University Program Review Guidebook: Academic 2015

## Sports Medicine Program

### OVERVIEW

#### PROGRAM REVIEW: INTRODUCTION

A program review is a systematic process for evaluating and improving academic programs. It is conducted through self-evaluation and peer evaluation by external reviewers, with an emphasis on assessing the quality and degree of student learning within the program. The comprehensive analysis which the review provides and the resulting Memorandum of Understanding are used to stimulate curriculum and programmatic changes and to inform planning and budgeting processes at various levels. The program review cycle occurs every five years.

Program review is a required element in WASC Senior College and University Commission (WSCUC) accreditation and has been a part of Pepperdine's assessment cycle since 2003. While data provides the foundation for effective program review, assessment of student learning, and other quality improvement strategies, the data must be turned into evidence and communicated in useful formats. The program review does this.

When implemented effectively and followed up deliberately, program review is a powerful means for engaging faculty, staff, and administrators in evaluating and improving programs to enhance student learning. The review process is an opportunity to refine a program to meet the changing needs of student learning, retention, curriculum in various disciplines, and student support services. It is also a purposeful opportunity to link decision-making, planning, and budgeting with evidence.

This guidebook provides a framework and resources to help with the review.

#### GUIDING PRINCIPLES

The process is intended to be meaningful, foremost, for the department and its enhancement of student learning. As a result, the process is flexible in order to serve the needs of both small and large programs as well as academic, co-curricular, and student support programs. The review should be a collaborative process involving faculty, staff, administrators, and students in order to align more effectively the college or department with institutional goals and objectives.

Two guiding principles are embedded in this Guidebook and are consistent with WASC Senior College and University Commission (WSCUC) standards:

**\* Ongoing Evaluation of What Students Learn:**

Evidence-based program review includes: a review of program learning outcomes; evaluation of the methods employed to assess achievement of the outcomes; and analysis and reflection on learning results, retention/graduation rates, core competencies, and other outcomes data over a multi-year period.

**\* Quality Assurance, Planning, and Budgeting Decisions Based on Evidence:**

The results of the program review are to be used for follow-up planning and budgeting at various decision-making levels.

### **PREPARATION FOR PROGRAM REVIEW**

The program chair is responsible for the planning of the review. An internal committee or working group should be developed to allocate responsibilities for writing the program review including data collection, writing, and use of resources. It is recommended that a meeting occur between the committee and the Office of Institutional Effectiveness (OIE) to review data needs.

### **PROGRAM ALIGNMENT WITH THE UNIVERSITY, MISSION, AND INSTITUTIONAL OUTCOMES**

Program reviews focus on the meaning, quality, and integrity of a program as it relates to student learning and the mission of Pepperdine:

Pepperdine University is a Christian university committed to the highest standards of academic excellence and Christian values, where students are strengthened for lives of purpose, service, and leadership.

Each department carries out the University mission and institutional learning outcomes (ILOs). The ILOs are formed by two components:

- \* Core commitments: knowledge and scholarship, faith and heritage, and community and global understanding
- \* Institutional values: purpose, service, and leadership

Each basic commitment is seen through the lens of three essential institutional values drawn from the University mission statement: purpose, service, and leadership. These basic commitments should link to measurable objectives as stated in the student learning outcomes (SLOs).

### **OVERVIEW OF PROGRAM REVIEW COMPONENTS**

Program review at Pepperdine University is conducted on a five-year review cycle that involves three main components and six steps (see diagram below):

#### **SELF STUDY:**

- An in-depth, internal analysis written by program faculty/staff
- Department faculty or program staff (for co-curricular and student support services) conduct a departmental self-study within guidelines provided in the Guidebook. This portion of the review identifies program strengths and limitations, and suggests solutions to identified problems.

#### **EXTERNAL & INTERNAL REVIEWS:**

- An external review conducted by an outside expert in the field or discipline. The Guidebook describes how to secure qualified, objective external reviewers, including those with understanding and experience in addressing student learning outcomes assessment. Once the self-study is completed, the external review is organized.
- An internal review by the Advancement of Student Learning Council (ASLC)

#### **CLOSING THE LOOP:**

- A Quality Improvement Plan (QIP) developed by the department
- A Memorandum of Understanding (MOU) developed by the dean

Closing the Loop is used to describe the act of making decisions based on evidence. The most important product of a program review is the advancement of student learning. Therefore, the program review cycle ends by identifying evidence-based changes in the

**QIP, and then the MOU explains how the plan will be supported and carried out over the next five years.**

### **GLOSSARY OF TERMS**

*Please download the GLOSSARY OF TERMS.*

GLOSSARY\_OF\_TERMS.pdf

### **Evidence**

*Please attach evidence*

## **INTRODUCTION**

### **INTRODUCTION**

**Reviews begin with an introduction that provides a context for the review. In contrast to the rest of the self-study report, this portion is primarily descriptive and should include:**

#### **1. INTERNAL CONTEXT**

**This begins with an overview of the program describing (as appropriate).**

- a. where the program is situated (school/division),**
- b. degrees granted, concentrations available, programs offered**
- c. where is the program located (campus location)**

Frank R. Seaver College, founded in 1972, is the University's residential college of letters, arts, and sciences and is located on the 830-acre Malibu campus. Pepperdine enrolls ~7,700 students in its five colleges and schools, with Seaver College making up the largest portion, enrolling ~3,000 students (freshmen classes ranging from 700-900 students annually). Seaver College is comprised of eight academic divisions, one of which being Natural Science. The Sports Medicine Program is one of seven programs in the Natural Science Division of Seaver College at Pepperdine University. The Sports Medicine program offers two undergraduate degrees majors, Bachelor of Science (B.S.) or Bachelor of Arts (B.A.), in sports medicine. These two degree options require similar unit requirements but differ primarily in that the B.S. degree requires more courses in the natural sciences (e.g., physics, chemistry). Students majoring in other areas but interested in sports medicine may minor in sports medicine by taking 19-20 units in sequence.

Our degree majors (B.S. and B.A.) are designed to prepare students for graduate work in disciplines related to the exercise sciences or for careers in applied or clinical health professions; both degree routes require extensive laboratory experiences. Students are encouraged to participate in research in the discipline and or internship/volunteer venues relating to their particular emphasis and future professional aspirations.

#### **d. Provide a brief history of the program.**

The Sports Medicine program was established, and completed its first academic year, in 1972-1973 under the name Physical Education. At this time, the program curriculum reflected the current body of knowledge in the area of physical education and offered its degree recipients a teaching credential in secondary education in the area of physical education. Over the course of the next 40 years, interest and enrollment in the program mirrored the expansion of the discipline as a whole. From program inception to the current academic year, the program offers a rigorous

and progressive education that reflects the advancements made by scholars and practicing clinicians in the field of exercise science. The program adopted several name changes over its history, including but not limited to: Recreation Education, Physical Education, and Kinesiology. The current program name, Sports Medicine, was formally adopted in ~1980, such that graduates of the program earned a Bachelor of Science (B.S.) in Sports Medicine.

In 2006, the Natural Science Division eliminated the Physical Education major. In the same year a Bachelor of Arts (B.A.) was added to the Sports Medicine program as a degree option and its curriculum was endorsed by the American College of Sports Medicine as meeting the knowledge, skills, and abilities required for health and fitness science. Currently, the Sports Medicine program offers a B.S. in Sports Medicine (53 units; 28 upper-division), a B.A. in Sports Medicine (47 units; 34 upper-division), and a Minor in Sports Medicine (19-20 units).

Students choosing a major in Sports Medicine are typically interested in various careers in the health professions. Interest in these professions and thus in the major, both at Pepperdine and across the nation is increasing: enrollment in Sports Medicine is historically among the highest in the Natural Science Division (along with Biology) as well as at Seaver College. Enrollment increases with concomitant retention and graduation rates, followed by successful admission into graduate school program (e.g., medical school, physical therapy, physician assistant) are among some of the program's indicators of success.

One of the overarching goals of the Sports Medicine program is to provide students with breadth and depth of understanding into biology of the human body and the role of physical activity in health and disease. Our upper-division courses challenge students to apply their understanding of the functioning of the human body across various spectrums: across the lifespan, healthy, diseased, and in a variety of environmental. Through these courses our students learn not just foundational knowledge in human biology and exercise science, but they also learn to think and communicate critically and creatively. We provide students with opportunities for experiential learning through involvement in internships and undergraduate research. Sports Medicine students engaging in undergraduate research provides a rich experience in application of the scientific method. These projects require a student to work intimately with data collection, analysis, and presentation of the findings through oral presentation and/or written publication. Beyond the opportunity for involvement in undergraduate research, Sports medicine majors are encouraged to participate in the Honors Research Program, which is designed to promote independent research by students that will culminate in a degree depicting Honors in Sports Medicine. Funding for undergraduate research projects include: 1) extramural grants secured by program faculty, 2) intramural grants from Seaver College, or 3) private endowments and contributions made to the Sports Medicine program earmarked for such purposes.

**e. Describe the changes made to the program since the last review.**

In an annual review of the Sports Medicine program in 2009-2010, the faculty rewrote the program objectives and student learning outcomes; editing the previous seven program objectives and 25 student learning outcomes into six program objectives/goals and four measurable program-learning outcomes (PLO). Over the past five years of program review, the faculty saw unnecessary overlap and removed one of the program learning outcomes. As of the 2012-2013 academic year, the Sports Medicine program has six program goals and three program learning outcomes.

In addition to modifying the program learning outcomes, the program review process over the past five years provided evidence for the following programmatic and curricular changes: 1)

removal of the Minor in Coaching (2012), 2) removal of a course requirement (Physics 203) from the B.S. degree route (2012), 3) removal of BIOL 230 as course that satisfies the GE lab science requirement (2014), and 4) the opening of a new tenure-track position in Sports Medicine for AY 2016-17. The changes to the curriculum (1-3) are described in detail in a later section of this review (see Meaning of the Degree: changes to the curriculum).

Since the time of the last review some changes in SPME faculty titles and appointments have occurred. Dr. Michael Feltner, Professor of Sports Medicine (expertise in biomechanics), became the Associate Dean of Seaver College (2011-2014), the interim Dean of Seaver College (2014-2015), and is currently serving as the Dean of Seaver College (2015 to present). Dr. Cooker Perkins Storm (expertise in exercise physiology/epidemiology) was promoted and received tenure (2012).

New full-time tenure-track position in Functional Anatomy: The increase in student enrollment in Sports Medicine has far exceeded the resources allocated to the program. In addition to being among the highest enrolled programs in the Division and College, we typically outperform these highly enrolled programs when it comes to retention in the major. Student choosing Sports Medicine stay in Sports Medicine and several students change their majors to Sports Medicine during their undergraduate career (numbers for enrollment and retention presented in detail in later sections of the program review). The combination of these factors, higher enrollment and a continued high retention rate, has increased the number of students enrolled in Sports Medicine courses, requiring larger class sizes, more course offerings throughout the academic, and offering courses towards fulfillment of the degree in the summer. While there are currently eight full-time tenure-track faculty in Sports Medicine, four of these faculty do not teach courses in the curriculum (B.S. and B.A.) based on administrative release. Therefore, only 50% of the full-time tenure-track faculty in Sports Medicine meet the required teaching load of the curriculum with a doubling of students enrolled in each class. This imbalance is also reflected in the number of faculty available to take on undergraduate research students. Likewise, because of the unbalanced exposure of a portion of the SPME faculty to the students, only a portion of the faculty handle all of the advising, mentoring, and a majority of the request for letters of recommendation from this growing body of students. In addition, not only are these faculty not able to meet the teaching demands of the required courses in the Sports Medicine major, they are unable to contribute to courses at Seaver College outside the SPME core curriculum, including: General Education (GE) courses (specifically the lab science requirement), first-year seminar courses, and/or upper-division specialty courses. Since the time of the last program review, the Sports Medicine program has relied upon two visiting faculty and multiple adjunct faculty each year in order to meet student demand for the courses. After requesting and providing justification for a new tenure track position for the past five years (since the last program review), the administration granted Sports Medicine a new tenure-track position. A search for a candidate for this position is currently underway.

## **2. THE EXTERNAL CONTEXT**

**This should explain how the program responds to the needs of the area in which it serves: this can include the community, region, field, or discipline.**

Sports Medicine students are exposed to conceptual, theoretical, and applied aspects of the exercise sciences as it relates to human movement, performance, health, and disease. Their education in the exercise sciences is based in and infused with a Christian worldview, such that these students will be encouraged and inspired to use their education and gifts in vocation and service to the community. Sports Medicine graduates typically pursue graduate studies (e.g., medicine, allied health, academia, public health) or directly enter the health professions (e.g.,

fitness and wellness). Sports Medicine students are equipped with the foundational knowledge and pragmatic skills necessary to enhance the quality of health of individuals, families, communities and society.

## PROGRAM OUTCOMES

### Institutional Learning Outcomes

Identifier	Description
CA-PEP-ILO-15.L-1-KS	Think critically and creatively, communicate clearly, and act with integrity.
CA-PEP-ILO-15.L-2-FH	Practice responsible conduct and allow decisions and directions to be informed by a value-centered life.
CA-PEP-ILO-15.L-3-CGU	Use global and local leadership opportunities in pursuit of justice.
CA-PEP-ILO-15.P-1-KS	Demonstrate expertise in an academic or professional discipline, display proficiency in the discipline, and engage in the process of academic discovery
CA-PEP-ILO-15.P-2-FH	Appreciate the complex relationship between faith, learning, and practice.
CA-PEP-ILO-15.P-3-CGU	Develop and enact a compelling personal and professional vision that values diversity
CA-PEP-ILO-15.S-1-KS	Apply knowledge to real-world challenges.
CA-PEP-ILO-15.S-2-FH	Respond to the call to serve others.
CA-PEP-ILO-15.S-3-CGU	Demonstrate commitment to service and civic engagement.

### Additional Standards/Outcomes

Identifier	Description
CA-PEP-SVR-15.SPORTMED-1	Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.
CA-PEP-SVR-15.SPORTMED-2	Apply the scientific method in order to understand, evaluate, and/or solve problems in the exercise sciences.
CA-PEP-SVR-15.SPORTMED-3	Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.

## CURRICULUM MAP

### MISSION, PURPOSES, GOALS, AND OUTCOMES

#### 3. MISSION, PURPOSES, GOALS, AND OUTCOMES

A key component in providing the context for the review is a description of the program's mission, purpose, goals, and outcomes.

- a. **Mission** - This should be a general explanation of why the program exists, what it hopes to achieve in the future, and the program's essential nature, its values, and its work.
- b. **Goals** are general statements of what the program wants to achieve.
- c. **Outcomes** are the specific results that should be observed if the goals are being met.

**The program's purpose, goals, and outcomes should relate to and align with the mission and goals of the college and of the University.**

The program's purpose, goals, and outcomes should relate to and align with the mission and goals of the college and of the University. The sports medicine program within the Natural Science Division of Seaver College at Pepperdine University is committed to providing a rigorous and dynamic science education infused with scholarship and opportunities for discovery learning while nurturing and advancing the personal, professional and spiritual development of Pepperdine students for lives of purpose, service and leadership as it pertains to the discipline of exercise science. Figure 3-1 is a visual representation of these principles (see attached, Alignment of PLOs with ILOs).

Within the context of the Mission and Purpose of Pepperdine University, the goals of the Sports Medicine Program at Seaver College include are to:

- I. Develop in students an understanding and appreciation of the human body and the processes involved in human movement.
- II. Develop in students an understanding that the discipline of human movement requires a personal commitment to engage in healthy lifestyle behaviors – and convey this knowledge by encouraging others to adopt healthy lifestyle behaviors.
- III. Prepare students for careers in applied or clinical health professions or for graduate work in disciplines related to the exercise sciences.
- IV. Develop in students an awareness of vocation, the enhanced potential for service in a chosen profession, in public life, and in the support of cultural life of a chosen community, and a commitment to use their knowledge in service.
- V. Develop in students an understanding of the relationship between faith and scientific knowledge and the limitations each has in answering questions about human body and its interaction with the natural world.
- VI. Develop in students an understanding that a life of purpose ultimately calls for integration of knowledge, vocation, and faith, and a commitment to lifelong practice.

#### PROGRAM LEARNING OUTCOMES

The Sports Medicine program identified three primary learning outcomes. Upon completion of the required curriculum of a sports medicine major, the graduate will:

1. Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.
2. Apply the scientific methods in order to understand, evaluate, or solve problems in the exercise sciences.
3. Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.



See attached Table 3-1, Alignment of PLOs with ILOs.

See attached Table 3-2, Intersection of SPME Program Learning Outcomes, Goals, and Specific Courses with Pepperdine University Institutional Learning Outcomes.

I - Introduced

D - Developed

M - Mastered

### SPME Curriculum Map

	SPME 110	BIOL 230	SPME 250
<b>CA-PEP-SVR-15.SPORTMED-1</b> Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.	I	I	
<b>CA-PEP-SVR-15.SPORTMED-2</b> Apply the scientific method in order to understand, evaluate, and/or solve problems in the exercise sciences.			D
<b>CA-PEP-SVR-15.SPORTMED-3</b> Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.			D

	BIOL 270	MATH 317	SPME 320
<b>CA-PEP-SVR-15.SPORTMED-1</b> Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.	I		D
<b>CA-PEP-SVR-15.SPORTMED-2</b> Apply the scientific method in order to understand, evaluate, and/or solve problems in the exercise sciences.	I	D	
<b>CA-PEP-SVR-15.SPORTMED-3</b> Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.	I	D	

	SPME 330	SPME 360	SPME 410
<b>CA-PEP-SVR-15.SPORTMED-1</b> Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.	D	D	M
<b>CA-PEP-SVR-15.SPORTMED-2</b> Apply the scientific method in order to understand, evaluate, and/or solve problems in the			

exercise sciences.			
<b>CA-PEP-SVR-15.SPORTMED-3</b> Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.		M	M

	<b>SPME 430</b>	<b>SPME 440</b>	<b>SPME 450</b>
<b>CA-PEP-SVR-15.SPORTMED-1</b> Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.	M	M	D
<b>CA-PEP-SVR-15.SPORTMED-2</b> Apply the scientific method in order to understand, evaluate, and/or solve problems in the exercise sciences.	M		M
<b>CA-PEP-SVR-15.SPORTMED-3</b> Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.	M	M	

	<b>SPME 460</b>	<b>SPME 498</b>
<b>CA-PEP-SVR-15.SPORTMED-1</b> Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.	M	M
<b>CA-PEP-SVR-15.SPORTMED-2</b> Apply the scientific method in order to understand, evaluate, and/or solve problems in the exercise sciences.		
<b>CA-PEP-SVR-15.SPORTMED-3</b> Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.		M

### Alignment of PLOs with ILOs

*Please upload the evidence.*

SPME\_Alignment\_PLO\_ILO\_Fig3.1\_Tables\_3.1and3.2.pdf

## ANALYSIS OF EVIDENCE: Meaning

### Meaning

#### Analysis of Direct Student Learning: Meaning Quality and Integrity

The university is required to define and ensure a distinctive and coherent educational experience for each of its degree programs. The findings from the program assessment and analysis process should explain how effectively courses, curricula, the co-curriculum, and other experiences are structured, sequenced, and delivered so that students achieve learning outcomes at the expected levels of performance in core competencies in their majors or fields of specialization, in general education, and in areas distinctive to the institution. It means ensuring alignment among all these elements, and maintaining an assessment infrastructure that enables the institution to diagnose problems and make improvements when needed. Direct student learning, an examination of how well students are meeting the program learning outcomes, should come from the past four years of annual assessments.

(2013 WSCUC Accreditation Handbook.)

**Meaning of the Degree: Describe how the program ensures a holistic experience by answering the following questions about the coherence and alignment within the program:**

#### **4. What are the learning outcomes and how does the degree support the institutional mission and institutional learning outcomes?**

##### PROGRAM LEARNING OUTCOMES

The Sports Medicine program identified three primary learning outcomes. Upon completion of the required curriculum of a sports medicine major, the graduate will:

1. Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.
2. Apply the scientific methods in order to understand, evaluate, or solve problems in the exercise sciences.
3. Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.

See attached Table 3-1, Alignment of PLOs with ILOs (previous section).

The curriculum in the Sports Medicine program align well with most of Pepperdine's Mission and Seaver College's Learning Outcomes. All three of the Sports Medicine program learning outcomes align with and work to achieve the first learning outcome of the institution: demonstrate expertise in an academic or professional discipline, display proficiency in the discipline, and engage in the process of academic discovery. When taking into account the goals, learning outcomes, specific courses, and extracurricular activities of the Sports Medicine program, students completing a degree in Sports Medicine are introduced to and develop in every institutional learning outcome. The alignment of these aspects of the Sports Medicine program with the Institutional Learning Outcomes are illustrated in Table 3-2.

See attached Table 3-2, Intersection of SPME Program Learning Outcomes, Goals, and Specific Courses with Pepperdine University Institutional Learning Outcomes (previous section). The SPME faculty continue to discuss ways in which to appropriately assess some of the unique contributions of the Sports Medicine program (e.g., SPME 110, BIOL 270, Fiji Program) in

achievement of the Institutional Learning Outcomes of Seaver College.

### **5. How does the degree embody the distinct values, basic commitment, and traditions of the institution?**

The overarching goals of the sports medicine program mirror those of Seaver College as they relate to studies in the exercise sciences. The Seaver College curriculum emphasizes both breadth (through general education) and depth (through a concentration in one discipline). All graduating students of Seaver College should share the following characteristics:

- The ability to continue the quest for knowledge and insight and to adapt to constant changes spurred on by the excitement of discovery and aided by an understanding of the nature and techniques of intellectual research.
- The ability to think clearly, logically, independently, and critically – to synthesize and integrate knowledge, not simply to accumulate it.
- The ability to communicate and to understand the communication of others: to read, to listen, to speak, and to write effectively.

The mission, objectives, and student learning outcomes of the sports medicine program support the mission, objectives, and student learning outcomes of Pepperdine University. Pepperdine University is a Christian university committed to the highest standards of academic excellence and Christian values, where students are strengthened for lives of purpose, service, and leadership. In this context the major objectives of Pepperdine University are formed by two components: core commitments and institutional values. The core commitments of the university are knowledge and scholarship, faith and heritage, and community and global understanding. Each commitment is implemented and evaluated through the lens of the institutional values (purpose, service, and leadership). The components of the university's objectives are represented in the student learning outcomes of the university as well as in the student learning outcomes of the sports medicine program. Specific to program review activities over the previous 5-years, SPME PLO2 and PLO3 align with LEAP Essential Learning Outcomes, Pepperdine's Institutional Values, and represents five core skills highlighted in the WASC 2012 report (see Table 5-1).

#### **Evidence**

*Please attach evidence.*

SPME\_Table\_5\_1.pdf

### **6. Is there a coherent, aligned sequence of learning opportunities?**

The Sports Medicine program requires a sequence of courses that allows students to progress from their lower-division courses to more advanced levels of study in their upper-division courses, such that upon the time of graduation, students can demonstrate mastery of the of the program learning outcomes, briefly: PLO 1: knowledge of the discipline; PLO 2: application of the scientific method; and PLO 3: application of the core competencies within the discipline. Please see attached: Figure 6-1 depicts a sequence of learning opportunities for the Bachelor of Science degree in Sports Medicine and Figure 6-2 shows a sequence of learning opportunities for the Bachelor of Arts degree in Sports Medicine. As illustrated in the Curriculum Map, PLO 1 is introduced in the lower division courses (SPME 110, BIOL 230, and BIOL 270). Similarly, PLO 2 and PLO 3 are introduced in BIOL 270. These three courses are often taken in the student's first year as a Sports Medicine major, allowing the student to acquire the foundational vocabulary and skills necessary for more advanced courses. In the student's second- and third year in the

program, the coursework emphasizes applying of the scientific method, interpreting scientific literature, and understanding human physiology in various conditions and in diverse populations (e.g., during exercise, healthy, diseased, aging). Successful completion of mid-level courses prepares the student for the 400-level courses where they are expected to demonstrate a mastery of the program learning outcomes. The 400-level courses (capstone series) emphasize independent, critical, and creative thinking and often require students to work collaboratively in order to develop, test, and defend novel ideas and hypotheses. And some upper-division courses require students to independently instruct their peers in the classroom or lead individuals/groups in the community. Upon completion of the course sequencing, students are expected to be able to skillfully address a diversity of real-world problems, construct evidence-based solutions, and professionally articulate these solutions through written and verbal communication to a wide audience.

The sequence of courses in both degree routes (B.S. and B.A.), as well the sequencing of learning in each class, is/are intended to reflect the stages of learning as described by the (revised) Cognitive Domain (Bloom, 1965), beginning with building knowledge and leading to the development of intellectual skills. Programmatically, the lower division courses, while they individually employ some more complex levels of learning (e.g., critical thinking), focus on recall and recognition of facts, patterns, and concepts. These lower division courses serve as the building blocks to the upper division courses, which focus on the development of intellectual skills like application, evaluation, and synthesis/creation. Within the context of the program course matrix, these simple learning behaviors correspond to courses that “introduce” or “develop” a student-learning outcome, while the complex learning behaviors correspond to the courses that offer opportunity for “mastery” of a student-learning outcome. Given the course matrix, every level of learning (Cognitive Domain, Bloom, 1965) is addressed by the curriculum for each student-learning outcome. Additionally, the levels of learning are addressed in progression as students advance through the Sports Medicine curriculum sequence (i.e., students are required to apply simple learning behaviors (in lower-division courses) on a specific learning outcome before being required to apply complex learning behaviors (in upper-division courses). The course requirements and sequencing are shown below. A complete listing of course descriptions is available online in the academic catalog, pages 362-365 (<http://seaver.pepperdine.edu/academics/content/2015seavercatalog.pdf>).

### **Evidence**

*Please attach evidence.*

SPME\_S5Q6\_Sequence.pdf

### **7. Does the degree offer sufficient breadth and depth of learning for this particular major or program? Please explain.**

The Bachelor of Science in Sports Medicine requires 17 courses, of which nine are lower-division and eight are upper-division. These courses offer a breadth of topics in exercise science and natural science, e.g., chemistry, math, physics, anatomy, physiology, neuroscience, biomechanics, and health and disease.

BACHELOR OF SCIENCE IN SPORTS MEDICINE - Course Requirements  
 Lower-Division Courses (Course Number, Units, Course Name)  
 SPME 110 (1) Introduction to Exercise Science  
 BIOL 230 (4) Human Anatomy  
 BIOL 270 (4) Principles of Human Physiology  
 CHEM 120 (3) General Chemistry I

CHEM 120L (1) General Chemistry I Laboratory  
 CHEM 121 (3) General Chemistry II  
 CHEM 121L (1) General Chemistry II Laboratory  
 MATH 150 (4) Analytical Geometry and Calculus I  
 PHYS 202 (4) Basics Physics I

#### Upper-Division Courses

CHEM 301\* (4) Elementary Organic Chemistry  
 MATH 316 (3) Biostatistics  
 MATH 317 (1) Statistics and Research Methods Laboratory  
 SPME 330 (4) Musculoskeletal Anatomy and Kinesiology  
 SPME 360 (4) Physiology of Exercise  
 SPME 410 (4) Neuroscience and Motor Control  
 SPME 430 (4) Biomechanics of Human Movement  
 SPME 460 (4) Exercise in Health and Disease  
 \*Students may substitute CHEM 310/310L and CHEM 311/311L (2-semester organic chemistry series) for CHEM 301

The Bachelor of Arts in Sports Medicine requires 13 courses, of which four are lower-division and nine are upper division. The courses in the B.A. sequence offer a breadth of topics in exercise science, psychology, applied health, and business, e.g., anatomy, physiology, psychology of exercise, sports nutrition, and venture initiation. When the B.A. degree route was added to the Sports Medicine program, the courses were selected and sequenced to comply with national standards established by the American College of Sports Medicine (ACSM) for the Health Fitness Instructor Certification (HFI). An analysis of undergraduate exercise science programs found that a majority of institutions surveyed indicated the use of ACSM's standards for curriculum content development (Pujol, T.J. Exercise Science Curriculum Survey: Curriculum Standards and Content. *Med Sci Sports Exer* 34(5): S526. 2002) (Elder, C.L., Pujol T.J., and Barnes, J.T. An Analysis of Undergraduate Exercise Science Programs: An Exercise Science Curriculum Survey. *J Strength Cond Res* (17(3): 536-40. 2003).

#### BACHELOR OF ARTS IN SPORTS MEDICINE - Course Requirements

##### Lower-Division Courses (Course Number, Units, Course Name)

SPME 110 (1) Introduction to Exercise Science  
 SPME 250 (4) Motor Development and Learning  
 BIOL 230 (4) Human Anatomy  
 BIOL 270 (4) Principles of Human Physiology

##### Upper-Division Courses

SPME 320 (3) Psychology of Exercise  
 SPME 330 (4) Musculoskeletal Anatomy and Kinesiology  
 SPME 360 (4) Physiology of Exercise  
 SPME 440 (4) Neuromuscular Adaptations to Training  
 SPME 450 (4) Foundations of Health and Fitness  
 SPME 460 (4) Exercise in Health and Disease  
 SPME 498 (3) Health and Fitness Internship  
 NUTR 340 (4) Sports Nutrition  
 BA 400 (4) Venture Initiative

ACSM no longer certifies program curriculum and that the coursework required for a minor in Sports Medicine is sufficient to prepare a student to successfully take a certification exam in the field. However, given the growth and demand for professional in the applied health professions

(e.g., fitness industry, preventive medicine), completion of an undergraduate degree in exercise science alongside appropriate certifications is not only warranted, it is necessary for students to remain competitive candidates for such positions.

The courses required for completion of the B.S. or B.A. in Sports Medicine equip students for various careers in the health professions and/or postgraduate studies in the exercise sciences. Based on the success of our graduates, the degree content and sequencing exceeds the demand in providing the breadth and depth needed for successful entry into graduate school and/or a career.

**8. Please present a curriculum comparison with at least three peer institutions and with national disciplinary or professional standards if available.**

**Curriculum comparison table**

*Please attach the curriculum comparison table.*

SPME\_Table\_8\_1.pdf

In general, both the B.S. and B.A. degrees in Sports Medicine are comparable to degrees offered by not only our peer institutions but also most universities in the United States (typically under the name Kinesiology or Exercise Science). Because there are no agreed upon national/external standards that delineate between the fulfillment of a B.S. or B.A. in exercise science, what some institutions call a B.S. may be the equivalent to a B.A. degree at another institution. Whether or not an institution offers a B.S. or B.A. degree appears to depend more on the school than it does the set of curriculum. Most institutions offer only a B.S. or a B.A. degree, with the exception of Southwestern University (B.S. or B.A.), Springfield College (two B.S. degree routes), and Pepperdine University (B.S. or B.A.). Based on types of courses required, it is likely that the B.S. degrees offered by Wake Forest University (B.S. in Health and Exercise Science) and Westmont College (B.S. in Kinesiology) are more comparable to the B.A. in Sports Medicine at Pepperdine. Likewise, the B.A. degree at Occidental College (B.A. in Kinesiology) may be more comparable to the B.S. in Sports Medicine at Pepperdine (See Table 8-1). These data serve to further demonstrate that the B.S. and B.A. designation does not indicate a set of curriculum across institutions.

We compared our degree programs to those offered at nine peer institutions: George Mason University, Slippery Rock University, Southwestern University, Springfield College, Wake Forest University, Westmont College, Wheaton College, Occidental College, and St. Olaf College. The B.S. in Sports Medicine at Pepperdine University is most comparable to the B.S. in Sports Biology at Springfield College and the B.A. in Kinesiology at Occidental College in terms of courses required in the natural sciences (e.g., chemistry, physics, math). Compared to every institution, the B.S. in Sports Medicine at Pepperdine requires the most laboratory courses in the exercise sciences. Programs comparable to the B.S. in Sports Medicine at Pepperdine vary in the number of electives that a student can choose from toward the fulfillment of the degree (0 to 4 elective courses). With all factors taken together, the B.S. in Sports Medicine at Pepperdine appears to require the highest number of courses in the natural sciences, require the most laboratory courses in exercise sciences, require the most laboratory courses overall, and offer the least flexibility with respect to electives (no elective courses) towards the fulfillment of the degree (i.e., rigorous and inflexible).

As previously mentioned, the B.A. coursework in Sports Medicine at Pepperdine was originally designed to a) comply with standards established by ACSM (ACSM curriculum for the Health Fitness Instructor Certification (HFI), now titled Certified Exercise Physiologist), and b) prepare

students to successfully take certification exams in the field upon graduation (e.g., Certified Strength and Conditioning Specialist exam). In doing so, the B.A. curriculum at Pepperdine mirrored curriculum at comparable programs offering applied degrees in exercise science. Of the nine peer institutions, five institutions appeared to offer a degree comparable to the B.A. in Sports Medicine at Pepperdine University. Interestingly, four of these five institutions require a statistics course, where the B.A. in Sports Medicine at Pepperdine (and B.A. Exercise Science at St. Olaf College) does not.

Of the nine peer institutions, there appear to be three institutions offering a hybrid of the B.S. and B.A. degree in Sports Medicine at Pepperdine (B.S. Exercise Science at Slipper Rock, B.S. Applied Exercise Science at Springfield College, and B.S. Applied Health Science at Wheaton College); requiring one or two courses in the natural sciences and a concentration of courses from applied exercise science.

### **9. How current is the program curriculum?**

Faculty who teach in the Sports Medicine program stay abreast in their respective fields as well as in the discipline of Sports Medicine as a whole, and engage in the scholarship of discovery; list of faculty scholarship is provided in a later section of the program review (see faculty). As the faculty expertise aligns with the program curriculum, scholarly activity of the program faculty is integrally related to the curriculum in which these faculty teach. In Sports Medicine courses, program faculty regularly infuse course content with current advances in the field and require students to learn and apply scientific reasoning and pragmatic research skills. Some of these pragmatic research skills include, but are not limited to: effectively using search engines specific to the discipline, appropriately locating relevant literature, critically evaluating the literature, developing a testable hypothesis, and drawing evidence-based conclusions.

As a result of the program review process, the faculty have been more engaged and intentional about meeting about the program curricula and have formative critical discussions on the overall program review and components that inform the annual review including, but not limited to: program learning outcomes and assessment of these outcomes in respective courses, course enrollment and the availability of required courses, reevaluation of prerequisite courses, and relevancy and rigor of course content. The field of exercise science is an ever-expanding and vastly growing field of study. Exercise science is unlike its natural science peers in that advances in the field are often conveyed to and sought out by a wide audiences. Because of the nature of the discipline, experts must be equipped to critically evaluate evidence and articulate findings. Given this, the SPME faculty feel that it is imperative that our courses and assignments favor teaching a student how to think, rather than what to think. Like the discipline itself, it is necessary to be firmly rooted in knowledge of the human body and scientific reasoning and then gain the skills (e.g., information literacy, critical thinking, oral communication) necessary to find relevant research, critically evaluate new findings, and communicate with various constituencies. Seminal papers as well as publications of recent advances in the field are staples in every Sports Medicine course.

Even though the course content and program curriculum is current, previous program reviews prompted the SPME faculty to further discuss the delineation between the two degree route options and the strict sequencing of courses within each route. In 2014 the faculty reviewed the curriculum, sequencing, and degree options at various peer and aspirational institutions. A closer evaluation of our program revealed: 1) an unnecessary rigidity to the course options (especially in the B.S. degree route), 2) the original motivation for the B.A. curriculum from ACSM's HFI certification no longer existed, 3) students in the B.A. route often expressed need/desire to take



courses offered in the B.S. route, and vice versa, 4) SPME faculty felt that given the professions of students graduating with a B.A. degree that a course in biostatistics, scientific reasoning, and research methods was necessary (already a part of the B.S. coursework as a biostatistics (3-unit) and research methods (1-unit) requirement), and 5) the SPME faculty felt that defining SPME core and capstone courses that all SPME major take would provide continuity, depth, and rigor to the major as a whole. Over the past two years, the faculty have worked to draft a new curriculum that would collapse the B.S. and B.A. designations into one major (B.S.) while allowing (two) track-specialization options for students. While both tracks would require the same core curriculum (6 courses taken at the beginning of the degree) and capstone courses (2 courses taken in the final semesters), students would have more flexibility within the two track options to take more applied exercise science courses (e.g., Biopsychology of Exercise) or more courses from the natural sciences (e.g., Biochemistry). With the new curriculum, the number of units required for a B.S. in Sports Medicine would be 47-48 (previously 53 in B.S. and 47 in B.A.) and would allow for 18 units elective courses from a list of predetermined courses (previously 0 units of elective courses in both degree routes). After several iterations of the new curriculum, the SPME agree that the changes would provide needed flexibility while maintaining rigor and, by way of some course changes, would be an avenue for which the Sports Medicine program can continue to thrive in an ever-advancing discipline. The Sports Medicine faculty continue in the process of gathering and analyzing data that supports these changes in the curriculum.

**10. How has the curriculum changed (if at all) over the last five years including the reasons for the change (e.g., the result of a learning outcome assessment) and evidence used as a basis for change?**

The program review process over the past five years provided evidence for the following programmatic and curricular changes: 1) removal of the Minor in Coaching (2012), 2) removal of a course requirement (Physics 203) from the B.S. degree route (2012), and 3) removal of BIOL 230 as course that satisfies the GE lab science requirement (2014). These changes were not the result of the assessment of a specific learning outcome but rather the result of the program review process as a whole (e.g., external review of the program, formative discussions among faculty, and evaluation of class enrollment).

Removal of the Coaching Minor: SPME 412 (Social and Psychological Aspects of Sport Performance) and SPME 108 (Scientific Foundations of Sport Performance) are not offered. These courses are a) not required for completion of the B.S. or B.A. degree routes in Sports Medicine, b) elective courses in the completion of a Minor in Coaching, and c) were designed by a Sports Medicine faculty who holds a permanent administrative appointment in one of Seaver College's study abroad programs and does not teach in the Sports Medicine program (Dr. Carolyn Vos Strache; Director of the London Program). Because the students declaring a Minor in Coaching were predominantly Sports Medicine majors (B.A.), the availability of appropriate alternative courses within Sports Medicine that would offer breadth outside of their already chosen major were limited. With the loss of these two course offerings (SPME 412 and SPME 108), the breadth and depth of the Coaching Minor was compromised. Additionally, the collective background and expertise of the Sports Medicine teaching faculty are not well suited to prepare students specifically for a career in coaching. Moreover, as external certification courses for coaching are now typically required for the profession, a Minor in Coaching appears to be obsolete in terms of eligibility for the career. While the Sports Medicine faculty believe that a degree in Sports Medicine (B.A. or B.S.) or a Minor in Sports Medicine will positively contribute to a future career in coaching, a Coaching Minor is unnecessary to enter the field of coaching.

Removal of Physics 203 requirement from Sports Medicine B.S. degree: The B.S. degree route in

Sports Medicine required Physics 202 and 203 with the intention that these courses administer prerequisite knowledge for success in our upper-division course in biomechanics (SPME 430: Biomechanics of Human Movement). Based on SPME faculty review and discussion of the course objectives in PHY 202 and PHY 203, the prerequisite knowledge necessary for successful completion of SPME 430 is met by PHY 202 alone. Further, based on supporting evidence in the previous program review and external review, there is continued agreement for a need for increased flexibility within the SPME B.S. curriculum. The removal of the second-semester physics requirement (PHY 203) gives students an opportunity to take an elective course that is better suited towards their postgraduate endeavors (e.g., biochemistry for medical school admissions or psychology requirements for physical therapy school).

Removal of BIOL 230 as a course that satisfies the GE Lab Science requirement: BIOL 230 (Human Anatomy) and BIOL 270 (Human Physiology) are courses required in the Sports Medicine program and taught by Sports Medicine faculty. Both courses were listed as major-specific courses satisfying the General Education (GE) Laboratory Science requirement. After SPME faculty review and discussion of the GE Learning Outcomes in Laboratory Science, we concluded that the content of and assessments in BIOL 230 (Human Anatomy) do not adequately fulfill the GE outcomes stated. Therefore, BIOL 230 was removed from the list of major-specific courses that satisfy the GE Lab Science requirement. Sports Medicine majors can continue to fulfill the GE Lab Science requirement through the completion of BIOL 270, which is required for all majors/minor in Sports Medicine.

#### **Evidence**

*Please attach evidence.*

**11. Pedagogy: Please present measures of teaching effectiveness (e.g., course evaluations, peer evaluations of teaching or implementing, scholarship on issues of teaching and learning, formative discussions of pedagogy among faculty, survey measures, participation rates, and student satisfaction surveys).**

#### **Teaching**

*Please attach evidence.*

SPME\_Tables\_11\_1\_through\_11\_4.pdf

The Sports Medicine program has implemented several procedures designed to evaluate the overall effectiveness of our pedagogical methods. These methods include: discussions of pedagogy among the faculty, student evaluations of courses, peer-evaluation of teaching, survey of alumni, and professional development activities related to pedagogy.

Formative discussion among the faculty: Sports Medicine faculty meet throughout the semester to discuss various aspects related to courses and/or the program (e.g., course offerings, benchmarking, enrollment, and pedagogy). By way of example, the faculty have engaged in discussion on the following program/course-related content over the past two-years:

- Visiting and adjunct professors: The continual reliance on visiting and adjunct professors has led to a lack of consistency in content and rigor across the curriculum, as evidenced by syllabi, course grade distribution, student feedback, and teaching evaluations.
- Course offerings: SPME faculty discussed how regularly courses in the B.A. can and should be offered. Historically the upper-division courses in this major (B.A.) are offered every other academic year, making it difficult for students to transfer into the major and complete it within 4 years. As of 2015-16 we offer upper-division courses in the B.A. every year.

- Course changes: SPME faculty discussed a proposal to combine anatomy (BIOL 230) and physiology (BIOL 270) into anatomy & physiology 1 and 2, spanning two semesters. Through curriculum comparisons, a discussion of pedagogy in these courses, and faculty teaching load, there was no consensus to combine the two courses. Additional discussion on potential changes to the B.A. and lab course requirements emerged.
- Course changes: SPME faculty have been accumulating evidence suggesting a need for a change to the research methods and statistics course offering; currently a 1-unit course, MATH 317, only required for students in the B.S. degree route. SPME faculty plan to modify the course to increase the emphasis on scientific reasoning and overall rigor of the course, changing from 1- to 3-unit course, required by all Sports Medicine majors, regardless of degree concentration.
- Course content: The distinction between and possible curriculum overlap in SPME 320 (Psychology of Exercise) and SPME 412 (Social and Psychological Aspects of Sport Performance). Given specializations of current Sports Medicine faculty there has been consistent difficulty in offering both courses.
- GE Course Offering: The desire/need to offer SPME 108 (Scientific Foundations of Sport Performance) or alternative appropriate course (e.g., Public Health) regularly as a general education (GE) science option for students of all majors.
- External Accreditation/Benchmarking: The value of undergoing CAAHEP accreditation for the curriculum in the B.A. program.
- Curriculum sequencing/degree requirements: The possible value of creating more upper-division flexibility within the B.S. program. For example, allowing a choice of upper-division electives that may be more suited towards a student's postgraduate endeavors (e.g., Biomechanics, Microbiology, etc.).
- Teaching load/assignment: With continued need for visiting and adjunct faculty, SPME faculty regularly discuss assignment of teaching loads per faculty expertise while maintaining the best interest of the students/program (ensuring students are exposed to tenure-track professors at all levels of their curriculum, e.g., lower- and upper-division courses). Likewise, SPME faculty are concerned about the a lack of consistency in the quality delivery of course content between tenured- and visiting/adjunct faculty.
- Assessment: SPME faculty have ongoing discussions about current and upcoming course and program assessment (e.g., what courses and what assignments from respective courses will be assessed).

Student course evaluations: Course evaluations are part of Pepperdine University's commitment to excellence in teaching and learning. The evaluations provide useful feedback, which faculty and schools use to improve the quality of instruction. In partnership with Information Technology, the University provides the latest tools and services to assist and inform not only the faculty in instructional development, but also the University staff in strategic decision-making.

Each semester, in every Sports Medicine course offered, students are asked to evaluate the professor and the course. The SPME faculty strongly encourage students to complete course evaluations. The questions asked about the professor and course are presented in Table 11-1. Table 11-1 illustrates program effectiveness relative to the student evaluations of the professors and courses for academic years 2008-2014.

Over the past five years, the average professor and course scores for Sports Medicine were 4.55 and 4.32, respectively. The average GPA for all of these courses was 3.15 (see Table 11-2). Overall, student evaluations for the Sports Medicine Program are similar to above average to those seen for all programs in the Natural Science Division. When professor and course scores were disaggregated by faculty appointed (tenured v. visiting professor), there appears to be a high degree of homogeneity among the tenured faculty and high degree of heterogeneity among the (current) visiting faculty (see Table 11-3).

Each faculty member has access to the anonymous individual student evaluations as well as summative data for each course. At the end of each academic year, SPME faculty provide a brief report and comment on their teaching evaluations in an annual review with the Dean of Natural Science Division. The Division Dean and the respective faculty member may discuss teaching effectiveness and develop goals for the subsequent semester as necessary.

Peer evaluation of teaching: Faculty who are eligible for changes in rank or promotion (e.g., pre-tenure, associate to full professor, and 5-year review of full professor) undergo a more rigorous evaluation (beyond the annual review previously described) by both their peers (five colleagues) and the Divisional Dean. This review involves an evaluation of the faculty members course materials, a classroom observation, and a formal letter of their evaluation of the faculty member submitted to the Rank, Tenure, and Promotion (RTP) Committee. Faculty undergoing the review are asked to provide a self-evaluation that includes, but is not limited to, an assessment of student evaluations and ideas they have for improving pedagogy. The faculty evaluation process is described in detail in the Seaver College Rank, Tenure and Promotion (RTP) Handbook (<http://seaver.pepperdine.edu/dean/documentsandpolicies/rtp.htm>). The Pepperdine University tenure process, which is contingent upon a high quality of teaching, is described in the Seaver College RTP Handbook and the Pepperdine University Tenure Policy (<http://www.pepperdine.edu/provost/content/TenurePolicy.pdf>).

Senior & Alumni Surveys: The Natural Science Division previously administered a Graduate Satisfaction Survey (2008, 2009, 2010) and results from these surveys were aggregated and reported on in a 2011 SPME program review. The measures that provided indirect evidence of program effectiveness on SPME PLOs included:

How do you rate the preparation the National Science Division provided to you in each of the following areas? (Answers range from excellent to poor)

1. Applying scientific knowledge and skills
2. Evaluating the quality of published literature
3. Improving laboratory skills
4. Improving your ability to find, screen, and organize information
5. Improving your ability to conduct research
6. Preparing you to pursue life-long learning
7. Speaking effectively through oral presentations
8. Thinking logically to resolve analytical problems
9. Understanding written information
10. Writing effectively

As a part of the graduate survey, graduates were asked to rate their level of satisfaction on several measures of quality of instruction/faculty members. The response options include: very satisfied, satisfied, neutral, dissatisfied, very dissatisfied. Results of this survey are discussed in a later section of this report (student satisfaction).

OIE Alumni Survey: The Office of Institutional Effectiveness conducts an alumni survey for all programs in the Natural Science Division (NASD). A section of this survey asked alumni to rate the extent to which they agree (1 = strongly disagree to 4 = strongly agree) with statements about their experiences with Pepperdine faculty. Overall, Sports Medicine students indicated they felt very supported by the faculty and that the faculty approached the classroom and teaching with care and devotion (see Table 11-4). Additional results from this survey are explained in a later section of this report.

Professional Development Activities Associated with Pedagogy: The Sports Medicine faculty are individually engaged in the development of their own pedagogy. Examples of these practices

include attending The Teaching Professor Conference, attending WASC workshops, and regularly reading journals related to pedagogy in higher education, pedagogy in the sciences, and the pedagogy of undergraduate research. Sports Medicine faculty are regular attendees at meetings and workshops provided by the Natural Science Division, Seaver College, and Pepperdine University as it pertains to pedagogy and assessment. Additionally, several Sports Medicine faculty are members of the Council on Undergraduate Research. Similarly, Sports Medicine faculty regularly engage and participate in local and regional professional organizations that emphasize undergraduate research, where students have presented research posters and faculty have served on abstract review and research recognition committees (e.g., Southwest American College of Sports Medicine, Southern California Conference for Undergraduate Research). Two Sports Medicine faculty have been honored to receive the university-wide, Howard A. White Teaching Award, Dr. Priscilla MacRae (2005) and Dr. Jeff Jasperse (2008) and Dr. Priscilla MacRae also received the Harriet and Charles Luckman Distinguished Teaching Fellow (2000).

## ANALYSIS OF EVIDENCE: Quality

### Quality

**Quality of the Degree: In meaning of the degree student learning outcomes and curriculum matrixes were used to define the degree. Now please describe the processes used to ensure the quality of the program.**

**12. Describe the high impact practices which enrich the learning experiences (How are they integrated in the curriculum? Are they assessed?)**

- a. Service learning**
- b. Research opportunities**
- c. Internships**
- d. High-impact practices**

The Sports Medicine curriculum and co-curriculum combine to provide a robust learning experience for students. Inside and/or outside the classroom, students have the opportunity to engage in service-learning, research opportunities, internships, and several other high-impact practices, including: first-year seminars, community-based learning, career/educational retreats, writing-intensive courses, and capstone courses/projects. A few of these activities are described in detail in this report.

a. Service-Learning: Sports Medicine students had the opportunity to participate in field-based "experiential learning" as a required part of SPME 110 – Introduction to Exercise Science. Service-learning was defined as students contributing their time and energy to identified community tasks, in the context of academic coursework that involved conscious reflection and intentional student learning goals (Colorado Campus Compact publication, 1994). The SPME 110 service-learning experience was designed to accomplish the following student learning outcomes (SLO):

- SLO 1: students will use their knowledge and expertise in sports skills and physical activity to enhance the skills and confidence of children, adults with disabilities or older adults in the community,
- SLO 2: students will demonstrate awareness of the physical activity needs of individuals in the community

- SLO 3: students will develop ways in which they can help meet the needs (related to physical activity of individuals in the community) and
- SLO 4: students will formulate a research question on a topic in exercise science based on their service-learning experience.

The students participated the service-learning project one hour per week for 10 weeks in one of three service-experiences: 1) assisted with sports skill games and instruction during the noon recess at the local elementary school, 2) assisted with swimming or golf instruction of disabled adults who came to Pepperdine for these activities, or 3) assisted with exercise classes at Malibu Senior Center. Each student submitted a two-three page paper responding to six prompts based on their service-learning experience. Student success was measured based on faculty evaluation of student papers. It should be noted that due to a doubling of enrollment in Sports Medicine, this service-learning opportunity has been discontinued.

b. Research Opportunities: Research opportunities for Sports Medicine majors are regularly provided by the faculty in Sports Medicine. On average, each faculty member works with approximately one to five research students per academic year. Students engage in faculty research on all levels ranging from literature review, project/study design, study implementation and data collection, data analysis, and reporting of the findings through oral and/or written presentation. While a majority of student research involvement occurs outside the classroom, the pragmatic components of scientific research are introduced, demonstrated, and mastered through the Sports Medicine program curriculum. All student research, whether in a faculty laboratory or part of the course curriculum, is centered on topics related to the exercise sciences. Particular areas of student research emphasized over the last five years include, but are not limited to: cognition and motor learning in older populations, health behaviors and outcomes during pregnancy and postpartum, exercise performance, and biomechanics of sport performance. The level of commitment from students involved in this level of research is typically equivalent to a part-time job during the academic year. These experiences often culminate in a local, regional, or national conference where the student presents the data in poster or slide presentation format. Research projects involving undergraduate students in Sports Medicine have regularly received both extramural and intramural funding, including funding from federal grants (National Science Foundation (NSF)), foundations (e.g., Tooma Undergraduate Research Scholarship), and various internal grants through Seaver College (e.g., Summer Undergraduate Research Program, Cross-Disciplinary Undergraduate Research). While undergraduates can pursue research opportunities during the academic year, students can also apply for a more focused and intensive research experience during the summer and/or through the honors research program.

The Honors Research Program in Sports Medicine: Sports Medicine majors are encouraged to participate in the Honors Research Program, which is designed to provide students a focused opportunity for exploring a research question in the exercise sciences. Students engaging in this program are richly impacted by the authentic experience of scientific discovery as they develop hypotheses, design experiments, collect, analyze, and interpret data, and present and disseminate their findings to the scientific community. Students are eligible to apply to the program during the first semester of their junior year and are admitted to the program based upon grade point average, recommendations, a personal essay, career goals, and potential for successful completion of the proposed research. After proposals are reviewed and approved by the committee, students begin preliminary experimentation. All students are expected to spend the second semester of their junior year, and possibly the summer between their junior and senior years, in data collection. The senior year is spent analyzing the data and preparing an honors thesis. To complete the program, students must present their data in thesis form to the examining committee. After successful completion of an oral thesis defense, the committee recommends that the student's transcript and diploma be marked "Honors in Sports Medicine." It is expected that thesis projects will also be presented at local and national meetings and be published in a peer-review scientific journal.

Undergraduate student research is assessed in multiple ways. The OIE Alumni Survey asks alumni (by program) “To what extent did working with faculty on research contribute to your development both personally and professionally, after graduating from Pepperdine?” Ratings are based on a 4-point scale, with 1 = not at all to 4 = very much. In addition to survey of alumni, assessment of student involvement and success in undergraduate research can vary based on each faculty member and are often intrinsic to the research process itself (e.g., acceptance of an abstract or manuscript). There are approximately three avenues in which undergraduate research is evaluated: 1) direct evidence of peer-reviewed publication of an abstract/manuscript, 2) authentic evidence of committee evaluation of student work at a campus- or local-conference, and/or 3) direct and indirect evidence through pre-post test of the student’s knowledge and experience in research procedures and concepts. Elaborating on the latter, individual faculty may choose to evaluate his/her research student’s success and or experience in the lab. An example of how one faculty member assesses the research experience in their laboratory is by administering a pre-post assessment. Research students are asked to complete a research skills assessment, asking them how capable they feel in 20 skills associated with planning and conducting research, collaborating, and communicating research findings. Students assess their level of capability to accomplish the tasks on a five-point scale, with 1 = slightly capable (i.e., able to accomplish with continuous guidance and direct instruction) to 5 = exceptionally capable (i.e., able to accomplish without consulting an expert/mentor). Examples of survey questions include, to what extent do you feel capable of: 1) completing a review of the primary research literature (in peer-reviewed journals) on a topic; 2) interpreting empirical results through data analysis; 3) synthesizing information from multiple sources to produce your own contribution to scientific understanding; 4) orally communicating research findings to peers. The survey is quite comprehensive and detailed relative to the process of scientific research. Students are asked to complete the same survey at the end of their research involvement.

c. Internships: As an integral part of both majors, students are required (B.A.) or encouraged (B.S.) to participate in internships related to their particular area of interest or future career (e.g., physician assistant, personal training, physical therapy) with the goal of providing students direct experience in a work setting and to give them the benefit of supervision and coaching from professionals in the field.

The B.A. students complete an internship as a capstone experience in the curriculum (SPME 498), whereas the B.S. students are not required by the design of the undergraduate curriculum but rather more often required by their future graduate school. Sports Medicine faculty direct and/or oversee these internship opportunities, providing formal evaluation for students who are enrolled in an internship as course credit. Relationships outside the Pepperdine community within the greater Los Angeles area have been formed in order to facilitate student internships in the B.A. program (e.g., local area fitness centers). For B.S. students, a full listing of the locations in the area that are primarily in the medical field can be found on the Pre-Health Professions website at <http://seaver.pepperdine.edu/naturalscience/academics/pre-health/>

The requirements for completion of SPME 495/498 for course credit in an internship are:

1. Complete 135 hours of work for the 3 units of credit.
2. Have the on-site Internship Supervisor complete an evaluation form (see attached copy) at least twice during the semester, preferably at the midpoint and conclusion of the internship.
3. Complete the monthly log and meet with his/her Pepperdine University instructor on a monthly basis to discuss the internship (the monthly report form should be submitted to the instructor at this time).
4. Complete a two page double spaced paper specifying what the internship entailed and how it affected his/her career choice (must be submitted to the supervising professor by date specified on contract).
5. Have the student’s on-site supervisor submit a confidential evaluation letter summarizing the student’s work to the Pepperdine University instructor by the date specified in the contract.

In addition to the supervisor evaluation forms and letter on each student, the internship experience is also indirectly assessed in the OIE Alumni Survey. Alumni are asked, "To what extent did the internship experience contribute to your development, both personally and professionally, after graduating from Pepperdine?" Ratings are based on a 4-point scale, with 1 = not at all to 4 = very much.

d. Additional High-Impact Practices: In addition to the service-learning, research opportunities, and internships offered through Sports Medicine, students engage in additional high-impact practices through the curriculum and co-curriculum, including:

Writing-Intensive Courses: The Sports Medicine program emphasizes the development of discipline-specific writing throughout the curriculum and designates SPME 410 (Neuroscience of Motor Behavior) as a "writing intensive" course. Writing intensive courses contain assignments that are designed to:

- Improve writing processes, developing effective strategies for generating ideas, gathering information, drafting, revising, and editing.
- Use writing to improve learning of subject matter and promote the development of critical thinking.
- Learn discipline specific ways of thinking and communicating, including writing skills important for continuing study in the discipline, for careers, and for communicating discipline-specific knowledge to audiences outside the discipline.

Written communication, as a part of Sports Medicine Program Learning Outcome 3, was assessed in writing samples from SPME 410 in Spring 2015. Results from this assessment are discussed in a later section of this report.

Retreats: Pre-Health students (students interested in pre-professional training in medicine, dentistry, etc.) have several opportunities each year to attend a medical school conference where students can learn more about the field of medicine and network with admissions personnel. Specifically, every fall, the University of California at Irvine (UCI) hosts a one-day conference put on by the Latino Medical Students Association in conjunction with the UCI Medical School. Approximately 10 Pepperdine students attend this conference annually. Additionally, several Pepperdine students (up to 20 students) attended the AMSA (American Medical Students Association) conference at the University of California Davis (UCD). These conferences, and other like it in the area, are well publicized by the Pre-Health coordinator, whom has a full-time appointment as Sports Medicine faculty.

Study Abroad Opportunities: Seaver College of Pepperdine University is well known for the caliber and variety of international programs for study abroad (discussed in detail in a later section of this report). As a part of Seaver College, Sports Medicine students are encouraged to seek out and apply for an international program of interest. While some international programs are better suited for the Sports Medicine student, students are able to apply to any program of choice. More recently, a summer special interest international program was developed to meet demand of students interested in the pre-health professions. The month-long trip began in May 2010, where a Sports Medicine faculty member led a group of approximately 20-25 students to work in a faith-based clinic (Mission at Natuvu Creek) situated in a remote jungle on the island of Vanua Levu, Fiji. The program has continued, growing in popularity over the past five years. While this summer program is open to all majors, the special interest of the programs caters uniquely to Sports Medicine and pre-health students. Students have the opportunity to observe medicine and dentistry in a developing country and participate in helping the local population with health care outreach in the villages. Like other study abroad programs, this program allows students to explore cultures, life experience, and worldviews different from their own. This study abroad experience is unlike the majority of the study abroad opportunities offered during the academic semester, or even compared to the other summer special programs. In Fiji, as students learn about the etiology of health and disease (epidemiology) they are directly observing these



issue as they work and serve in the clinic, nearby school, and surrounding villages. When the students aren't directly learning, they are serving, and the line between the two is often seamless. The program teaches acceptance of diverse perspectives, creative problem solving (health care in developing countries) and in general, provides unparalleled preparation for citizenship, work, and life.

Whether Sports Medicine students attend the summer program to Fiji or another abroad program, their experience is assessed in multiple ways. The International Programs Office regularly conducts assessment on their programs. One assessment is similar to the student evaluation of courses process, where students are encouraged to complete an online evaluation of their abroad experience at the conclusion of their program. These evaluations are available to both the faculty leading the program as well as the International Program Office. Additionally, following graduation from Pepperdine, the OIE Alumni Survey asks, "To what extent did study abroad contribute to your development, both personally and professionally, after graduating from Pepperdine?" Ratings are based on a 4-point scale, with 1 = not at all to 4 = very much.

**13. Co-Curricular : How intentional are the co-curricular experiences which are provided and how are they integrated into the curricular plan?**

- a. Academic and career advising programs and resources**
- b. Tutoring, supplemental instruction, and teaching assistants**
- c. Orientation and transition programs**
- d. Financial support for obtaining scholarships, fellowships, teaching assistantships, etc.**
- e. Support for engagement in the campus community**
- f. Support for emotional and psychological variables of success**
- g. Spiritual development programs and opportunities**
- h. Multicultural opportunities which support diversity**
- i. Plays, musicals, art exhibits, and lectures**
- j. the Sophomore Experience**
- k. Study Abroad**

a. Academic and career advising programs and resources: All incoming first year and transfer students receive a detailed orientation the week prior to classes. As part of this orientation, members of the Sports Medicine faculty help these students with the student's class schedule for the upcoming semester and also draft a 4-year plan of courses that accommodates the student's interests in study abroad programs. Each SPME student is assigned an academic advisor from among the Sports Medicine faculty. This advisor is available to meet with the student for ongoing discussions about the students' career plans and adjustments to the student's 4-year course plan. Academic advisors often act as a part of a support system helping the student transition from lower- to upper-division courses in the program.

The first-year seminar, as previously discussed, is designed not only to help beginning students transition to college but also to provide these students with an introduction to the Sports Medicine discipline as well as the Sports Medicine faculty and their respective areas of expertise/research. In addition to these overarching goals, students are introduced to the library, the counseling center, and the career center. Students hear from professionals in the discipline throughout the semester (e.g., Physician Assistant, Physical Therapist, etc.). Students are instructed on the topic of vocation and asked to write informed and reflective statements on why they are a sports medicine major. At the end of the semester, after exposure to the multiple facets of the program and the discipline, students are asked to rewrite their vocational statement, why I am (still/no longer) a sports medicine major.

In addition to the services offered in and outside of the Sports Medicine program to ensure success through their coursework, Seaver College has several offices and programs dedicated to help ensure success following graduation. The Career Center provides students with advice on development of resumes and preparation for interviews, and the Student Employment Center coordinates all sources of student employment through the university. The University sponsors career fairs where students are introduced to potential employers. The Natural Science Division provides some support for students to attend professional meetings, and many of the Sports Medicine majors who are involved in undergraduate research take advantage of this support. This exposure helps with networking, which is important for students interested in graduate school. Sports Medicine students are encouraged to submit proposals for both Fulbright and other appropriate predoctoral fellowships, and members of the Sports Medicine faculty mentor students with respect to proposal writing.

b. Tutoring, supplemental instruction, and teaching assistants: When students require additional support learning the material while in a course they have multiple resources they may seek out, including, but not limited to: faculty office hours, additional instruction or “open lab” offered by undergraduate teaching assistants, and/or group/individual tutoring offered through the Student Success Center.

c. Orientation and transition programs: All incoming students, whether first-year or transfer students, go through one, if not several, orientation programs. New Student Orientation (NSO) is a program intentionally designed for any incoming students and their parents whether enrollment for the student begins in the Fall or Spring term. The program includes information on academics, student activities, student services, living on campus, international programs, and much more. University administrators, faculty, staff, and upper-division students will be available throughout the program to answer all of your questions about college life. Faculty from every division and program are available to meet parents and talk with students.

d. Financial support for obtaining scholarships, fellowships, and teaching assistantships: Financial support for Sports Medicine students who work in the Natural Science Division is available throughout the academic year. On average, the Natural Science Division receives \$72,000 per year in support of student salaries. This support funds teaching assistants, student tutors, research and office assistants. Aside from a financial reward, students benefit in other ways as a result of their involvement in these activities. First, being a teaching assistant or a tutor provides a peer-learning experience for the student teacher as well as the student being taught. As a result, the teaching assistant often retains course content at a level higher than what may be expected by being a student in the course. At the same time, student teachers may provide an additional explanation of a concept, perhaps more understandable to some students than what is provided by the professor. Finally, the students working in these positions have a unique opportunity to develop a closer working relationship with specific faculty in the program, often leading to a deeper mentoring experience.

The Sports Medicine faculty, through effective relationships with students, alum, and their families, have procured over \$135,000 over the last 25 years towards student scholarships (Paul J. Hughes Family Foundation, The Gregory V. Martinez Scholarship, Ensio Sports Medicine Enrichment Funds). The Sports Medicine Program also receives scholarship funds from several non-profit institutions, and these awards are made using the same criteria as those outline for the divisional scholarships. The Natural Science Division receives between \$130,000 and \$150,000 for student scholarships that are awarded at the beginning of each fiscal year. Students apply for these scholarships, and Program Coordinators and the Divisional Dean evaluate each application. Awards are based on academic achievement in the major as well as student performance in overall coursework.

f. Support for emotional and psychological variables of success: Seaver College provides a number of different programs that promote the emotional and spiritual well-being of students. We have a very active Counseling Center as well as a Testing Center for students with additional academic needs. All members of the faculty are encouraged to identify and support students that may require additional help, and there is a well-defined network for assisting these students. Several offices and committees on campus are dedicated to the oversight of student health and well-being. These offices and committees are comprised of various faculty, staff, and administrators (sometimes including student representatives) who work to form a network of support and intentionally investigate the health and well-being of students living on- and off-campus. As it often relates to the discipline of exercise science (healthy lifestyle/preventive medicine), a faculty member from Sports Medicine often volunteers to serve on these types of committees and/or provide workshops for events scheduled by these groups.

g. Spiritual development programs and opportunities: The Convocation Office offers a myriad of services and programs throughout the semester aimed at encouraging spiritual development. Every student is required to accumulate 14-credits of convocation events during the semester. Such options include Club Convocations led by individual faculty and/or one-on-one Spiritual Mentoring. Sports Medicine faculty have regularly participated in both programs. Campus Recreation offers two spiritual retreats each academic year, God in the Wilderness, where faculty and staff lead students in topics of personal and spiritual growth while they enjoy the outdoors and activities together. Sports Medicine faculty have participated as leaders in these events, leading groups of students camping in the Santa Barbara Mountains (Fall) and skiing in Big Bear (Spring).

e. Support for engagement in the campus community

h. Multicultural opportunities which support diversity

i. Plays, musicals, art exhibits, and lectures

Pepperdine provides a host of other co-curricular activities that align with the vision and mission of the University, encouraging global-minded students to develop lives of purpose, service, and leadership. Project Serve allows students to actively engage the local community by providing a number of services during Spring Break, and the Student Board of Government supports a number of events as a way of engaging the campus community. There are several multicultural opportunities on campus including: 1) Loqui hosts events that celebrate diversity and inclusiveness. 2) The Intercultural Affairs office offers various programs to enhance cross-cultural understanding. 3) Students are able to be involved in extracurricular activities such as plays produced by the Fine Arts Division and/or student-directed dance productions and musicals (Dance in Flight and Songfest). 4) The Well is a weekly event that embraces the entire faith community through music and praise. 5) The Seaver Dean's lecture series invites a diverse array of often prestigious and well-known speakers, who not only present, but interact with students, faculty and the local community. Students and faculty in Sports Medicine take advantage of these various opportunities throughout each academic year, either in leadership positions or as engaged attendees.

k. Study abroad: The experience of study and travel overseas provides an essential dimension to a liberal arts education that can be obtained in no other way. For this reason, international programs have been designed to provide any Seaver College student, regardless of major, the opportunity to study, live, and travel overseas without interrupting other studies or postponing a career. Year-round or semester program locations in Heidelberg, Germany; London, United Kingdom; Florence, Italy; Buenos Aires, Argentina; Shanghai, China; Lausanne, Switzerland; and Washington, D.C., offer students a unique opportunity to gain both an academic and a personal understanding of other cultures, institutions, and languages. Summer language programs in Switzerland and Spain or Argentina allow beginning students to complete their language

requirement and offer advanced students the opportunity to study both the language and the culture of the country. Other summer programs provide special opportunities to focus on business, humanities, religion, science, medicine, theatre, music, or studio art. Upon graduation, many students conclude that participation in an international program was the single most significant experience of their undergraduate years. One of the summer special programs (Fiji Medical Mission) has been led by a member of the Sports Medicine faculty for five of its six years running. Students participating in this month-long trip work in a rural clinic, provide health services in the local schools and villages serve, and take a course in epidemiology or intercultural communication.

j. The Sophomore Experience: For students/sophomores who choose not to participate in a study abroad program, the President's Office supports the Sophomore Experience; a program designed to foster a sense of community for students not participating in study abroad. Each year, these students take educational trips to San Francisco, Santa Catalina Island, and other regions. Members of the Natural Science Division regularly participate as faculty/mentors on these excursions. More information on the study abroad experience is discussed in the pedagogy section of this report.

Regarding students perceived ability to participate in co-curricular activities (e.g., study abroad, musicals, internships, spiritual development programs, etc.), alumni were asked to indicate the extent to which [they] agree or disagree that "as an undergraduate, I had enough free time to be able to participate in co-curricular activities". Based on a four-point scale, with 1 = strongly disagree to 4 = strongly agree, 87.5% of Sports Medicine alumni 'agree' to 'strongly agree'.

#### **14. What is the profile of students in the program and how does the profile relate to or enhance the purpose and goals of the program?**

**Please explain your student success data (enrollment and retention data). Evidence should include student retention and graduation rate trends (disaggregated by different demographic categories such as race, gender, first-generation students, etc.).**

**OIE provides this data annually and houses the reports on the OIE website and LiveText site.**

##### **Student Success Data**

*Please download student success data.*

Enrollment\_Data\_Sports\_Fall2010\_14.xlsx

SPME\_Tables\_14\_1\_through\_14\_4\_and\_Fig14\_1.pdf

Enrollment: The average student enrollment in Sports Medicine from 2010 to 2014 was ~187 students (range: 165-204), with approximately 77.7% (range: 76.1-78.9%) of students enrolling in the B.S. program. Compared to the previous 5-year average enrollments, average enrollment has increased in the past several years (2005-2009 average enrollment was 166 students) and in recent years there was a small increase in the number of students enrolling in the B.A. program. Enrollment in Sports Medicine consistently accounts for over one-third (35.5%) of all of the students in the Natural Science Division (eight majors) (Table 14-1). Sports Medicine is historically the highest enrolled major in the Natural Science Division. Interestingly, numbers reported at the University level (Office of Institutional Effectiveness) don't reflect the actual numbers of students in the major. It is noteworthy to mention that as of academic year 2015-2016, the four full-time teaching faculty combined have 233 Sports Medicine student advisees; not including 22 minors.

**Student Profile:** In 2014, more than half of all Sports Medicine students were female (111 of 197 students; 56%) – a small increase from the previous year (2013, 107 of 204 students; 52% female) (Table 14-2). Between 2008-2014, the proportion of males and females in Sports Medicine has hovered around 50%, with higher prevalence tending towards females. As of 2014, the highest proportion of Sports Medicine students was White (96 of 197 students; 48.7%), with Asian (13.7%), Hispanic (13.2%), two or more races (12.2%), and African-American/Black (6.6%), as the next most prevalent ethnicities (Table 14-3). Compared to the previous program review there is a trend of a slight decrease in the number of white students and increase in ethnic minorities, predominantly Asian (previously 7.5%). These numbers are relatively consistent with those of the Natural Science Division and of Seaver College. There is an overall trend of increased enrollment of ethnic minorities (Asian, African American and Hispanic) over the last three years. When alumni (n=115) were asked to rate their satisfaction with the ethnic diversity in the program (ratings on a five-point scale with 1 = very dissatisfied to 5 = very satisfied), SPME alumni rated satisfaction with student and faculty diversity at 3.43 and 3.33, respectively. Approximately 15% of the entering class over the last five years represents first-generation students. As a faith-based school, Pepperdine University has a connection with the Churches of Christ, yet enrollment of students indicating an affiliation with this faith community shows a decline by 50% over the last three years.

**Student recruitment** focuses primarily on predictors of academic success, such as SAT or ACT scores and high school GPA. The average SAT scores for students entering the Sports Medicine Program since 2010 were 585 for verbal and 616 for mathematics. Student enrolling in the B.S. (~75% of SPME majors) average higher SAT scores, 600 and 638 for verbal and mathematics, respectively. Overall, these scores are consistent throughout this period (2010-2014) and are slightly lower than the average for the Natural Science Division (613 verbal and 653 mathematics). Sports Medicine majors enter college with the same high school grade point average (GPA) as students choosing other majors in Natural Science and students in Seaver College (3.6 GPA) in general. However, students choosing the B.S. major in Sports Medicine in the past four years have consistently higher GPAs (average 3.71 GPA) than their B.A. Sports Medicine (average 3.55 GPA), Natural Science (average 3.69 GPA), and Seaver College (average 3.61 GPA) counterparts (see Figure 14-1).

**Retention:** Students selecting Sports Medicine as a major typically remain in the major and any attrition appears to happen largely within one semester in the major. In Fall 2010, 41 of 46 students who declared Sports Medicine remained in the major at the end of their first semester (89% retention rate). The 1-year retention rate in Sports Medicine is high (2014, 93%), and over the course of three years, 1-year retention averages 90% (2010-2014). While it would be interesting to measure retention rate by year of program completed (e.g., retention after 2 years in the program) to find key places where students both exit and enter the major, it is hypothesized that first-semester, and first-year retention rates may be among the lowest of all subsequent years (highest attrition). A decrease in attrition as time in the major increases is expected primarily for two reasons: 1) coursework in the first-year can be quite rigorous as it prepares students for upper-division courses and student preparedness for the rigor and workload of these courses varies based on their high school experience and 2) as time in the major increases students are exposed to courses increasingly more specific to the discipline of exercise science, which it is perceived that the students find increasingly more enjoyable.

**Graduation:** From academic year 2009-2010 to 2014-2015, the Sports Medicine program awarded an average of 36 degrees annually (range: 24-44 degrees/yr) (see Table 14-4). This is an increase from the previous five-year average of 24 degrees annually (2000-2001 to 2008-2009) and is concomitant with the increase in enrollment in the major. The four-year graduation rate for the Fall 2009, 2010, and 2011 cohorts are 85%, 80%, and 73%, respectively. The six-

year graduation rate for the Fall 2009 cohort is 95%.

**15. Please present your student and alumni survey data examining student attitudes, satisfaction levels and dispositions. OIE will provide the data in tables and graphs in their Educational Effectiveness Report. Programs are responsible for explaining the survey results. Survey data includes: UCLA/CIRP satisfaction survey data, alumni data.**

### **Student Survey Data**

*Please download student survey data.*

Data\_Report\_\_OIE\_Alumni\_Survey\_2015\_\_NASC\_Full\_Report\_\_08\_28\_15.pdf

SPME\_Table\_15\_1.pdf

The Office of Institutional Effectiveness administered a survey to Pepperdine Alumni during the spring semester of 2015. The survey was sent to 1,562 NASC alumni, with 411 responding (26% response rate). The Sports Medicine Program was among the highest responders (responses n=145; rate 35.5%) and response by gender was nearly identical.

When alumni were asked, "What is your current primary activity?" full-time employment for Sports Medicine graduates was reported for 56.9% of the respondents, and 19.8% were currently in graduate/professional school. When asked, "how well did your Pepperdine education prepare you for your primary activity?" overwhelmingly, 95.7% of Sports Medicine alumni felt that Pepperdine prepared them 'reasonably well' to 'extremely well' for their current primary activity.

Several program-related questions, based on a scale of 1 (strongly disagree/definitely no) to 4 (strongly agree/definitely yes), were asked of the alumni. Some of the measures of satisfaction and Sports Medicine alumni responses included:

1) Pepperdine met my academic expectations (1 = strongly disagree to 4 = strongly agree)

Score 3.68; 69% strongly agree

2) Were the educational resources adequate to meet your needs?

Sports Medicine = 92.4% "yes" (Natural Science = 88.7% "yes")

3) Would you recommend Pepperdine to others (1 = definitely no to 4 = definitely yes)

Score 3.71; 75% definitely yes

4) If given the choice again, would you re-enroll in Pepperdine (1 = definitely no to 4 = definitely yes)

Score 3.59; 65.5% definitely yes

(Note: responses are disaggregated by program (e.g., Sports Medicine) but questions were not limited to the students' evaluation of the Sports Medicine program/faculty, but rather their Pepperdine experience overall).

In the Natural Science Division, 94% of respondents indicated they would recommend Pepperdine to others (96.6% of Sports Medicine Alumni indicated they would recommend to others). When asked why [a student] would, or would not, recommend Pepperdine to others, some respondent comments included:

- Sports medicine dept was phenomenal. Appreciated the GE requirements to broaden my educational experience.

- Attending Pepperdine was a defining factor in shaping who I am as a Christian, as a scientist and as an individual. I would love others to have the same experiences I did.

- I would recommend Pepperdine, especially for the natural science faculty, because of the culture the school embodies. Pepperdine is an institution that truly advocates for students and helps students receive an education rather than merely acquire a diploma.

- It's expensive! I loved my time at Pepperdine, but I feel like my academic training may be have

been better (or just as good) elsewhere. But the care and leadership training I received has been so incredibly useful in my life. So that tips the scale to “yes” on this question.

The small percentage of students that indicated they probably would not recommend Pepperdine to others cited reasons of: cost, location (isolated campus), and somewhat exclusive culture.

Full survey results are available (see attached survey). Other measures of satisfaction are presented in a later section of this report where they provide indirect evidence of specific institutional and program learning outcomes.

Senior & Alumni Survey: The Natural Science Division previously administered a Graduate Satisfaction Survey (2008, 2009, 2010) and results from these surveys were aggregated and reported on in a 2011 SPME program review. The measures that provided indirect evidence of program effectiveness on SPME PLOs included:

How do you rate the preparation the National Science Division provided to you in each of the following areas? (Answers range from excellent to poor)

1. Applying scientific knowledge and skills
2. Evaluating the quality of published literature
3. Improving laboratory skills
4. Improving your ability to find, screen, and organize information
5. Improving your ability to conduct research
6. Preparing you to pursue life-long learning
7. Speaking effectively through oral presentations
8. Thinking logically to resolve analytical problems
9. Understanding written information
10. Writing effectively

As a part of the graduate survey, graduates were asked to rate their level of satisfaction on several measures of quality of instruction/faculty members. The response options include: very satisfied, satisfied, neutral, dissatisfied, very dissatisfied. Overall, graduates report a high level of satisfaction (very satisfied to satisfied) on several measures of teaching quality (Table 15-1). One measure received negative feedback, indicating that 8.7% of respondents were dissatisfied with the ‘quality of instruction in lower-division courses’ (2010). Through closer evaluation of student evaluations, SPME faculty hypothesize that some students indicated dissatisfaction with instruction in a lower-division course that was taught by a one-year visiting faculty who was brought in to cover the sabbatical of the regular instructor the course, a full-time tenure track instructor who regularly receives very high ratings on student evaluations.

## **16. Please describe evidence of students' research and publications, awards and recognition, professional accomplishments.**

### **Evidence**

*Please attach evidence.*

SPME\_Student\_Scholarship.pdf

The four faculty teaching in Sports Medicine regularly engage undergraduates in their research; averaging 4 students per faculty per year. work with an average of 4 undergraduate students. Between 2010 and 2015, Sports Medicine students in our courses, summer research programs, and honors program presented 36 posters/oral talks at local, regional, and national meetings. In addition, they were authors on 3 peer-reviewed publications. Two students completed honors theses. (See attached document: Student Scholarship).

## ANALYSIS OF EVIDENCE: Integrity

### Integrity

**In meaning of the degree (section four) student learning outcomes and curriculum matrixes were used to define the degree. Now please describe the processes used to ensure the rigor of the program.**

**17. Are the graduates achieving the student learning outcomes at the expected level? How was the threshold determined? How do you know your expectations are appropriate? Do you use comparisons based on national standards or benchmarking? How have your assessment findings supported this?**

Based on findings from the program comparison in a previous section of this report, the Sports Medicine program at Pepperdine appears to meet, if not exceed proper emphasis on courses within exercise science and natural science.

A majority of exercise science programs adhere to a common set of core curriculum and course content, varying mostly in what is required outside of the discipline (e.g., number of courses/units in chemistry, physics, and math). In fact, program learning outcomes in exercise science may often mirror those of a biology program given that exercise science is, at its core, the study of human biology under various conditions across the lifespan. As indicated by Project 2016 presented by the American Association for the Advancement of Science (AAAS), there are benchmarks for scientific literacy in biology as well as other scientific disciplines. The Sports Medicine Program's three program learning outcomes provide benchmarks similar to the ones proposed by AAAS. PLO 1 emphasizes a conceptual understanding of basic principles and processes (human anatomy and human physiology: functional units of life, relationships among systems, structural and functional components of life) and deeper understanding in areas of physiology (as it pertains to exercise), motor behavior, and biomechanics. Mastery is expected in the upper-division courses and requires far more than a demonstration to memorize facts. PLO 2 pertains to scientific investigation of biological phenomena, and this requires a more synthetic approach. It is true that exercise science requires some foundational knowledge, but the goal of the PLO 2 is to train students how to ask questions about living systems and to apply methods in which they can find answers to those questions through rigorous scientific inquiry. Finally, PLO 3 is about application and integration of knowledge gained from the discipline. This requires the ability to think of one's discipline in a broader, creative, and critical context. Additionally, students are expected to display the ability to accurately and effectively communicate about science to a broader audience.

All of our courses assess student learning through the evaluation of direct evidence. We have previously collected and analyzed indirect and authentic evidence in the evaluation of program goals and learning outcomes. While indirect and authentic evidence is often available through various courses and program experiences, the Sports Medicine program has not developed a regular method with which to gather and evaluate student learning through these methods. Use of these three indicators, separate and combined, provides a holistic assessment of the program's effectiveness. Based on our course assessments, the majority of students demonstrate achievement of the PLOs at the mastery-level at the end of the upper-division courses (capstone series). Given the strategic sequencing of courses and progression of learning levels across the curriculum, students are demonstrating the building and development of knowledge as they advance through the curriculum.

Further, the appropriateness of the rigor of our program can be estimated by the success of the



graduates in their post-graduate endeavors in science-related disciplines/fields. This data is presented in a later section on assessment of PLO 1 and sustainability of the program.

**18. Is there assurance that students consistently meet the standards of performance that the major has established? What happens to students that don't meet the standards?**

A minimum GPA of 2.000 (C) for work taken at Seaver College and for work done in the major(s) is required for the bachelor's degree. When a student's cumulative GPA falls below 2.000, that student is placed on academic probation, which is considered a warning. Any student on academic probation must: (1) earn a minimum GPA of 2.000 in the next term of enrollment, and (2) be removed from academic probation within one calendar year. Failure to meet either stipulation will result in academic dismissal. Before requesting readmission, students who are academically dismissed must demonstrate successful completion of a full load of classes elsewhere for at least one term and fulfill all other requirements as specified by the Credits Committee. A student is considered in good academic standing unless he or she is placed on continued academic probation. Continued academic probation occurs when a student on academic probation earns a term GPA of 2.000 or higher in the subsequent academic semester, but his or her cumulative GPA remains below 2.000. Students on continued academic probation may remain enrolled but will no longer be considered in good academic standing.

While Sports Medicine students must maintain a minimum 2.000 GPA in the major, there is no minimum grade requirement for prerequisite courses in Sports Medicine; students are simply required to pass each prerequisite class in order to be eligible for the subsequent course in the major. The SPME Faculty believe this may be a problem area for a small number of students. Anecdotally, students who do not earn a minimum of a C- in lower-division courses continue to struggle to meet standards of performance in upper-division classes. While poor performance in the first semester of college science courses can be an indication of the student's struggle to acclimate to the change in rigor and time demands from high school, poor performance in lower-level science courses can also indicate a lack of fit for the student and chosen major. In either case, SPME faculty attempt to counsel students accordingly, either in providing resources for adapting to the rigor of their coursework or to help the student find a major that may be better suited to their abilities and interests. At this time, without a minimum performance standard in courses or in signature assignments, students may fall below a basic standard.

**19. Please present an integrated analysis of the data collected from the assessment of direct learning and indirect learning ( survey data, focus group, alumni data, and authentic evidence). Please report on the findings from the last comprehensive program review. In summary please explain how the program has achieved a holistic evaluation of the students' educational experience.**

**Evidence**

*Please attach evidence.*

SPME\_Tables\_19\_1\_through\_19\_5.pdf

PLO1\_4\_\_Mastery\_\_Summary\_\_\_SPME\_430\_2012MF.pdf

PLO2\_\_Developed\_\_\_MTH\_317\_2012PM.pdf

PLO3\_\_Mastery\_\_Summary\_\_\_SPME\_360\_2012HM.pdf

PLO1\_\_Mastery\_\_Summary\_\_\_SPME\_410\_2014PM\_\_student\_work\_samples\_included\_.pdf

PLO2\_\_Mastery\_\_Summary\_\_\_SPME\_250\_PM\_\_student\_work\_samples\_.pdf

All courses that designate mastery-level of a PLO in Sports Medicine are assessed using direct evidence from specific courses. Some lower-level courses are assessed at the development-level. The format of the assessment varies across the courses (e.g., exam questions, pre-post test, research poster). Since the time of the last program review, the Sports Medicine program systematically assessed the three program learning outcomes using direct evidence. Where available, indirect and authentic evidence was used to triangulate the findings. The following is a comprehensive summary of the evidence of each program learning outcome.

**PROGRAM LEARNING OUTCOME 1:** Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics.

#### PLO 1: DIRECT EVIDENCE

Program Learning Outcome 1 was assessed in the 2013-2014 academic year in courses that facilitate mastery level skills. The Sports Medicine faculty consider PLO 1 the foundational learning outcome with respect to fundamental areas of knowledge as it pertains to the exercise sciences; such that, our students, after completing the sequence of courses will demonstrate mastery in breadth of knowledge across the spectrum of the exercise sciences and mastery in depth of understanding in the areas of physiology, motor behavior and biomechanics. Course material from SPME 410 (Neuroscience of Motor Behavior) was used to directly assess mastery-level of motor behavior, course material from SPME 430 (Biomechanics) was used to directly assess mastery-level of biomechanics, and course material from SPME 460 (Health and Disease) was used to directly assess mastery-level of physiology. Table 19-1 summarizes the evidence, samples, analyses, and results of the assessments performed in SPME 410, SPME 430, and SPME 460.

Findings from each course included: 1) SPME 410: Students demonstrated proficiency in recognizing neuroanatomical structures and functions (multiple choice section) but some students had difficulty applying this knowledge to a novel motor control scenario as assessed in the essay question. However, all students demonstrated mastery of application and synthesis of this information in their laboratory reports. 2) SPME 430: On exams and in the final course projects students demonstrated their understanding of mechanical principles and applied these principles (biomechanical concepts) to novel situations. While successful in the aggregate and for the vast majority of students, a few areas of student learning relative to PLO 1 merit focused attention in future course offerings. 3) SPME 460: Students in this class demonstrated mastery in a variety of procedures used to evaluate health and fitness. Students also demonstrated mastery in applying their knowledge (results from health fitness evaluations) to individualized exercise prescription. The lowest score (ECG stress testing) involves both high technical requirement and is a procedure in which they had the least exposure/practice. The highest score (fitness assessment) involves the least technical requirement and is achieved using procedures in which the students had the most experience prior to testing. Complete analyses and reports from each course are available. Based on the overall course assessments for mastery of PLO 1, SPME faculty concluded that a) the SLOs in SPME 410, 430, and 460 appropriately align with PLO 1 and b) students are meeting and/or exceeding expectations at the mastery level of PLO 1 in these courses.

#### PLO 1: INDIRECT EVIDENCE

As capstone courses capture both the breadth and depth of the curriculum, student perceptions of their capstone experience provides indirect evidence of PLO 1. When alumni were asked, "If you were involved in a senior capstone course through the Natural Science Division, how would you rate it?" (ratings based on a four-point scale where 1 = very poor to 4 = very good), 100.0% of Sports Medicine alumni (n=18 responses) felt that their senior capstone experience was 'good' to 'very good'. In this same survey, some comments on suggestions for improvement included:

- The Sports Medicine faculty need more professors to allow the class sizes, especially the capstones, to remain small.
- SPME Majors need a capstone!

Another indirect estimate of PLO 1 is alumni employment/admission to graduate school and the alumnus perception of whether or not their education prepared them for such activities. In the recent OIE Alum I Survey, 76.7% of Sports Medicine alumni were either employed full-time or in graduate/professional school and 95.7% of respondents felt that Pepperdine prepared them well for these activities.

#### PLO 1: AUTHENTIC EVIDENCE

A measure of the programs effectiveness in educating the students in the breadth and depth of the discipline is the success of our graduates in terms of their admission to graduate/professional school and in securing jobs in the discipline. Table 19-2 shows the postgraduate degree/career of female Sports Medicine alumnae, graduating between 2005-2015 (N=182). Because of when the B.A. degree option began being offered, the first cohort of graduates with this degree was in 2009. Of the 182 alumnae, 153 (84%) earned a B.S. degree. The majority of female graduates earn a degree and obtain careers in rehabilitation (PT/OT) (20.6%), with medicine (MD/DO) (14.8%), allied health fields (PA/NP/RN) (13.8%), and research (MS/PhD) (13.2%) the next most prevalent. With some alumnae unaccounted for, the majority of our female graduates pursue postgraduate degrees (n=118; 64.8%) and almost all pursue a degree/career within the discipline or a closely related field (n=148; 81.3%). Data on male alumni not yet compiled.

PROGRAM LEARNING OUTCOME 2: Apply the scientific method in order to understand, evaluate, and/or solve problems in the exercise sciences.

#### PLO 2: DIRECT EVIDENCE

Sports Medicine faculty assessed Program Learning Outcome 2 in the 2011-2012 academic year. The development of the learning outcome was assessed in SPME 250 [Motor Development] and MATH 317 [Research Methods & Statistics] and mastery was assessed in SPME 430 [Biomechanics of Human Movement].

Students across all three courses were assessed in the skills of research methods. The complete assessments of PLO 2 in these courses are available. In summary, students achieved at or above the expected level in each course:

- SPME 250: Score on assignment  $x=85.0\pm 7.0\%$  (range: 72.5-95.0%)
- MATH 317: Score on mock research project  $x=90.0\pm 6.0\%$  (range: 75.0-95.0%)
- SPME 430: Group research project (data collection, analysis, presentation of findings); Twenty-eight of 28 students were proficient (3) or highly proficient (4) on a scale of 0-4 across three dimensions of scientific method assessment rubric

#### PLO 2: INDIRECT EVIDENCE

Scientific Method: When alumni (n= 142) were asked, "Based on your educational experiences in the Natural Science Division, please indicate whether you agree or disagree with the following statements" (ratings based on a four-point scale where 1 = strongly disagree to 4 = strongly agree), 97.9% of Sports Medicine alumni felt that their lab science course taught [them] critical thinking as it pertains to the scientific method.

#### PLO 2: AUTHENTIC EVIDENCE

Scientific Method: Undergraduate involvement in faculty research is an avenue in which the program can demonstrate success in the student's ability apply the scientific method to problems in exercise science. As discussed in a previous section of this report (question 16 – evidence of student research and publication), students involved in faculty research results in presentations at

local and national conferences and publication of peer-reviewed abstracts and manuscripts.

PROGRAM LEARNING OUTCOME 3: Use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences.

#### PLO 3: DIRECT EVIDENCE

Sports Medicine faculty assessed Program Learning Outcome 3 in the 2011-2012 academic year. Because of the multi-faceted nature of PLO 3, the different core skills addressed in the learning outcome were assessed by separate courses. Mastery of 'critical thinking' was assessed in SPME 360 [Exercise Physiology]; mastery of 'oral communication' and 'quantitative reasoning' were assessed in SPME 430 [Biomechanics of Human Movement]. Mastery of 'written communication' was later assessed in SPME 410 [Neuroscience] (Spring 2015). The complete assessments of PLO 3 in these courses are available. In summary, students achieved at or above the expected level:

Critical Thinking: (SPME 360) Pre-post assessment measuring critical thinking. Students improved from pre-course assessment 3.19/5.00 (~65% competency) to post-course assessment 3.46/5.00 (~77%).

Oral Communication: (SPME 430) Twenty-eight of 28 (100%) students were proficient (3) or highly proficient (4) on a scale of 0-4 across six dimensions of oral presentation skills/parameters (mean  $\pm$  sd = 3.43  $\pm$  0.50)

Quantitative Reasoning: (SPME 430) On Exam 1, 12 of 28 students (43%) were not proficient (grade on the exam) at performing standard biomechanical calculations. Students' quantitative reasoning ability improved by the time they completed the final project and all students (100%) demonstrated proficient to highly proficient quantitative reasoning and calculation skills at course conclusion.

Written Communication: (SPME 410) Students were evaluated in their ability to effectively write an abstract, summarizing an experiment conducted during lab. Abstracts from seven students were rated by two independent reviewers using a rubric that evaluated the writing on five dimensions on a four-point scale, with 0 = unacceptable to 4 = sophisticated understanding. Five of the 7 students (71.4%) scored a (3) or higher on the five dimension, demonstrating sound to sophisticated understanding in scientific writing. Two students did not meet the performance expectation in written communication, demonstrating basic skill level. Anecdotally, the two independent raters found that the rubric, used across all disciplines, was not easily interpreted for the sciences and may have compromised inter-rater reliability. Future assessments of written communication in Sports Medicine should use a rubric that is geared towards discipline-specific writing.

#### PLO 3: INDIRECT EVIDENCE

Critical Thinking: When alumni (n= 142) were asked, "Based on your educational experiences in the Natural Science Division, please indicate whether you agree or disagree with the following statements" (ratings based on a four-point scale, with 1 = strongly disagree to 4 = strongly agree), 97.9% of Sports Medicine alumni felt that their lab science course taught [them] critical thinking as it pertains to the scientific method. Additional indirect measures of critical thinking are discussed in the section of this report on core competencies.

Quantitative Reasoning: When alumni (n= 129) were asked, "Based on your educational experiences in the Natural Science Division, please indicate whether you agree or disagree with the following statements" (ratings based on a four-point scale where 1 = strongly disagree to 4 =

strongly agree), 89.1% of Sports Medicine alumni felt that the training in mathematics increased [their] quantitative skills, with only 20.9% indicating they strongly agree. Understanding these ratings based on B.S. and B.A. degree would help to faculty to better understand these results. There currently is a disparity in the amount and degree of math exposure that is required for the B.S. and B.A. degree students.

Indirect evidence on information literacy, written communication, and oral communication are discussed in the section of this report on core competencies.

## ASSESSMENT OF OTHER PROGRAM CONTENT AND INSTITUTIONAL LEARNING OUTCOMES

### Sports Medicine Program Goals

In addition to the Program Learning Outcomes, several items on the OIE Alumni Survey provide an indirect assessment of several of the Program Goals.

**PROGRAM GOAL 3:** Prepare students for careers or graduate work in the exercise sciences. The OIE Alumni Survey indicated that 70.8% of respondents are attending or have attended graduate school in a science related discipline. Whether including questions on the General Education curriculum or the student's Pepperdine experience as a whole, a majority of alumni feel that their Pepperdine experience prepared them employment and/or graduate school (Table 19-3). Table 19-2 shows the postgraduate degree/career of females Sports Medicine alumnae (N=182) from 2005-2015. This table was commented on in the assessment of PLO 1 previously in this section.

**PROGRAM GOAL 4:** Develop in students an awareness of vocation, the enhanced potential for service in a chosen profession, in public life, and in the support of cultural life of a chosen community, and commitment to use their knowledge for service and **PROGRAM GOAL 6:** Develop in students an understanding that a life of purpose ultimately calls for integration of knowledge, vocation, and faith, and commitment to lifelong practice, were evaluated together because of the overlap in survey questions to both program goals. Sports Medicine faculty should consider collapsing these two program goals into one or providing further clarification on the distinction between the two.

**PROGRAM GOAL 5:** Develop in students an understanding of the relationship between faith and scientific knowledge and the limitations each has in answering questions about the human body and its interaction with the natural world. On the OIE Alumni Survey, Sports Medicine alumni (n=125) were asked to rate the extent to which their Pepperdine program "faith and learning". On a four-point scale, with 1 = not at all to 4 = extremely well, 96.8% of Sports Medicine alumni scored this item at a (3) 'reasonably well' or higher (4) 'extremely well' (Score 3.40 on 4.0 scale). Compared to every program in the Natural Science Division, Sports Medicine program was the highest (range: 3.09 – 3.40). The Sports Medicine faculty take the topic of integration of faith and learning seriously and are intentional about how topics of faith can be interwoven throughout the curriculum from the lower- to upper-division courses. And while the survey data is encouraging, this facet of the program remains a priority for the Sports Medicine faculty.

Program goals not directly or indirectly assessed included, Program Goal 1: Develop in students an understanding and appreciation of the human body and the processes involved in human movement; and Program Goal 2: Develop in students an understanding that the discipline of human movement requires a personal commitment to engage in healthy lifestyle behaviors -- and convey this knowledge by encouraging others to adopt healthy lifestyle behaviors.

### Measures of Diversity and Institutional Learning Outcome 3

The SPME curriculum is designed to:

- a) Offer courses that are appropriately broad in scope, exposing the students both a breadth of topics within the discipline as well as a diversity within the subdisciplines (e.g., discussion of population demographics, age, sex, disability across various courses), and
- b) Deliver content and facilitate student success through a range of effective teaching and learning modalities.

The diversity goal is currently represented in PLO 1: Demonstrate a breadth of knowledge across the spectrum of the exercise sciences and a deeper understanding in the areas of physiology, motor behavior and biomechanics. With respect to the breadth and rigor of the curriculum, our program was external reviewed (2011) and it was stated, "At this time the overall curriculum for both majors, B.S. and B.A., appear appropriate in content and diversity as compared to national standards and/or peer-institutions. With respect to the B.S. specifically, the curriculum appears similar or more rigorous as compared to equivalent programs at peer-institutions." (K. Sumida, External Reviewer, 2011). While breadth and depth are readily apparent in the curriculum, it may be prudent for the Sports Medicine faculty to articulate topics of diversity not only in course content (e.g., diverse populations), but in approaches to pedagogy.

Institutional Learning Outcome 3 states that upon graduation students will develop and enact a compelling personal and professional vision that values diversity. Table 19-5 shows select items from the OIE Alumni Survey as they pertain to issues of diversity. While the majority of Sports Medicine students feel that their undergraduate classroom experience helped them to understand issues of diversity, it appears that Pepperdine curriculum can and should be more intentional in bringing in diverse perspectives, especially as it pertains to different political and religious perspectives (See Table 19-5). One alumnus commented in the survey (regarding suggestions for improvement – not necessarily specific the Sports Medicine program), "Our discussions of controversial topics were particularly beneficial, especially now that I am in the field of medicine. One potential area of improvement would perhaps be to introduce common perspectives by people who are not of the Christian faith.

#### High Impact Practices

**RESEARCH OPPORTUNITIES:** When Alumni were asked (n=65), "to what extent did working with faculty contribute to your development, both personally and professionally, after graduating from Pepperdine?" (ratings were based on a 4-point scale; 1 = not at all to 4 = very much), 47.7% of Sports Medicine graduates felt that working with faculty on research contributed significantly (score 4) to their professional development. When including respondents who indicated that the experience contributed 'quite a bit' (score 3), the proportion increased to 72.3%. Similarly, alumni feel that their experience working with faculty on research also contributed to their personal development, 73.8% indicated a score of 3 (quite a bit) to 4 (very much).

There is currently not enough data to analyze the results of the pre-post test of student knowledge and experience in research based on the activity of one faculty member. The SPME faculty will consider standardizing the pre-post test and administering it to all students involved in undergraduate research in Sports Medicine.

**STUDY ABROAD:** When Alumni were asked, "to what extent did the following contribute to your development, both personally and professionally, after graduating from Pepperdine?" (ratings on a 4-point scale; 1 = not at all to 4 = very much), 83.6% of Sports Medicine graduates felt that the study abroad experience contributed significantly (score 4) to their personal development. The value of the abroad experience, according to the Alumni survey, appears to reside in the personal development, as 37.7% of SPME alumni felt it contributed significantly to their professional development.

**INTERNSHIPS:** When Alumni were asked (n=53), “to what extent did the following contribute to your development, both personally and professionally, after graduating from Pepperdine?” (ratings on a 4-point scale; 1 = not at all to 4 = very much), 39.6% of Sports Medicine graduates felt that the internship experience contributed significantly (score 4) to their professional development (56.6% felt that it contributed ‘quite a bit’ to ‘very much’ to their professional development). This is not dissimilar from how alumni perceive their internship experience contributed to their personal development; 30.2% felt it contributed ‘very much’ and another 26.4% felt it contributed ‘quite a bit’.

**SERVICE-LEARNING:** Sports Medicine students had the opportunity to participate in field-based “experiential learning” as a required part of SPME 110 – Introduction to Exercise Science. Service-learning was defined as students contributing their time and energy to identified community tasks, in the context of academic coursework that involved conscious reflection and intentional student learning goals (Colorado Campus Compact publication, 1994). The SPME 110 service-learning experience was designed to accomplish student learning outcomes (SLO) listed in a previous section of this report. The students participated the service-learning project one hour per week for 10 weeks in one of three service-experiences: 1) assisted with sports skill games and instruction during the noon recess at the local elementary school, 2) assisted with swimming or golf instruction of disabled adults who came to Pepperdine for these activities, or 3) assisted with exercise classes at Malibu Senior Center. Each student submitted a two-three page paper responding to six prompts based on their service-learning experience. Student success was measured based on faculty evaluation of student papers. Some examples of student responses to prompts were:

What was of greatest value to you in this service-learning experience?

- To have an opportunity to spend time with and impact the lives of people whose lives are completely different than mine, but to still get to share common interests with them. Not only did I (hopefully) impact their lives, but they also taught me a lot about other people and myself.
- Learning how to communicate effectively with people who can't always speak their minds. Showing care, attention, and love for the people that are often rejected by the societal and cultural norms.
- During the service learning experience helping those around me and putting smiles on little kids faces all the while learning about myself and my teammates was the greatest value.

How did your service-learning opportunity impact your understanding and respect for other people?

- It gave me much perspective and made me realize how thankful I should be for my body and mind. I also gained respect for people with disabilities and became aware of just how much help they need, but that they are incredible people just like me.
- All life is worth living, they (the adults) were so down to earth and it instilled in me the desire to help and serve them because they were underserved and often not appreciated.
- It allowed me to have so much respect for the people there who were less fortunate, but did not want people to feel bad for them.

Give an example of something you learned about others or yourself through the service-learning experience.

- I learned much patience through this opportunity and how to practice it, acknowledging when it is needed and just how important it is.
- We should all try to channel into that curiosity, passion, and excitement for life we had as children.

All of the students reported it as a valuable experience that increased their awareness of the needs of the community. Students also reported that the experience related to their academic

training and vocational calling.

The service-learning project was eliminated from the course in 2012 because enrollment in SPME 110 increased from 30 students in 1998 to 73 students in 2012.

## WASC 5 CORE COMPETENCIES

### WASC 5 CORE COMPETENCIES

#### **20. How does the program ensure that graduates meet the WASC FIVE CORE COMPETENCIES? Present your findings of measurements you have done of the core competencies ( may be less than 5).**

The SPME program is designed to breed, among its students, intellectual values and perspectives, critical thinking abilities, broad knowledge and learning, and a range of capacities useful to leading purposeful lives and achieving success in a career and/or vocation related to the exercise sciences. Additionally, the SPME program is designed to expose students to the central components of their liberal arts education (the core competencies) in ways that require the acquisition and application of these skills (critical thinking, information literacy, oral communication, written communication, and quantitative reasoning) within their major and at systematically higher levels of learning across the curriculum in a way that translates to their long-term interests or career demands.

As indicated in question 19 (data analysis), the Sports Medicine Program addresses all five core competencies in the curriculum and, as they are embedded in PLO 3 (use the central components of a liberal education, including critical thinking, information literacy, oral and written communication, and quantitative reasoning skills in analyzing problems in the exercise sciences) (see Table 20 - 1), students are expected to demonstrate mastery in these areas within the discipline by the time of graduation (Table 20-2 Alignment of WASC core competencies to specific Sports Medicine courses). Additionally, as a liberal arts college, Seaver College aims to offer a liberal arts education, such that these core competencies are considered pillars of the educational process across the curriculum (both in General Education courses and in the student's chosen major). It is important that students are developing and mastering the skills of information literacy, critical thinking, quantitative reasoning, and oral/written communication across the curriculum.

With respect to Sports Medicine, information literacy is fundamental to our lower- and upper-division courses. Students are expected to gain a basic understanding of the language of science, human biology, and research methods and through upper-division coursework they are expected to apply this language to interpreting scientific articles and exam questions, and ultimately synthesize information to create and articulate evidence-based ideas and hypotheses. Demonstration of these levels of learning as it pertains to information literacy is directly assessed in every course based on student performance on assignments and exams. A crude estimate of student success in this area is the average grade in a course. Based on this and individual course assessments, students are meeting (and often exceeding) minimum expectations of information literacy. In the 2015 OIE Alumni Survey, four questions were asked of the alumni on how well [their] Pepperdine education gave them skills associated with information literacy. On a four-point scale, Sports Medicine alumni rated their preparedness in information literacy 3.35 (1 = not at all to 4 = extremely well), average across four questions (see Table 20-3).



Like all science courses, critical thinking and quantitative skills are requisite for anyone majoring in Sports Medicine. The independent research projects and in-class laboratory experiments are designed to teach students to ask questions and to design experiments that provide answers. Such an approach is part of the scientific method and students must use statistical analyses to test hypotheses. In addition to statistical analyses, several of our courses require physiological or biomechanical calculations. These are quantitative exercises that occur throughout the curriculum. As previously indicated in our assessments, our students show increased maturity to think critically, and their ability to evaluate information from a quantitative perspective definitely improves as they advance to senior-level courses. One good metric is the number of research projects that our students present at scientific meetings, where they must defend their results in a logical and convincing manner. In the 2015 OIE Alumni Survey, three questions addressed the graduates' preparedness in quantitative reasoning skills and two questions addressed their preparedness in critical thinking skills. Table 20-3 shows that >96% of Sports Medicine alumni feel reasonably to extremely well prepared in terms of critical thinking and quantitative reasoning.

Nearly all of our courses are designed to enhance either or both written and oral communication. Students are taught to use the primary literature, write research proposals, maintain detailed laboratory workbooks, organize poster presentations, and orally present their research and ideas to their peers. All of these activities are evaluated with rubrics to provide direct evidence of student learning. The 2015 OIE Alumni Survey assessed the extent to which graduate's felt their Pepperdine education prepared them be successful in written and/or oral communication. The survey asked three questions about oral and written communication and >92.5% of Sports Medicine alumni felt their Pepperdine education prepared them reasonably to extremely well in these areas.

Various items from the 2015 OIE Alumni Survey can be summarized into a composite score for each of the five core competencies. When summed, Sports Medicine alumni are exceeding expectations with respect to preparedness in core competencies (see Figure 20-1).

#### **Evidence**

*Please attach evidence.*

SPME\_Table\_20\_1\_through\_20\_3\_and\_Fig20\_1.pdf

## **SUSTAINABILITY: RESOURCES**

### **Sustainability**

**21. With the rapid changes in the higher education environment, the University needs to demonstrate how financial viability and planning of their long-term stability are ensured.**

**In order to demonstrate this each program should address**

- a. questions about the level of student demand for the program and**
- b. the degree to which resources are allocated appropriately so they are sufficient to maintain program quality.**
- c. What is happening within the profession, local community, or society that identifies an anticipated need for this program in the future? (If appropriate include market research.)**

Over the past five years, the number of students enrolled in the Natural Science Division has averaged 557 students and on average >35% of students in the Natural Science Division major in Sports Medicine. Sports Medicine is not only one of the highest enrolled majors in the Division, it is among the best at student retention and graduation (see previous sections on student enrollment, retention and graduation rates, and graduate success). Both the numbers and qualitative student feedback indicate there is a demand and high regard for the program, courses, and faculty in Sports Medicine. Anecdotally, the faculty members regularly receive correspondence from alumni either during or after their graduate school training, expressing their appreciation for the unique care of the faculty and rigor of the courses they received through the Sports Medicine program.

The Sports Medicine Program has always been one of the highest (if not highest) enrolled majors in the division. And further, the Sports Medicine program has seen dramatic growth over the past ten years. While Pepperdine University has made plans to grow the student body at Seaver College over the next ten years, Sports Medicine has experienced this growth prior to the College's intention. In the Sports Medicine program, as demand for the major increased, the number of available faculty to meet the demand decreased. One initial and sustained change has been an increase in class size. The increase in class size has affected the way faculty members are able to effectively teach (class sizes of 50 instead of 20) as well as assess student learning. While Visiting Faculty appointments help cover additional course offerings, they do not alleviate the increased demand for undergraduate research opportunities, letters of recommendation, and advising in the major. Faculty available to teach courses in the major aside, the increase in class size over the past 5-10 years has not been met with concomitant resources. With increase in student numbers, the number of students struggling to understand concepts increases and thus time spent dedicated to these students increases. Similarly, an increase in student numbers has led to an increase in the number of students in our courses who are registered with the disability services office; in which case, these students often require separate and/or unique assessment experiences. While the Division and College provide support for teaching assistants (TA), there are often limitations on which students can be hired (those who have outside funding), limitations on number of hours a TA can work (not determined by needs of the Professor), and limitations intrinsic to the skill-level of an undergraduate student. The increase in numbers of students in each class and an increase in the number of courses offered has increased the use (wear-and-tear) of the laboratory equipment. The College has sometimes provided internal support for replacement of laboratory equipment due to student-use. In many circumstance, Sports Medicine faculty continue to write grants to support replacement of major equipment in the laboratory. Despite that the Division is able to provide support for students to attend conferences and/or participate in undergraduate research, the availability of the Sports Medicine faculty members to mentor such students continues to decrease.

Despite the dramatic increase in growth, Sports Medicine students have continued to meet Program Learning Outcomes and continue to rate the program, professors, and their experience very highly. While this data may be viewed externally as a resource-neutral program, where the demands of the program are adequately, if not, exceedingly met, in fact, the data are misleading. In order to meet the demands of the program, the Sports Medicine faculty have sacrificed scholarly activity, community involvement (at Pepperdine and in the larger community), and anecdotally in their personal lives. While this report shows a continued activity of service to the Pepperdine community and to the communities in which the faculty members live, the general level of engagement in these communities, and relationships therein have decreased over the past five- and ten years, proportionate to the increase in demand in the Sports Medicine Program.

In Sports Medicine, it is the faculty member's experience that a) the program growth has outpaced the College's ability to meet the demand of such growth and b) there is a discrepancy between administration and faculty perception of the actual demand of program growth. The

Sports Medicine faculty members are passionate about the program: the students, the relevancy and rigor of the curriculum, the demand for the program, the success of the graduates, and the health of the program's future. While the Sports Medicine faculty members are hopeful that another tenure-track faculty member will help, the position at this time remains unfilled. Only four of the eight faculty members teach courses that satisfy the major. Without concrete changes in the program, including the number of full-time tenure-track faculty available to teach courses in the major, the Sports Medicine faculty members do not see the current size of the program (and estimated continued growth) as sustainable.

### **Evidence**

*Please attach evidence if applicable.*

## **22. FACILITIES**

**Please describe the adequacy of**

- a. Classroom space**
- b. Laboratories**
- c. Office space**
- d. Programming venues**
- e. Student study spaces**

The Natural Science Division at Seaver College is housed in two main areas, the first to fourth floors of the Keck Science Center (KSC) and the first floor of the Rockwell Academic Center (RAC). The total space allocated to the division is 39,037.5 ft<sup>2</sup>, and square footage within this space includes offices for faculty and staff, storage areas, support facilities, research and teaching laboratories, and classrooms. There is no immediate space allocated specifically for studying by students, but students are allowed access to empty classrooms during the day as well as the RAC lobby, which is decorated with adequate furnishings. In addition, students are in easy walking distance to the Payson Library.

Of the space allocated to the Natural Science Division, 943 ft<sup>2</sup> is used for the main office, stockroom, and tech support. In addition, there is approximately 1,401 ft<sup>2</sup> that includes space for office equipment, a break room, adjunct office space, a conference room, and the lobby. Storage space consist of 1,159 ft<sup>2</sup>. In addition, approximately 1,751 ft<sup>2</sup> is used for a vivarium, autoclaves, the stockroom, a cold room, chemical storage, and washroom.

Classrooms for all courses taught by programs in the division are scheduled by the Office Administrator of the Natural Science Division. Currently, the division has access to 9,801.5 ft<sup>2</sup> that is used as classroom space, with classrooms distributed throughout the RAC, KSC, CAC (Cultural Arts Center), and the Plaza. In addition, PLC102, a classroom adjacent to the Payson Library, is used to teach several classes in mathematics. The following is a list of classrooms by student capacity: 1) 50 students - Plaza 188 and KSC 130; 2) 30 students - CAC 124, CAC 125, and RAC 175; 3) 24 students - KSC 100, KSC 110, RAC 170; 4) 16-22 students - KSC 210, KSC 300, KSC 320, KSC 360, RAC 138, RAC 178. Four (KSC 210, KSC 300, KSC 320, KSC 360) of these classrooms are used as teaching laboratories as well as classrooms.

Faculty members have assigned lab space that is used for both research and teaching. Programs most of the laboratory space include Biology, Chemistry, Physics, and Sports Medicine. Collectively, this amounts to approximately 9,788 ft<sup>2</sup>. Laboratory space utilized primarily for teaching includes 14,956 ft<sup>2</sup>.

Office space for faculty is located in the RAC and totals 4,240 ft<sup>2</sup>. In addition, there are two offices in the PLC for one visiting professor in mathematics and the Coordinator of Nutrition's post-baccalaureate program for students interested in becoming Registered Dietitians.

## **FACULTY AND STAFF**

**23. What are the qualifications and achievements of the faculty/staff in the program in relation to the program purpose and goals? How do faculty/staff members' backgrounds, expertise, research, and other professional work contribute to the quality of the program?**

**Evidence in this category should include (this could be collected through faculty CVs) :**

- a. Proportion of faculty with terminal degrees**
- b. List of faculty/staff specialties within discipline (and how those specialties align with the program curriculum)**
- c. Record of scholarship for each faculty member, professional presentations for staff members**
- d. Faculty/staff participation in development opportunities related to teaching, learning, and/or assessment**
- e. External funding awarded to faculty/staff**

a. Proportion of faculty with terminal degrees: There are eight faculty in the Sports Medicine program, each having a Ph.D. in an area of specialization within exercise science/kinesiology. The Sports Medicine faculty, highest earned degree, area of specialization, specific rank, and teaching status in the program are shown in Table 24-1 (next section).

b. List of faculty specialties within the discipline: Table 24-1 shows each Sports Medicine faculty by their respective area of specialization. The area of degree specialization and research/expertise of the Sports Medicine faculty include:

Faculty that currently teaching SPME courses in the major

- Motor Learning & Development, Physical and Cognitive Dimensions of Aging
- Exercise Physiology, Sports Performance
- Exercise Physiology, Circulatory Physiology
- Exercise Physiology & Epidemiology, Maternal and Child Health

Faculty with current appointments outside of SPME/not teaching SPME courses in the major

- Biomechanics of Human Movement
- Athletic Administration, Medical School Entrance Exams and Success
- Physical Education Administration, Sports Psychology
- Exercise Physiology, Coaching

Table 23-1 shows the Sports Medicine courses taught by each member of the faculty

c. Record of scholarship: Members of the Sports Medicine faculty have historically displayed a high level of scholarly activity. Scholarly activity of the faculty between 2010 and 2015 and undergraduate student involvement is listed in the attached document (scholarship excerpts from faculty CVs). In addition to published manuscripts, abstracts, and presentations at conferences, SPME faculty also serve as Editors of journals in their areas of expertise and regularly participate as peer-reviewers (see attached Faculty CVs). From the last five-year review, although the Sports Medicine faculty remain productive as scholars, there is a decline in scholarly activity when comparing the activity of 2000-2005 to 2005-2010 and 2010-2015.

d. Faculty/staff participation in development opportunities related to teaching, learning, and/or assessment: As stated in a previous section of this report, the Sports Medicine faculty members are individually engaged in the development of their own pedagogy. Examples of these practices include annual reviews of teaching by the Divisional Dean, attending The Teaching Professor Conference, attending WASC workshops, and regularly reading journals related to pedagogy in higher education, pedagogy in the sciences, and the pedagogy of undergraduate research. Sports Medicine faculty are regular attendees at meetings and workshops provided by the Natural Science Division, Seaver College (e.g., Fall Faculty Retreat), and Pepperdine University as it

pertains to pedagogy and assessment. Sports Medicine faculty currently serve on committees related to pedagogy and assessment (Teaching & Learning Committee and the Seaver Assessment and Learning Team). Additionally, several Sports Medicine faculty are members of the Council on Undergraduate Research. Similarly, Sports Medicine faculty regularly engage and participate in local and regional professional organizations that emphasize undergraduate research, where students have presented research posters and faculty have served on abstract review and research recognition committees (e.g., Southwest American College of Sports Medicine, Southern California Conference for Undergraduate Research).

e. External funding awarded to faculty/staff: The Sports Medicine faculty who are active in their scholarship are actively seeking external funding to support their research. A list of external funding awarded to each faculty is available in the attached faculty CVs (See attached CVs).

### **Evidence**

*Please attach evidence.*

Carolyn\_Vos\_Strache\_CV\_pdf.pdf  
 CV\_Michael\_Feltner.pdf  
 CV\_Cooker\_Perkins\_Storm\_\_updated\_\_\_Oct\_2015\_.pdf  
 HMacRae\_CV\_2015.pdf  
 Vitae\_P\_MacRae\_Oct\_2015.pdf  
 LN\_RESUME\_2015.pdf  
 SPME\_Faculty\_Scholarship\_upd2.23.16.pdf  
 CV\_JJasperse.pdf  
 Table\_23\_1.pdf

## **24. FACULTY/STAFF**

**Are there sufficient numbers of faculty/staff to maintain program quality? Do program faculty/staff have the support they need to do their work?**

- a. Distribution of faculty across ranks (or staff years at institution)**
- b. Diversity of faculty/staff**
- c. Number of full-time faculty (ratio of full-time faculty to part-time faculty)**
- d. Student-faculty ratio**
- e. Faculty workload**
- f. Faculty review and evaluation processes**
- g. Mentoring processes**
- h. Professional development opportunities and resources (including travel and research funds)**
- i. Sufficient time for research, program development**

a. Distribution of faculty across ranks & c. number of full-time faculty: There are 35 tenured or tenure-track faculty members in the Natural Science Division. Currently, there are 27 tenured and eight tenure-track professors. There are three major ranks, Assistant Professor, Associate Professor, and Full Professor. Within each rank there are three steps. Disregarding the steps, there are 1 University Professor, 20 Full Professors, 6 Associate Professors, and 8 Assistant Professors.

In the Sports Medicine Program there are eight tenured professors, seven of which hold full-time appointments. Of these seven faculty members there are five Full Professors and two Associate Professors. The Sports Medicine program recently opened a tenure-track position in Functional

Anatomy (candidate search underway 2015-2016). The addition of the recent tenure-track position is necessary to offset teaching load reductions for administrative positions and other outside appointments held by faculty in Sports Medicine (Drs. Feltner, Nelson, Vos Strache, and Dunphy). Dr. Lex Gidley has served as full-time Visiting Professor in functional anatomy and biomechanics for the past three years (completing her Ph.D. while visiting, Fall 2015). Dr. Riggs Klika joined as a full-time Visiting Professor in AY 2013-2014 to cover the sabbatical release of Dr. Cooker Storm. Dr. Klika has remained as a Visiting Professor since that time to cover increased demand in the program as well as various release time of tenured faculty. Between 2010-2015, the Sports Medicine program has had one to two full-time visiting professors and additional need for adjunct professors to cover course demand.

b. Diversity of the faculty: In the Natural Science Division of Seaver College, the faculty are primarily white (>90% in 2008 and 2009) and equal by gender (50% and 56% male in 2008 and 2009, respectively). The Sports Medicine program has eight faculty members and mirrors the division in ethnicity and gender. Of the eight faculty members, seven have full-time appointments and consist of six full professors, two associate professors; of which all have earned degrees in an area of specialization within the exercise sciences (Table 24-1).

d. Student Faculty Ratio: The following figure (Figure 24-1) provides a summary by semester of student/faculty ratios, also known as faculty teaching equivalent (FTE), from Spring 2011 through Fall 2015. The overall FTE for lecture and laboratory courses remained fairly constant at approximately 20 (range: 16.7-21.5). The FTE for lecture courses is consistently higher than the FTE for laboratory courses. There has been an overall decrease in the FTE for lecture courses between Fall 2012 (a high of 30.9) to Fall 2015 (Fall 2014; low of 23.1), with an overall increase in FTE for laboratory courses between Spring 2011 (a low of 12.4) to Fall 2015 (a high of 14.9). The weighted FTE includes the numbers of students in lecture and lab courses in its calculation. None of the calculated FTE values include courses offered in the summer; it is assumed that inclusion of these courses would cause a slight increase in FTE. For the last 3 summers (2013-2015), three upper division SPME courses have been offered with 6-15 students in each course and these have been taught by adjunct or visiting professors.

e. Faculty workload: The maximum number of units a tenured member of the faculty is expected teach in an academic year (9 months) is 24 units or 12 units per semester. The formula used to determine workload is as follows: 1) three hours of lecture receives a credit of 3 units; 2) for each 3 hour lab, the faculty member receives 2.75 units of credit, and 1.75 units for a 2 hour lab. With the exception of SPME 250 (Human Development & Learning) and SPME 330 (Musculoskeletal Anatomy & Kinesiology), all Sports Medicine courses for majors have 3 hour labs.

Full time pre-tenured faculty members are required to teach 20 units per year. This is designed to provide more time for both course development and establishment of his or her research program. Generally, a pre-tenured member of the faculty will teach 8 units one semester and 12 units in the other semester.

For the past 5 years and longer (Table 24-1), several of our tenured members of the faculty have teaching reductions as a result of administrative appointments and titled professorships. For several years, Professor Michael Feltner has had an appointment in administration, Divisional Dean, Associate Dean of Seaver College, and now Dean of Seaver College. In his current position, his expected teaching in the program is limited if any. Professor Laurie Nelson has release time in order to fulfill her role as Pre-Health Advisor to Seaver College. In her current position, her expected teaching in the program is reduced by eight units. Professor Carolyn Vos Strache is the Director of the London Program and in this position has not teaching expectations in Sports Medicine. Professor Marv Dunphy, part-time tenured faculty in Sports Medicine serves full-time as the Men's Head Volleyball Coach at Pepperdine. Professor Dunphy's teaching

expectations are limited; he has routinely offered SPME 300 (Foundations of Coaching), an elective course in Sports Medicine. Finally, the four full-time tenured faculty who teach courses that satisfy the major regularly write for and are awarded release time in the form of a 4-unit (1 course) teaching load reduction or, when appropriate, a 1-semester to 1-year sabbatical. In the upcoming 2015-2016 academic year, three of the four teaching faculty have been awarded a 4-unit (1 course reduction) release time in order to focus time on their research and the fourth teaching faculty member is serving as the visiting faculty member for 1-year in the study abroad program in Florence, Italy.

Between 2006-2015, teaching reductions of tenured faculty and increases in student enrollment were offset with the use of a several full-time Visiting Professor positions. While the addition of the tenure-track position in Functional Anatomy (2015-2016) will better serve to fulfill the long-term unmet need, two visiting faculty positions for the 2015-2016 academic year are still required in order to meet the teaching demand for the program.

f. Faculty review and evaluation process: All full-time and visiting faculty in the Natural Science Division are asked to complete an Annual Faculty Activity Form. This form asks each member of the faculty to outline his or her activities in the areas of scholarship, teaching, and service. The Divisional Dean of the Natural Science Division reviews each of these annual reports and assesses student teaching evaluations of courses taught by each member of the faculty. After evaluating each report, the Divisional Dean provides written feedback of the faculty member's teaching and achievement, and the faculty member is asked to provide any written comments related to the evaluation. In addition, the Divisional Dean has one on one conversations with any faculty member needing further follow-up to the evaluation.

For full-time members of the faculty, each rank (e.g. Assistant, Associate, and Full Professor) has three steps. Based on information related to a faculty member's scholarship, teaching, and service, the Divisional Dean can recommend a step increase within a particular rank to the Dean of Seaver College, who makes the final decision regarding the step increase. Promotion to a higher rank, such as Assistant Professor to Associate Professor or Associate Professor to Full Professor, requires an evaluation by the Rank, Tenure, and Promotion (RTP) Committee, which consists of voting tenured representatives from each division in Seaver College as well as a non-tenured professor. For promotion in rank, the faculty member must provide information on Teaching Effectiveness, Scholarly Activity, and Service (professional, university, division, community). With the approval of the Divisional Dean, the candidate for promotion is asked to designate five peer reviewers, who will be asked to evaluate the information provided by the candidate. Each of these designated reviewers will provide a formally written response to each of the major categories, and the Divisional Dean will provide an independent response that includes details of the faculty member's teaching evaluations submitted by students. The RTP committee evaluates the evidence and makes a recommendation to the Dean of Seaver College, who has independently evaluated all of the evidence submitted on behalf of the candidate. The Dean's recommendation is then sent to the Provost and President.

The above outlined procedure is basically the same used for an individual submitting for tenure and promotion. All members of the faculty considered tenure-track receive a pre-tenure review that uses the same criteria as those outlined for tenure and promotion. This review occurs mid-tenure and is designed to provide constructive feedback concerning teaching, scholarship, and service. It also allows for the college to determine whether or not the faculty member should continue. If the evaluation suggests no reappointment, the faculty member is allowed to stay the following year prior to termination. If the reappointment is approved, the Divisional Dean and faculty member will go over the RTP report and decide the best course of action to address any identified weaknesses.

After tenure, each member of the faculty receives a five-year evaluation. The basic procedures are similar to those outlined for tenure and promotion, except only three designated peer reviewers are required. The RTP committee makes a recommendation to the Dean of Seaver College, and the Dean decides the appropriate merit raised based on the outcome of the evaluation.

g. Mentoring processes: All pre-tenured members of the faculty are assigned a senior mentor by the Associate Dean. In addition, the Associate Dean schedules workshops related to navigating the tenure process. All tenured and tenure-track faculty are required to submit a detailed annual report that outlines their pedagogy, scholarship, and service. The Divisional Dean of Natural Science evaluates these reports and examines student evaluations taught by each member of the faculty. After this initial evaluation, the Divisional Dean writes a formal assessment and provides information on student evaluations for the courses taught. The faculty member also is provided a written response from the Divisional Dean. After the faculty member receives this evaluation, the Divisional Dean and the faculty member meet to discuss any issues raised in the evaluation. The faculty member is provided an opportunity to provide a written response. Both the mid-tenure and five year reviews also provide each faculty member with input as to his or her progress.

i. Sufficient time for research, program development – We attempt to organize teaching schedules so that members of the faculty are allotted one day of the week with no classroom/laboratory teaching commitment. This provides time for research. In addition, support is available for research assistants. No members of the faculty in the Natural Science Division are required to teach during the summer. Therefore, they have nearly four months for research and development.

Given the increase in class sizes, student contact hours, and the increased demand for undergraduate research opportunities by the students, the Sports Medicine faculty have found it more difficult to find a regular meeting time that does not conflict with faculty schedule for obligations to teaching, research, and service. While discussions about pedagogy, curriculum, and various assessment activities have been accommodated in the regular academic year, the program review process largely taken the place of faculty discussion on, collaboration, and time for scholarship.

#### **Evidence**

*Please attach evidence if applicable.*

Table\_24\_1\_and\_Fig\_24\_1.pdf

## **FINANCIAL RESOURCES**

### **Financial Resources**

#### **25. Financial Resources:**

**Please describe your operational budget (revenues and expenditures) and trends over a 3-5 year period.**

The budget for the Natural Science Division consists of two separate operational budgets. One budget (11790) allocates funds to support salaries and benefits for staff, student teaching and research assistants, and adjunct professors. In addition, this budget supports student aid, professional travel, office supplies, telephone services, photocopying, computer and equipment upkeep for classrooms and offices, and other general expenses related to maintenance and



upkeep of the division. The second budget (11805) provides funds to support laboratories used for research and teaching. Budgeted items include professional services for upkeep of equipment and the physical plant, equipment, rentals, maintenance, and supplies. This particular budget is supplemented from student laboratory fees, and the division receives these fees at the beginning of each semester.

Individual programs do not have an itemized budget. Rather, funds in both of these budget categories are used to support all activities across the division.

Revenue from fees and miscellaneous sources has increased between FY11 and FY14 (Table 25-1). This particular review is used to offset expenses in operational budget 11805. In addition, general expenses have increased as well. For the past two years, the Dean of Seaver College has provided a significant increase in support for faculty travel.

In addition to the standard operating budgets, the Natural Science Division receives support for student scholarships that are awarded at the beginning of each fiscal year. These scholarships are awarded to defray cost of tuition. The following is a breakdown for the past five years: FY11 – \$126,646; FY12 - \$134,117; FY13 - \$140,823; FY14 - \$145,048; FY15 - \$150,850.

The Natural Science Division also receives revenues from private and public foundations. For the past three years, the division has received awards between \$25,000 and \$35,000 from Southern California Edison to support scholarships for students majoring in STEM-related disciplines. Private donors contribute between \$25,000 and \$40,000 each year to support faculty/undergraduate research projects during the summer. For the past five years (and even before), the Biology Program has received funding (\$440,350) for a summer REU (Research Experiences for Undergraduates) from the National Science Foundation (NSF). This grant supports undergraduate research, and aside from the funds from NSF, Seaver College subsidizes these activities.

#### **Evidence**

*Please attach evidence.*

SPME\_Table\_25\_1.pdf

## **EXTERNAL REVIEW**

### **External Review Report**

**In summary please explain how, through the findings in the annual assessments, the program has achieved a holistic evaluation of the educational experience that is supported through benchmarking. (Has the program been reviewed by external stakeholders, such as practitioners in the field, or compared with other similar institutions, or national standards?)**

#### **I. GUIDELINES FOR ORGANIZING THE EXTERNAL REVIEW**

**The external review typically occurs after a program or department completes its self-study report, but the selection and invitation of external reviewers can occur during the self-study process to ensure the availability of the best reviewers. However, programs with concurrent accreditation (e.g., AACSB, APA, ABA) can use the visiting team for that discipline-specific accreditation as the external review. The report from the site visitors should be included in the final report. For an illustration of potential areas for the reviewers to consider, see Attachment below.**

## **II. CHOOSING REVIEWERS**

The size and composition of the review team can vary, depending on the size of the program under review. Usually, the team involves one or two people. At the time a department or program is notified that it will be conducting a program review, appropriate individuals should submit a list of names of possible reviewers. These reviewers should be external to the school/University. External reviewers should be distinguished scholars/teachers/practitioners in the field and be familiar with campuses that are similar to Pepperdine University and the program undergoing review. It is also helpful for external reviewers to have had experience with program administration and with program assessment. At least one of the reviewers should be experienced with student learning outcomes assessment in order to review and analyze the program's assessment processes and results.

## **III. MATERIALS FOR THE EXTERNAL REVIEW TEAM**

At least 30 days prior to the scheduled department visit, the information from the program self-study and appropriate additional materials are sent to each member of the external review team. An identical information package should be provided to appropriate members of the administrators overseeing the program. The reviewers should compile a report that includes observations, strengths, weaknesses, and recommendations based on evidence. The attached External Review Report expectations outlines the guidelines for the external reviewers' site visit and report. Reviewers and Divisional Deans should also sign a consultant agreement. External Reviewers should also be given a schedule for their visit and a confirmation letter, and programs will submit a budget proposal for the site visit to the Office of Institutional Effectiveness.

## **IV. CATEGORIES FOR EVALUATION**

- curricular offerings in terms of relevance, currency, and quality.
- the appropriateness and effectiveness of assessment methodologies and Program Learning Outcomes
- whether changes in response to assessment data reflect the best practices of the discipline
- the quality of instruction and faculty members' scholarly activity/accomplishments
- the program's ability to recruit and retain successful students
- the program's strengths and growth areas, based on evidence-based analysis and comparisons to peer/aspirational programs

## **V. EXTERNAL REVIEW TEAM VISIT AND REPORT**

The review team visit typically lasts for two days, during which time the review committee members meet with department faculty, academic advisors, students, and select administrators. The review team typically takes part in an exit interview just prior to concluding its departmental visit.

The team is expected to submit its written evaluation to the campus program review committee as soon as possible after the visit. The written evaluation should include a review of strengths and challenges, resource allocation, and program viability as well as suggestions for policy and resources. Upon submission of the report, off-campus reviewers receive a previously agreed upon stipend and travel expense reimbursement (to be determined by the department under review).

As soon as the program receives the report from the external review team, it is distributed to the appropriate individuals. The department is typically asked to review the report (within a brief time period) for factual inaccuracies and misperceptions. To maximize the

effectiveness of program review, the findings and resulting decisions should be shared with all of the stakeholder groups. Such sharing of findings generates buy-in to the program's and/or institution's goals. To facilitate and track the implementation of improvement plans, each year the relevant faculty members should review the progress of programs reviewed in previous years. If the department/program was not successful in implementing all aspects of the plan, they may follow up with their appropriate administrative unit regarding resource allocation or other barriers involved in preventing successful implementation.

#### **External Reviewer Report**

*Please attach the External Reviewer Report.*

External\_Report\_Summary\_PU\_SP2016docx.pdf

## **FORMS**

### **1. UAC REPORT**

Programs should submit to UAC:

- a. The major strengths and weaknesses identified in the Program Review's Quality Improvement Plan (QIP). Please identify and cite the evidence that supports your answer.
- b. A list of the program goals established for the next five years (please list in order of priority, the most important goal first). Please cite the evidence that supports your answer.

Other documentation available to the UAC:

1. Program Reviews: found on the OIE web site
2. QIP: Upon Request
3. External Reviewer's Report: Upon Request
4. MOU: Upon Request

The major strengths and weaknesses identified in the Program Review's Quality Improvement Plan (QIP).

A list of the program goals established for the next five years (please list in order of priority, the most important goal first). Please cite the evidence that supports your answer.

### **2. Educational Effectiveness Report**

#### **Educational Effectiveness Report**

*Please download and complete the form.*

#### **Educational Effectiveness Report**

*Please attach the completed form.*

### **3. University Credit Hours**

#### **PEPPERDINE UNIVERSITY'S CREDIT HOUR POLICY**

For all Pepperdine programs, including but not limited to the undergraduate, master's, juris doctor, and doctoral

levels, for each credit hour (unit) granted, students must have successfully met the academic requirements with an amount of work represented in intended learning outcomes and verified by evidence of student achievement that reasonably approximates not less than:

1. One hour of classroom or direct faculty instruction and a minimum of two hours of out of class student work each week for approximately fifteen weeks for one semester or trimester or the equivalent amount of work over a different amount of time; or
2. At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours..

The above policy is applicable to all courses offered, regardless of the mode of delivery and/or session length (e.g. full term-length, weekend mode, abbreviated term, face-to-face, hybrid, online, etc.).

Approved by the University Academic Council  
May 2012

#### **PROCEDURE FOR CHECKING CREDIT HOURS**

Credit hours will be examined for compliance by Department, by School, and by the Registrar prior to the start of each term.

Official credit hour approval occurs via UAC during new program proposals, changes to programs, changes to courses, and during program review (via UAC and ASLC).

Exceptions such as Independent Studies and Internships are checked on an ongoing basis by faculty, Division Chair and/or Associate Dean, and Registrar.

#### **University Credit Hour Policy Example Table**

*Please download and complete the form.*

#### **University Credit Hour Policy Example Table.**

*Please attach the completed form.*

Natural\_Science\_Audit\_final.xlsx

## **QUALITY IMPROVEMENT PLAN**

### **QUALITY IMPROVEMENT PLAN: QIP**

For the Quality Improvement Plan, the program should extract from the "preliminary quality improvement goals and action plan" of the self-study (section A.III) as well as from both the external and internal review recommendations.

The following prompts may be helpful in considering your QIP:

1. Are the curriculum, practices, processes, and resources properly aligned with the goals of the program?

2. Are department/program outcomes aligned with the institutional learning outcomes (ILOs)?
3. Is the level of program quality aligned with the school/University's acceptable level of program quality?
4. Aligned with the constituents' acceptable level of quality?
5. Are program goals being achieved?
6. Are student learning outcomes being achieved at the established standard of achievement? What are you using for comparison/benchmarking?
7. How have the results of program review been used to inform decision-making and improve instruction and student learning outcomes?
8. What was identified in the process of examining the institution's program review process that may require deeper reflection, changes, and/or restructuring? What will be done as a result? What resources will be required?
9. What have the reviewers learned as they carried out assessments of student learning? How have assessment protocols, faculty development, choices of instruments, or other aspects of assessment changed as a result?

Many of the changes that occur following program review are related to curricular adjustments that are, in essence, resource neutral. Program faculty or staff should make note of the ways that they used data to make decisions. Changes that are outside the control of the program or need additional support should be noted and reviewed by the dean in the final section, the Memorandum of Understanding (MOU).

#### **Quality Improvement Plan**

*Please attach the Quality Improvement Plan*

2016\_6\_10\_Quality\_Improvement\_Plan\_SPME.docx