

May 19, 2014

Steven Theg, Chair
Faculty Executive Committee
College of Biological Sciences

RE: Proposal to Discontinue the Exercise Biology Major

The Undergraduate Council reviewed and discussed the proposal to disestablish the Exercise Biology Major during its May 15, 2014 meeting. Upon review and discussion, the Council voted to approve the proposal.

In addition, the enclosed proposal demonstrates that the discontinuance of the Exercise Biology Major falls within Davis Division of the Academic Senate authority as it does not meet the criteria for a unique undergraduate major described in the UC Compendium.

By copy of this message to Vice Provost/Dean de la Pena, I am confirming the Davis Division has completed its review. The proposal is now ready for review by the Council of Deans and Vice Chancellors.

Respectfully,



Matt Traxler, Chair
Davis Division Academic Senate Undergraduate Council

Enclosure: Proposal to Discontinue the Exercise Biology Major

cc: Bruno Nachtergaele, Chair, Davis Division Academic Senate
Gina Anderson, Executive Director, Davis Division Academic Senate
James Hildreth, Dean, College of Biological Sciences
Carolyn de le Pena, Vice Provost, Undergraduate Studies

Wednesday, March 26, 2014 Keen

Request to discontinue the EXB Major in the College of Biological Sciences.

CBS requests the discontinuation of the Exercise Biology (EXB) major. This request is organized around the guidelines for the discontinuation of a major from the UC Compendium and the steps set out in the UC Davis Policies and Procedures Manual, Chapter 200, Section 25.

Consideration of the need for systemwide approval:

In accordance with the UC Compendium: http://www.ucop.edu/academic-planning-programs-coordination/_files/documents/compendium_jan2011.pdf certain actions require systemwide review and approval:

“The four actions involving undergraduate degree programs that do require systemwide review and approval are: 1. the creation of an undergraduate degree title unique to the campus (e.g., the first-ever B.F.A. program on the campus); 2. the establishment of hybrid undergraduate/graduate degree programs; 3. the discontinuance of an undergraduate degree title that is the last one of its kind in the UC system; 4. the discontinuance of a program that is the last one of its kind in a specified academic discipline across the UC system.”

Concern has been expressed that the current request meets the conditions for item # 4 above, that is, the UCD EXB program is “the last one of its kind... across the UC system.” However a BS in Exercise Sciences and the new Exercise Medicine and Sports Science Initiative at UC Irvine (<http://emssi.uci.edu/education/b-s-exercise-science/>) obviates this concern.

Exercise Medicine and Sport Sciences Initiative at the University of California Irvine

For more than a decade, talented and diverse groups of faculty representing six Schools (Biological Sciences, Medicine, Engineering, Social Sciences, Social Ecology and Claire Trevor School of the Arts) at UC Irvine have centered their research on physical activity. From discoveries of fundamental biological/physiological processes to development of innovative approaches in rehabilitation medicine, these faculty, their postdoctoral fellows, graduate students and undergraduates, have formed core groups broadly interested in the fields associated with exercise, sport sciences and rehabilitation. The EMSSI integrates these groups by organizing various units and groups on campus into cores. These include Behavioral Sciences, Clinical Applications, Genomics and Basic Sciences, Translational Medicine/Technology Development, and Education. The education core involves an undergraduate and graduate program as well as formal postdoctoral training funded by a NIH-T32 grant. Finally, the EMSSI will interact with Intercollegiate Athletics (ICA), providing educational and research opportunities for our student athletes.

An outline of this program is included in Appendix 1. It was developed by Professor Jim Hicks, the Associate VC for Research, and was approved by the UCI Provost in December 2013. It meets the same educational objectives as Exercise Biology at UC Davis.

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A second program with some elements of Exercise Biology is a certificate program at UC Santa Barbara. A description of the Exercise and Sports Study Certificate Program at UC Santa Barbara is provided in Appendix 2, but this program does not grant degrees, unlike the UC Irvine program.

Discontinuation Steps set out in the UC Davis Policies and Procedures Manual, Chapter 200, Section 25.

[UC Davis Policies and Procedures Manual, Chapter 200, Section 25. Steps required for discontinuation of program or degree title:](#)

1. [Justification of the proposed action including analysis of costs and benefits to the campus and expected budgetary impact; a statement about the expected impact to enrollment, changes in staffing and space requirements.](#)

Justification of the proposed action:

The proposed action is discontinuation of the Exercise Biology (EXB) major in the College of Biological Sciences. This major is offered by the Neurobiology, Physiology, and Behavior (NPB) department. Discontinuation is necessary because the college cannot offer all the required and elective courses associated with the major due to a lack of resources. The faculty teaching in the major and an external review committee requested state of the art facilities and cutting edge research faculty in exercise biology/kinesiology. Updating the existing space (in Hickey Gym, circa 1938) and offering the required and elective lab courses is financially prohibitive. The existing NPB faculty who teach the EXB major were not able to deliver all the necessary courses for the major, instead they relied on instruction by two non-tenured lecturers (a college salary expense). One of these non-tenured lecturers also served as the master advisor for the major. The NPB faculty currently teaching in EXB requested closure of the major in a September 2013 letter to CBS' Dean Hildreth (Appendix 3).

The NPB faculty have offered two majors (NPB and EXB) for many years. In response to the resource shortage, the department is closing the EXB major and revising the NPB major to encompass different career pathways and to offer as many of the EXB courses as practicable. The NPB major will increase in size, housing its current 900 students, plus up to 600 more students, accounting for those now in EXB. The goal is to create a revised major that will appeal to students and still be financially sustainable.

Costs and benefits of discontinuation:

(1) The cost is the loss of a popular major that attracted students to Davis.

(2) There are two benefits: (i) reducing the number of majors offered by NPB from two to one and streamlining the remaining NPB major will allow the department to focus resources on a smaller number of courses that

can be offered to all students who need them; (ii) intangible benefits are expected from the cessation of discussion of the EXB major because this discussion has preoccupied all faculty in the NPB department for many years.

Expected budgetary and enrollment impacts:

(1) budgetary impacts for the college or the campus will be small because a recent survey showed that 63.5 % of current EXB students would have attended UC Davis in the absence of the EXB program, with 46.7% still applying to CBS. This means we would lose about 50% of our EXB population (about 300 students lost). However, CBS receives significantly more qualified applicants (strong depth of pool) than it can accept, so we can compensate by accepting more students into our other majors with no net change in the numbers of CBS students.

(2) there will be minimal change in the student credit hours currently accruing to CBS because we will maintain enrollments at the existing level (or an increased level). The majority of the current EXB students (72%) are juniors and seniors, so they will continue in CBS. We will expand the incoming classes in other majors as necessary to maintain the same student body. All CBS students take the same core courses for the first two years of study (Appendix 4a) regardless of major, so there will be no changes in enrollment or credit hours at the lower division. Our survey showed that most of the former EXB students who stayed in CBS would elect the NPB major (67.4%) and that most of the non-NPB majors would select the BIS major. This means there will be little change in enrollments offered by the NPB department which it hosted both EXB and NPB majors (see Appendix 5 and discussion of the revised NPB major below on page 5).

Expected impacts on space:

(1) the impacts on space are not clear, but some parts of Hickey Gym may become available to other programs, depending upon the particular courses that are canceled. It appears that some of the EXB courses will be valued within the revised NPB major, so we cannot describe the space to be released. Please see the discussion of the revised NPB major on page 6 .

(2) there will be no change in the space used by faculty.

Expected impacts on staff and lecturers:

(1) there will be no net changes to the advising staff because CBS has a centralized advising structure and advisors currently working with EXB students will work with NPB students as the numbers of EXB students

(2) For EXB students making normal progress, the EXB curriculum will continue, so both lecturers associated with the curriculum (Drs. Salitsky and Shaffrath) will be retained. We commit to retaining Dr. Salitsky for a period of three years while students complete EXB 102.

(3) It is anticipated that, in the absence of continuing EXB students, the psychology portion of the curriculum (EXB 102) will be discontinued and Dr. Salitsky will not be hired. This will require a revision of prerequisites for EXB 104L, a course that may continue within the revised NPB major.

(4) At least some of the physiology courses taught by Dr. Shaffrath are expected to continue within the revised NPB major and Dr. Shaffrath will continue to work for CBS.

(5) Currently EXB Lecturer with Security of Employment (LSOE) Williams is working at UCOP, so his courses must be distributed to other instructors (or canceled) as they have been for the past few years. This issue is not related to the discontinuation of the EXB major.

(6) CBS has budgeted funds for a Lecturer with Security of Employment (LSOE) and an academic coordinator to support the NPB department's offerings of large lecture and lab courses. The additional support staff is intended to eliminate wait lists for the very popular physiology courses offered by the NPB department. This change does not relate directly to discontinuation of the EXB major, but it does relate to the department's ability to offer the revised NPB major.

[2. A phase-out plan that includes an explicit description of the accommodations to students, faculty, staff, and non-academic appointees.](#)

Accommodations to students:

(1) CBS will continue to offer required courses for EXB students making normal progress; presumably this will be a period of four years (see Appendix 4b; for catalog descriptions of the required courses, see p. 39); elective courses will be offered for as long as possible. We will ensure sufficient electives for students to graduate, but substitutions could be made. There will be no changes to existing EXB courses, other than the discontinuation of EXB 113, for 2013-14 or 2014-15. EXB 113 is not required for the major. Professor Hawkins has requested changes to EXB 126 through the ICMS system; CBS is consulting with Engineering on these changes because the course is part of the BME major. We expect that discussion will continue until all parties are satisfied.

The class standing of current EXB students is weighted toward juniors and seniors. The chart below shows that most EXB students (72%) are juniors

and seniors who will require existing courses for two to three years. A relatively small number of students will need EXB classes after 2016.

Fall 2013 Class Standing	# Enrolled in BEXB Major
Freshman	N=28
Sophomore	N=124
Junior	N=164
Senior	N=243
	Total enrollment=559

(2) The admission of new students to the major was suspended in 2013 (for posted notification see Appendix 5) and is now to be suspended in 2015, by which time we expect discontinuation of the major to be approved. Therefore students who applied to the EXB major for Fall 2014 were admitted to the NPB major and advised of the reasons for this change. Some of these students may elect to attend another university instead, but CBS will still maintain the overall expected number of enrollees, as discussed above (page 2).

(3) The revised NPB major will accommodate some of the existing EXB courses. Implementation of the revised NPB major is expected in Fall 2015. Although the revised major was approved by a March 3, 2014 vote of the NPB faculty (see Appendix 6; the November 2103 vote to close the major is also described here), there are many details to be worked out for the implementation of this new major. Plans include a revised core course for NPB majors, but this will not impact the EXB majors. In general outline, the revised major includes three tracks: a Neurobiology track, an Organism-Environment Interactions track, and a Physiology track. EXB courses would be especially valued within the Physiology track, and would be attractive to students in the Organism-Environment track. A customized track for students is also under discussion (see Appendix 7).

The revised major will streamline prerequisites and aims to leverage existing courses to broaden offerings within the major. As part of the revision, the lecture components of NPB 100, NPB 101, and NPB 102 will be replaced with a core class series specific for majors. The series' expected annual enrollment of 700 seats would allow all those currently in NPB, EXB, and the NPB area of emphasis within the Biological Sciences (BIS) major to access the courses in the appropriate year of their studies. Labs associated with the core courses will be open to the three groups of majors just mentioned for pass one, and to other students in pass two. NPB101L will be retained as the physiology lab. NPB100L (the neurobiology lab developed by Mark Goldman using equipment funded by donations) is expected to continue and Professor Tom Hahn is developing NPB102L (a behavior lab).

The department will continue to offer the current lecture

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components of NPB 100 and 101 as a service to the campus, but departmental majors would not enroll in these courses. NPB 102 may continue to be offered once a year. These courses will continue to be available to EXB majors. NPB will hire a lecturer SOE and an academic coordinator to assist with the undergraduate curriculum, but the teaching portfolio has not yet been decided. The increased staff will be charged with eliminating wait lists for core classes. The college and the NPB department are exploring ways to increase the number of offerings of the very popular human anatomy class and the associated lab (EXB 106 and 106L). More college resources are being added to NPB, but a lecturer and an academic coordinator are significantly less costly than the addition of two top-flight researchers (with associated renovation and start-up costs) and all new lab facilities as envisioned if EXB were continued.

Accommodations to faculty, staff, and non-academic appointees:

(1) Faculty teaching loads may change and are decided by the Chair of NPB. Teaching expertise will be matched with course offerings as the revised major develops. The impacts of the discontinuation on lecturers have been outlined on pages 2 and 3, in items 2 to 6.

[3. A complete statement of all steps required for adoption and implementation of the proposal and the timetable of target dates for completion of each step.](#)

January 2014

New admissions to the major are suspended for 2015. A notice is posted on the EXB website.

After consultation with admissions, the EXB master advisor, and EXB faculty, new students eligible for admission in Fall 2014, and applying to EXB, will be admitted to NPB. These students will receive an explanatory letter from the College. Eligible transfer students may still enter EXB. Based on the applicant pool and previous admissions data, about 17 new students are expected.

Advising staff in BASC were notified about suspension of admissions expected to lead to discontinuation of the EXB major.

February 2014

NPB faculty discuss new courses and streamlining existing courses.

Courses required for continuing EXB majors will be offered into the future.

March 2014

NPB faculty vote on the revised NPB major (Appendix 6).

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The Associate Dean for CBS consults with the campus Athletic Director, coaches, and with the director of the Physical Education program (response in Appendix 8).

The Associate Dean for CBS and the NPB department consults with Chair and staff of Biomedical Engineering since some of the EXB courses are taken by biomedical engineering students and one course has been included in their ABET accreditation. This course, EXB 126, is under discussion with Engineering as the instructor, Professor Hawkins, has proposed changes.

Spring 2014

243 EXB seniors are expected to graduate.

Freshmen and sophomores in EXB will be encouraged to discuss the changes with staff advisors and with the faculty master advisor.

The NPB faculty work on an implementation plan for the revised major; the implementation plan will include discussion of the EXB courses serving as part of the revised NPB major.

The NPB Chair and the CBS Dean will write to the EXB students clearly explaining the decision to close EXB and outlining the courses that will be available to the students. Their faculty master advisor will remain in place.

Fall 2014

New freshmen applying to EXB are admitted in NPB. New transfer students join existing NPB seniors and juniors. Expected numbers of students are: 164 seniors, 124 juniors plus 17 transfer students = 141 juniors, 28 sophomores and 0 freshmen. NPB faculty continue with an implementation plan for the revised NPB major throughout the year.

Spring 2015

164 EXB seniors are expected to graduate.

Fall 2015

Expected numbers of students are: 141 seniors, 28 juniors, 0 sophomores, and 0 freshmen. The revised NPB major should be in place.

Spring 2016

141 EXB seniors are expected to graduate.

Fall 2016

There should be less than 30 students in the EXB major, all seniors if they make normal progress. These students may have chosen to change majors or to continue in EXB.

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Spring 2017

The remaining EXB students should graduate.

4. Explanation of the method of consultation that was employed in the review process with students and faculty members from potentially affected programs and with appropriate college or Senate committees.

History of consultation between the NPB department/CBS and potentially affected groups (descriptions of faculty and student comment periods are in bold below).

May 17, 2011. All voting faculty in the NPB department are in favor of a proposal that the major “be declared impacted immediately, closed to new admissions, and discontinued.”

January 2012: Letter from EXB instructors and NPB department leadership to Dean Hildreth: The EXB major is at a cross-roads in which one of three decisions must be made: (1) to continue the major and add resources to quality and future development of the major as the premier major for students interested in allied health, (2) to close the major due to lack of resources, or (3) to transition the major into a Physiology and Health Sciences major which would also require additional resources.

May 2012: Request from EXB instructors to CBS EC to suspend admission to EXB, and to close the EXB major over an approximately six year period, to allow majors to graduate.

May 14, 2012. CBS Executive Committee Ted Powers writes to Academic Senate Chair Bisson proposing the suspension of admissions to EXB for Fall 2013.

June 22, 2012. The Undergraduate Council (Chair Rossini) denies a request for a two-year suspension of admissions to EXB and requests a program review and external reviewers. Admissions are suspended for one year (2013-14).

February 2013. 50:50 NPB faculty vote in support of a second year of suspension of admissions/transfers.

February 8, 2013. CBS Executive Committee Chair Gasser requests a suspension of admissions to EXB for 2014-15.

February 22, 2013. Undergraduate Council (Chair Traxler) denies the request for suspension of admissions for 2014-15.

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April 13, 2013. CBS sends a completed program review to the Undergraduate Council. **This review includes faculty, staff, and student comments on the major.** Comments by the CBS Executive Committee reflect the disproportionate use of teaching resources in the EXB major. Students appreciate the quality of the EXB major. The Undergraduate Council has the full text of this report and all associated letters and comment.

May 16, 2013. External Reviewers report on EXB submitted. **The external reviewers interview students, staff, and faculty about the major.** Students expressed significant satisfaction with the program, but the issues with resources and course staffing in the major, long apparent to NPB faculty, were also apparent to the external reviewers. The Undergraduate Council has the full text of this report and all associated letters and comment.

May 2013. **NPB faculty consult on the major** and increase the selectivity of admission to the EXB major with the intent of reducing the number of students to match the courses that can be offered. Vote by NPB faculty (25:1) to impact EXB major for AY 2014-2015 (too late to suspend admissions).

May 2013. Vote by CBS EC to support increased selectivity/impaction of EXB major for AY 2014-2015. New criteria are posted on the EXB website, followed by clarifications (see Appendix 5 for the final version).

August 2013. CBS funding does not permit support of recommendations in the external review.

September 11, 2013. **EXB instructors request closure of the major** by CBS Dean Hildreth (this letter is Appendix 3).

October 25, 2013. CBS submits to the Undergraduate Council a response to the External Reviewers' report on EXB; this report contains a new request for suspension leading to discontinuation of the EXB major.

November 7, 2013. The Undergraduate Council requests clarification of the October 25th CBS request for suspension of admissions leading to closure of the EXB major.

November 22, 2013. New vote by NPB faculty on closure of the major. Unanimous NPB faculty vote that "The EXB major should be suspended, declared closed to all new admissions/transfers and discontinued due to a lack of resources needed to maintain the quality of the major and poor fit within CBS." **Faculty comments are appended to this vote (see Appendix 6).**

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December 6, 2013. CBS **surveys current EXB students** asking what they would have done if there were no EXB major on campus. The survey is run by Gillian Butler (SARI/BIA). Results have been discussed on page 2.

December 12, 2013. CBS responds to the Undergraduate Council's November 7th request for clarification of the earlier request for a suspension of admissions leading to discontinuation for EXB and makes the request again.

January 2014 Undergraduate Council approves suspension of admission to EXB commencing in 2015.

March 2014 Vote by NPB faculty on the revised NPB major outline. **Faculty comments are appended to this vote (see Appendix 6).**

March 2014 CBS requests and receives the response of athletics to the discontinuation (see Appendix 8). The EXB major was a valuable option for athletics.

[5. Description of the relationship of the proposal to the campus and unit's academic plan.](#)

The proposal fits with the academic plan of the campus and the College in that each college must be self-supporting on the basis of revenue generated by teaching (activity-driven budgeting). The NPB department has voluntarily revised the NPB major, broadening it to encompass as much of the EXB program as possible, streamlining and modernizing the requirements for majors, and retaining the two main service courses for the campus.

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**Appendix 1. Exercise Medicine and Sports Science Initiative document
from UC Irvine**

UCIRVINE | Exercise Medicine and Sport Sciences Initiative

Enhancing Human Health and Wellness Through Education and Multidisciplinary Studies of Activity, Exercise, Sport and Rehabilitation Medicine



Enhancing human health and wellness through education and multidisciplinary studies in exercise, sports and rehabilitation medicine

Overview

Virtually every organism is dependent on movement in one form or another. With respect to humans, physical activity imposes unique stresses on a broad spectrum of cell types, tissues, and organ systems. In so doing, physical activity plays a key role in shaping fundamental biological processes and is necessary for maintaining health and preventing disease. Consequently, there is an accelerating realization that greater emphasis needs to be placed on physical activity as an adjuvant in standard medical practice.

The idea that “exercise is good for health” seems axiomatic, however a fundamental, mechanistic understanding of how exercise works in specific diseases and conditions is still lacking. Motivating individuals to engage in regular exercise, remains a challenge that requires systematic research and identification of evidence-based strategies for successful behavior change. In addition, how to effectively engage individuals in the benefits associated with activity, many of whom may suffer from physical constraints, for example stroke, traumatic brain injury, loss of limbs, or chronic pain will require technological innovations. Without knowledge at this level, rational and appropriate uses of exercise as adjuvant therapy will remain imprecise, and the effectiveness of physical activity as a means to benefit human health and wellness may be lost.

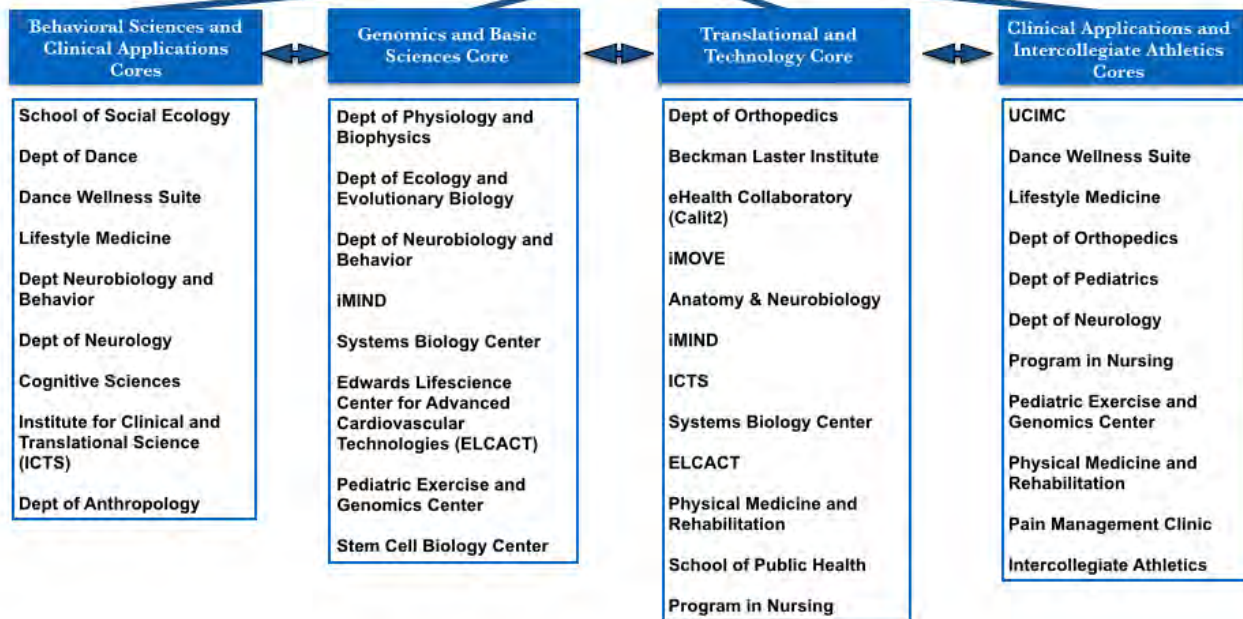
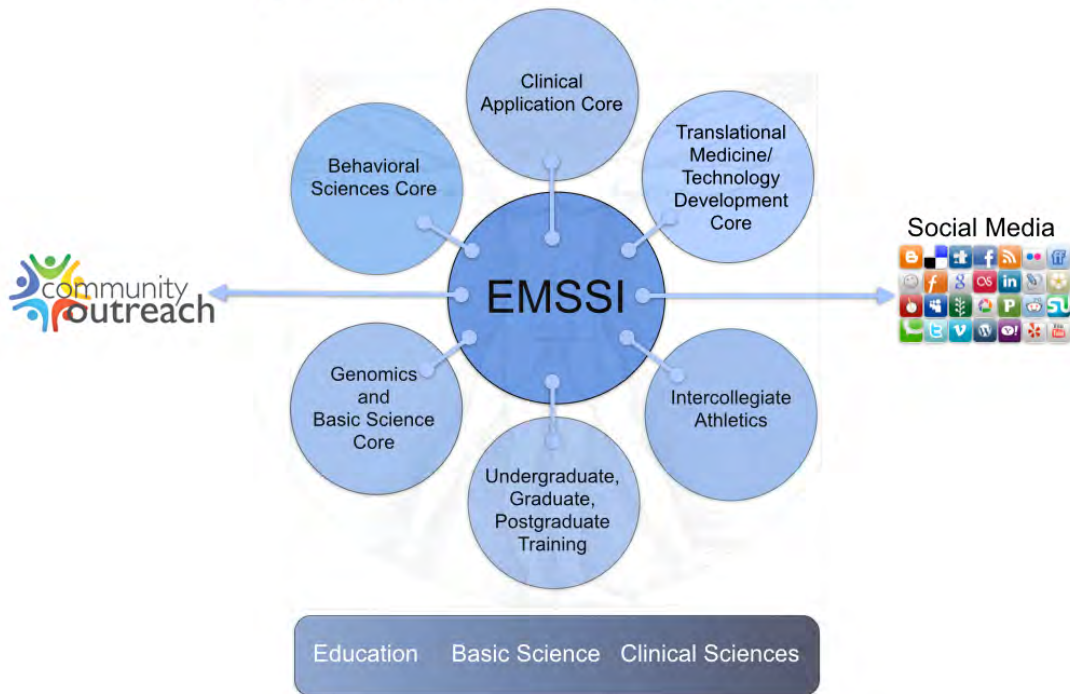
Mission of the Exercise Medicine and Sport Sciences Initiative (EMSSI)

The mission of the Exercise Medicine and Sport Sciences Initiative is to promote and expand scholarly activities and innovative discoveries in all fields associated with exercise and sport sciences, exercise medicine and rehabilitation at UC Irvine. The mission of the Initiative will enhance human health and wellness through undergraduate and graduate teaching, basic and translational research, development of innovative technologies, service to the community, and clinical activities.

Exercise Medicine and Sport Sciences Initiative at the University of California Irvine

For more than a decade, talented and diverse groups of faculty representing six Schools (Biological Sciences, Medicine, Engineering, Social Sciences, Social Ecology and Claire Trevor School of the Arts) at UC Irvine have centered their research on physical activity. From discoveries of fundamental biological/physiological processes to development of innovative approaches in rehabilitation medicine, these faculty, their postdoctoral fellows, graduate students and undergraduates, have formed core groups broadly interested in the fields associated with exercise, sport sciences and rehabilitation. The EMSSI integrates these groups by organizing various units and groups on campus into cores (see next page). These include Behavioral Sciences, Clinical Applications, Genomics and Basic Sciences, Translational Medicine/Technology Development, and Education. The education core involves an undergraduate and graduate program as well as formal postdoctoral training funded by a NIH-T32 grant. Finally, the EMSSI will interact with Intercollegiate Athletics (ICA), providing educational and research opportunities for our student athletes. It is worth noting that the 2010 Knight Commission Report entitled “Restoring the Balance” states that collegiate athletic programs should be: “Rewarding practices that make academic values a priority and treating college athletes as students first and foremost—not as professionals.” The EMSSI will provide unique integration and interactions consistent with the Knight Commission Report and will be an outstanding example of how academic/research programs can be fully integrated with Division I athletics.

For more information regarding the Exercise Medicine and Sport Sciences Initiative at UC Irvine, contact Dr. James W. Hicks, jhicks@uci.edu



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Appendix 2. Description of the Exercise and Sports Study Certificate Program at UC Santa Barbara.

Exercise and Sports Studies

**Division of Social Sciences
Recreation Center 2102**

The Department of Exercise & Sport Studies offers a program of basic instruction consisting of 1/2 unit courses as well as courses in athletic coaching, fitness instruction, exercise and health science, and sport management.

The ESS certificate programs consist of University of California level coursework that offer students theoretical and practical knowledge. Courses provide students with a strong foundation enabling them to pursue advanced degrees and career opportunities in the fields of personal training, health & wellness, and sport management.

The department offers concentrated studies in exercise, health & wellness, and sport management. Successful completion of the required course work leads to a department certification. The curriculum within each area prepares students for graduate study and career opportunities in related fields.

In addition to the Sport Management Certificate Program, the Exercise, Health & Wellness Certificate Program offers 3 areas of emphasis: Personal Training Certificate Track Health & Wellness Certificate Track Group Fitness Instruction Certificate Track

The certificate, similar to a minor, provides academic preparation for further study at the graduate level and/or opportunity for entry into the workplace. Unlike a minor, the certificate is not recognized on the student's diploma but, rather, results in the student receiving a certificate from the ESS Department upon completion of the program.

<http://essr.sa.ucsb.edu/default.aspx>

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Appendix 3. Letter from faculty teaching in EXB requesting closure of the major.

DAVIS:

COLLEGE OF BIOLOGICAL SCIENCES DEPARTMENT OF NEUROBIOLOGY, PHYSIOLOGY AND BEHAVIOR TEL: (530) 752-2748 FAX: (530) 752-5582

To: James Hildreth,
Dean, College of Biological Sciences University of California, Davis
September 11, 2013
RE: Closure of EXB major

Dear Dean Hildreth:

We would like to thank you for meeting with us on August 22nd to clarify your email response (August 19, 2013) regarding the status of the EXB Program Review. After much deliberation and discussion among the EXB program instructors, as well as consultation with others within and outside of UC Davis, regarding the recommendation to explore creating a CBS-based EXB major, which we understand to be the only option available for the EXB major other than closure, it is with great disappointment and sadness that we request immediate action be taken to continue the process of closing the EXB major. We believe the EXB major received a fair and comprehensive external review and the recommendations provided by the external reviewers and undergraduate council were reasonable and appropriate to ensure long term stability for the major. We believe the fraction of the recommendations provided in the Program Review Report that you indicated you would support (namely creating a CBS-based major) ignore essential recommendations (namely a commitment to hire Senior and junior faculty devoted to EXB and to upgrade EXB teaching and research laboratories and equipment) and are insufficient to maintain a viable EXB major. When EXB was transferred into the Division of Biological Sciences in 2000, Dean McNamee stated, "For DBS, it expands our opportunity to develop additional strength in human physiology and integrative biology. Incorporating the major into our suite of offerings provides a dimension to our programs which will attract additional bright and motivated students." His views were correct and many bright and motivated students have been served by the EXB major. Unfortunately, there appears to have been a shift away from Dean McNamee's views over the years. The fact that you stated the EXB major is not, "fully compatible with the college mission: Instruction and research grounded in biology," indicates that it is unlikely the EXB major will be appreciated and supported under any administrative structure within CBS. Therefore, per the previous NPB faculty vote (May 17, 2011) in favor of closing the EXB major if sufficient resources were not provided to adequately support the major, we believe the major needs to be closed. We request your assistance to ensure the closure process is done appropriately, transparently, expediently and protects the academic interests of the current EXB students. In addition to following the Chapter 200, (Campus Organization and Management), Section 25 (Establishment or Revision of Academic Degree Programs) guidelines in the UC Davis PPM, we believe immediate actions should include:

1. Request the Admission office suspend any further admissions to the EXB major, including fall 2014.
2. Develop a "Discontinuation Plan" to disseminate to advisors, the Admissions Office and the Registrar's Office.

We believe this is required to close any program.

3. Notify the various people and groups affected by EXB closure or involved in implementing this action (e.g. BASC staff, the Admissions office, Undergraduate Council, the Academic Senate, the students, the Athletic Director and coaches who use EXB as a recruiting tool, the director of the Physical Education program, the Chair and staff of Biomedical Engineering since some of the EXB courses are taken by biomedical engineering students and one course has been included in their ABET accreditation).

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4. Send a letter from the NPB Chair and CBS Dean to the EXB students clearly explaining the decision to close EXB and the commitment that will be made to them to ensure they are given the major program-of-study they were promised.

As the EXB major is phased out, the EXB faculty will continue to offer the EXB courses needed to accommodate the educational needs of current EXB students while contributing however they can to develop a revamped NPB major as proposed to you by the NPB leaders. They will also contribute however possible to assist you in establishing a human biology program within CBS.

Respectfully, EXB instructors within the Department of NPB – Drs. Baar, Bodine, Gomes, Hawkins, Salitsky, Shaffrath, Williams

Appendix 4a. Core Curriculum for all majors within CBS

Preparatory Subject Matter	55-73
Biological Sciences 2A-2B-2C	14
Chemistry 2A-2B-2C	15
Chemistry 8A-8B or 118A-118B-118C	6-12
Mathematics* 17A-17B-17C or 21A-21B (21C recommended)	8-12
Physics 7A-7B-7C or 9A-9B-9C-9D	12-20

*Mathematics 16A-16B-16C accepted to fulfill this requirement only for transfer students admitted prior to fall 2013.

Mathematics 21A-21B-21C-21D, 22A-22B, Physics 9A-9B-9C-9D and Engineering 6, 35 are recommended for students interested in graduate study in Biomechanics.

Depth Subject Matter	50-55
Biological Sciences 101, 104, 105, (102 + 103 may be substituted for 105)	10-13

Appendix 4b. EXB depth subject matter

Depth Subject Matter

Biological Sciences 101, 104, 105, (102 + 103 may be substituted for 105)

Neurobiology, Physiology, and Behavior 101

[Exercise Biology 106 and 106L](#)

[Exercise Biology 101, 102, 103, 104L](#)

Statistics 100 or 102

Completion of 3 courses (9-11 units) selected from the following: (see advisor for help in selecting appropriate course sequences)

1 course from Group A

[1 additional course from Group A or Group B](#)

[1 additional course from Groups A, B or C](#)

[Group A: Exercise Biology 111, 112, 115, or 126 \(laboratory courses\)](#)

[Group B: Exercise Biology 110, 113, 117, 124, 125, 179](#)

[Group C: Exercise Biology 122; Applied Science Engineering 115; Engineering 102; Neurobiology, Physiology, and Behavior 112, 113, 140; Nutrition 111AV](#)

No variable unit courses or Passed/Not Passed graded courses may be used to fulfill these requirements. Consult your adviser regularly

Appendix 5. Admissions criteria for 2014/15 for Exercise Biology Major

For 2014-2015 the EXB major will go from being closed to being an impacted major. This will be achieved by applying the following restrictions to declare and enter the EXB major.

- Freshman: No more than 30 freshmen per year will be accepted in to the EXB Major, based on the admissions rankings of the applicants to the major.
- To transfer into the major from within the University ('internal transfers') the following would be required:
 - Completion of BIS 2A, 2B and 2C + CHEM 2A and 2B with a GPA of 2.5 or better in those courses. AND a grade of B- or better in NPB 101.
 - All of these courses (BIS 2A, 2B, 2C, Chem 2A, 2B, NPB 101) must be taken for a grade and NOT P/NP and not S/U.
- To transfer into the major from a junior/community college (JC/CC): A GPA of 3.2 or better is required for BIS 2A, 2B and 2C + CHEM 2A and 2B equivalents for guaranteed transfer admission to the program.

Transfers from a JC/CC who were admitted into a non-EXB UC Davis major, and who took the equivalent of BIS 2A, 2B and 2C + CHEM 2A and 2B at JC/CC: these courses must have been completed on a letter-grade basis, with a 2.9 GPA or better in those courses. Also, NPB 101 must be completed with a grade of B- or better.

Appendix 6. Two NPB faculty votes and comments

1. March 3, 2014 Vote on the General Structure of Proposed NPB Major Revision

A "Yes" vote means:

I support the general structure of the revised NPB major as proposed by the Vision Committee (core course outlines and track structures), and therefore support the continued refinement of the major for final approval by the College. Any suggestions for changes are included below.

A "No" vote means:

I do not support a revised NPB major for the reasons given below.

Total: 30

Yes: 21

No: 3

Leave: 2

Did not vote: 4

YES VOTES:

COMMENT: I enthusiastically support the proposed structure and think we can create an excellent revised major based on this.

COMMENT: These changes are needed both to improve our students' experiences and to update the curriculum to more closely match our faculty expertise. I heartily support this, and understand that there is still flexibility to continue to refine the proposal both now and, I hope, continually over the years as our student and faculty needs change.

COMMENT: I feel compelled to vote yes in support of the tremendous effort Dave and his committee have put into developing a new curriculum for the NPB major. However, I have a number of serious concerns about the proposed changes that put me on the fence as to voting yes or no. First, while I think the foundations (cells to systems) course sounds nice, it appears to present some material that students should be getting in the BIS core. For example, sections 4 and 6 should be covered in basic biochemistry and cell biology courses. I guess that if these BIS courses are not providing the material that our faculty need for NPB courses, we could lobby to change the BIS core. Having the foundations course seems, to some extent, like an alternative to compensate for an inadequate BIS core. Moreover, section 3 of the foundations course contains elements that can be integrated with the neuro (NPB 110B) and physiology (NBP 110C) courses, and section 5 also includes elements that in my opinion should be covered in the neuro course. It was stated that some material (e.g., section

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5.a.) will be “briefly repeated” in the neuro course which seems redundant. Section 7 sounds quite behavioral, and raises the question of Behavior as an integral part of NPB. Will NPB 102 animal behavior become an elective? Will section 7 of the foundations course provide sufficient coverage of behavior, if this is the only behavior that NPB students are exposed to in the required courses? The proposed neuro course NPB 110B is similar to the current NPB 100 introductory neurobiology course, although NPB 110B includes autonomic nervous system that is glossed over in NPB 100. I understand that the proposed NPB 110A will cover aspects of cellular neurophysiology that have been omitted from NPB 110B, requiring students to take 2 courses instead of getting it all in the current NPB 100. I am not convinced that this is a big advantage. NPB 110C appears to cover many of the topics currently covered in NPB 101, except that the nervous system is now excluded since it is covered in the preceding courses. So, this course presents much material already presented in NPB 101 and is thus somewhat redundant. Philosophically, the proposed core NPB series affords less flexibility for student planning, since the courses must be taken successively. This is similar to core curricula in graduate programs such as neuroscience and MCIP. Thus, NPB 110B and 110C cannot be taken by students who have not had NPB 110A. For me, this is a major disadvantage and disallows students outside the NPB major from taking a course that should be accessible with general knowledge in biology (i.e., BIS core). The sequential nature also disallows students from beginning the NPB core if they matriculate after fall quarter, unless we provide staggered offerings (e.g., NPB 110A both fall and winter quarters, and NPB 110B winter and spring, etc.). Finally, the proposed structure means a significant increase in numbers of courses offered by NPB faculty. I assume NPB 101 will continue in perpetuity, and NPB 102 will become an elective (?). Will NPB 100 continue to be offered as a general introductory neuro course or phased out? These are all issues that I believe should be considered in deciding whether to continue with the redesign of our NPB major and, if yes, in designing the new core curriculum.

COMMENT: I support the proposed revision of the NPB major, but I recommend a careful analysis whether it would indeed be feasible to keep offering both the NPB 110A-C series for NPB majors as well as NPB 100 and 101 as service courses for non-majors in the long run.

COMMENT: Let's get this show on the road already.

COMMENT: I voted yes, but I think we need to merge BIS 104 and NPB 110A. There are too many requirements for our major and having to wait until the entire BIS series is completed to get to cell biology and physiology is too long.

COMMENT: This is clearly the right path forward for our department. The committee has provided a template for a major that is superior to our existing majors.

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COMMENT: I am voting yes only for the purpose of moving the discussion to move to the next step, which is an overall discussion on implementation. While the major revision concepts seem basically fine at face value (I appreciate the amount of work the committee has put into this effort), I am quite worried about the difficulty and practicality of implementation (as identified at the faculty presentation - #4 of Key Principles). This includes TA needs, current and future faculty strengths (and weaknesses), currently and future teaching load requirements, and a variety of other issues. I am also concerned with item #2 of Key Principles. Matching faculty strengths & interests is a moving target. Which interests? Teaching load? Course content? Our faculty is an amalgam of N and P and B with widely diverse interests, goals and skill sets. Our goal in teaching an undergraduate major must be offering the students an integrated body of knowledge which forms that major. While this proposal does this, it does so with a wide range of options, which we ultimately may not be able to offer (see first paragraph). Especially if we also need to maintain any service courses such as NPB 101.

COMMENT: I don't think there is any option other than revising the NPB major, but there seems to be so many important issues currently in flux that will influence decisions about a revised NPB major that it does not seem reasonable to vote about any specifics or even the general structure of the proposed NPB revisions.

I vote "Yes" to revise the NPB major, but I do not feel like I know enough to vote "Yes" in support of the general structure of the revised NPB major.

Reasons to support revising the NPB Major:

1. As part of the discussions to close the EXB major, the NPB Department has told the CBS administration and others that a revised NPB major was being developed that would accommodate many of the students interested in the EXB major. Were those statements made just to appease Undergraduate Council?
2. It looks like the NPB major is following a similar enrollment and support trajectory (though with more faculty) to that of the EXB major. I don't see how the major, with the growing enrollments and presumably attracting other students who would have come to UCD for EXB, can continue as is. We should have learned something from the EXB major demise.
3. There are several issues that need to be addressed relative to the lower division courses and how our students are prepared for upper division courses.

Reasons preventing clear support for the "general structure of the revised NPB major:"

1. We don't know the CBS teaching model so how can we determine if a revised major as proposed is feasible?
2. It is not clear to me if the revised major as proposed can be delivered with the resources we have.

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3. I think we need to understand the budget model and teaching model before we can make decisions about what classes and class sizes we can offer. I have not seen information about such analyses.
4. Are sufficient resources available to support the phasing in of a revised NPB major, while phasing out the existing NPB major and closing the EXB major?

NO VOTES:

COMMENT: I don't think the revised curriculum represents an obvious improvement over what we have already.

COMMENT: I do not believe that the revised major is a significant improvement from the current NPB major. It is not clear that funds are available to support all of the additional TAs that will be needed to teach the revised major. Further, it is not clear that there are enough qualified TAs to teach all of the additional sections.

COMMENT: I do not support the NPB major revision since it creates a number of new classes without accounting for who will teach all of these classes. I fear that we may be setting NPB up for the same fate as the exercise science major. Lots of majors and lots of classes without enough faculty to teach them. Further, the fact that the students still have to take the BioSci and BIS series before they get to the NPB core means that the students have little chance to get to the upper division classes. Also the structure of the tracks provides highly limited upper division electives.

2. November 22, 2013. Vote on Closure of the EXB major.

The EXB major should be suspended, declared closed to all new admissions/transfers and discontinued due to a lack of resources needed to maintain the quality of the major and poor fit within CBS.

Total: 30

Yes: 22

No: 0

Abstain: 1

Leave: 2

Did not Vote: 5

Vote: Yes

Comments: Unfortunately the EXB major must be closed. An undergraduate major cannot survive and thrive without both departmental and college support, and the EXB major has neither. The EXB major has been in need of additional resources for sometime, which have been denied. The major cannot continue in its current state, which has been stressful to both students and faculty, and at

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this juncture closure appears to be the only option.

Vote: Yes

Comments: I feel strongly that even if the EXB major were to continue, it should not be within the NPB department. I think having multiple majors within our department has been and continues to be detrimental to the health and functioning of the department, and therefore leads to degradation of our ability to serve the undergraduates in both of our current majors (among other problems). I think if the EXB major closes and the time, energy and other resources that have been going into attempting to garner additional resources for it (resources that it has been clear for years were not going to be forthcoming) are instead invested in the revision and delivery of the NPB major, many of the elements of the EXB major that have been attractive to students can still be provided, and in fact provided better than if the departmental resources continue to be split between two majors in the current climate. A great deal of discussion has focused on how "lack of resources" has negatively impacted the EXB major and the students and faculty associated in it, but very little has been said about the negative effects that waging a "battle to save EXB" has had on the NPB major and the larger number of faculty and students that are associated with it. I think the decision to wage this battle has been disastrous for everyone involved, and I hope that we are now on the brink of putting this devastating problem behind us and moving forward with actually serving the students rather than continuing to squander our energy in unproductive ways. I will add that in my opinion, even if additional resources (in the form of additional faculty hires) to maintain the EXB major were to magically appear at this moment, this major should no longer be housed within NPB. My past experience with watching the department attempt to juggle the often conflicting demands of these two majors leads me to believe that the negative effects of having multiple majors within the department will not go away just because we have more resources. This is not good for the students, and it is not good for the faculty. I would be in favor of providing a strong human physiology, exercise and disease related track within a revised, single NPB major, but I do not support the idea of more than one major in the department.

Vote: Yes

Comments: Then-Exercise Science coming to then-DBS was a mistake in the first place and doomed to this failure, which is an unjust outcome for all the faculty and students involved. I look forward to Dean Hildreth's and Associate Dean Keen's leadership in finally correcting this short-sighted mistake.

Vote: Yes

Comments: I vote yes not because the EXB major is a "poor fit" within CBS. I believe it is in fact a very good major, and considering its comprehensive emphasis on human biology, a very appropriate course of study in CBS in integrative modern biology (not to mention the fact that over 600 UCD students chose it as their major). I vote YES because it is clear that CBS will not support the major or make good on the promises which were made to EXB faculty when

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the major moved to NPB.

Vote: Yes

Comments: My vote is based on the belief that the need to close this program is not solely due to a lack of support from the administration. With the current budgetary constraints at the state-, university- and college-wide level, the major cannot be delivered at a level that those closest to the major believe is acceptable. Over the past decade majors in our college have had to drastically increase average class size, decrease lab offerings, and decreased offered electives. My perception is that this is a sacrifice that those delivering the major feel would harm it to the point that the major would not be of sufficient quality to warrant offering (or to be competitive with comparable majors at other institutions). This is exacerbated by the loss of another faculty member (Samantha Harris), and this brings the major to the breaking point where without more resources or structural changes in the major, the major cannot be delivered at its current level.

Vote: Yes

Comments: I support this action due to the lack of resources to maintain the quality of the major, but I do not think it is a poor fit within CBS.

Vote: Yes

Comments: Sadly, without the resources, no alternative remains.

Vote: Yes

Comments: I am voting to support closure of the EXB major since the CBS cannot promise sufficient support for the major, and recommends discontinuation of the major.

Vote: Yes

Comments: I am voting to close and discontinue the EXB major since it lacks the support of the college, and therefore is not provided the needed resources to continue to deliver a quality major. I am really sad to vote this way because the EXB students that I interact with are passionate about their major. Many of them came to this University because of this major and as a result I think that we will miss out on many students. Importantly, this major had one of the highest levels of underrepresented minority students in the college. In a sense, EXB used exercise as a way to attract underrepresented students to biology and that will be sorely missed. I feel that the closure of this major represents a major failure of the Provost. The chief academic and operating officer of UC Davis should have done more to help the 650 students in this major. If he had worked together with students, faculty, and administrators, he could have come up with a plan to support one of the most popular majors on campus and one that is a perfect fit with the Chancellor's vision of advancing food and health. I have to say that I have never been more professionally disappointed in someone who is supposed to be a visionary leader.

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Vote: Yes

Comments: I support the action to discontinue the EXB major given the lack of support for the major within CBS and apparently across campus, but this lack of support is truly confusing based on the outcome of the External Review and any comprehensive metrics used to evaluate the major. The major is desired by the students, growing, deemed relevant and important by external reviewers. Other comparable institutions are investing significantly in similar majors. The reasons for discontinuing the major because of lack of resources and a poor fit within CBS seems ridiculous. Two searches for FTE in Physiology are currently on-going and we have been told there may be another 10 FTE released to CBS over the next few years with no specific target or focus area. Why wouldn't some of these FTE be directed to fulfill FTE commitments promised to the EXB program years ago? If it is true that EXB does not fit well within CBS, then why isn't this popular major administered through some other college or tri-college as with the new Marine Sciences major? It makes no sense to me that UC Davis would eliminate such an important and popular major.

Vote: Yes

Comments: Due to lack of resources, I agree that there is no option but to close the EXB major.

Vote: Yes

Comments: Due to loss of faculty without a long term commitment to hire faculty specifically in this area (particularly in the psychological aspects), increasing costs to modernize laboratory space and equipment, qualified TA loss due to closure of the EXS graduate program, and several other issues outlined in the internal and external reviews, the major cannot survive in its current form on a long term basis. Certainly not as a program that can compete with Exercise Science or Kinesiology programs at other universities, that are often in their own department rather than merged with basic biology programs. It either must be moved (once again, as it was from L&S several years ago) to another College such as CAES, or dissolved with certain components of the program such as course work as restricted electives in exercise physiology and biomechanics incorporated into revisions of the NPB major and/or a broader Human Biology major that is initial stages of planning in the College. In this case, coursework in the psychological aspects of the major might be provided for interested students by another College separately (perhaps via a minor in coaching or health/wellness sponsored by L&S). In any case, suspension and closure is the route supported by the faculty teaching in the major at this juncture, and I support that difficult decision.

Vote: Abstain

Comments: Sorry for the abstaining, but even after reading all provided material and talking to colleagues, the issue remains so complex to my mind that I cannot form an opinion.

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Appendix 7. Draft of Revised NPB Major for March 3, 2014 vote

Proposed revision of Neurobiology, Physiology, and Behavior major

DRAFT Progress November 18, 2013

Preparatory subject matter (Lower division course requirements): 56-66 units

Biological Sciences 2A^a-2B-2C 15 units

Chemistry 2A-2B-2C^b 15 units

Chemistry 8A-8B or 118A-118B-118C^b 6-12 units

Mathematics 17A-17B-17C or 21A-21B (21C recommended) 8-12 units

Physics 7A-7B-7C 12 units

^aBIS 2A has now added a unit (2 hour discussion)

^bChem series content is currently under review for Life Sciences majors

Depth subject matter 44- 55 units

A. Statistics: STA 100 **4 units**

B. Genetics and Biochemistry: **8-10 units**

BIS101 and BIS102+BIS103 or BIS105^c (BIS104 Cell Biology recommended)

^cBIS105 is under consideration for increase from 3 to 4 units

C. Major core series (2X year): **14 units**

NPB 110A: Foundations: Cells to Systems (3 units lecture+ 1 unit discussion) 4 units

NPB 110B: Neurobiology and Physiology I (4 units lecture+ 1 unit discussion) 5 units

NPB 110C: Neurobiology and Physiology II (4 units lecture+ 1 unit discussion) 5 units

D. Upper division restricted elective clusters (tracks) with laboratory requirement

I. Neurobiology track **18 – 24 units**

a. Laboratory requirement: 6-7units

NPB100L (3 units)

and, resources allowing, one additional course from the following:

NPB124 Comparative Neuroanatomy (4 units)

NPB 101L (3 units)

NPB 102L Animal Behavior hybrid lab course^d (3 units)

b. Track core courses 6-8 units

Choose two courses from the following list:

1. Molecular and Cellular Neurobiology: NPB 160 (3 units; 100 or 110B; BIS101)

2. Developmental Neurobiology: NPB 161 (3 units; 100 or 110B)(might be an either/or if mostly tilts toward Molecular/Cellular focus)

3. Systems Neuroscience: NPB 163 (3 units; 100 or 110B)

4. Computational Neuroscience: NPB 167 (5 units; course 100 or permission of instructor (110B); Math 16A, B, C or equivalent; Physics 7A, B, C or equivalent strongly recommended)

c. Two additional elective(s) from the list above or from the following: 6-9 units

Recommendations in progress, suggestions welcome.

II. Organism- Environment Interactions track 18-22 units

a. Laboratory requirement: NPB101L* (3 units) 6-7 units

and, resources allowing, one additional course from the following:

NPB100L (3 units)

NPB 102L Animal Behavior hybrid lab course^d (3 units)

NPB123[#] Comparative Vertebrate Organology (4 units)

EVE105[#] (Phylogenetic Analysis of Vertebrate Structure) (4 units)

^dnew course under development

b. Track core courses

6 units

Choose two courses from the following list:

1. Sensing the Environment NPB 126, Sensory Ecology (adapted course)(3 units)

2. Environmental Physiology: NPB 140 (3 units)

3. Animal Behavior: NPB 102 (3 units) OR Neural Basis of Behavior: NPB 162 (3 units)

4. Behavioral/Environmental Endocrinology: NPB 142 Environmental Endocrinology (3 units) or NPB 152 Hormones and Behavior (3 units)

Possible new category/course: 5. Genes and the Environment

c. Choose two additional courses from the above or from the following: *6-9 units*

Recommendations in progress, suggestions welcome.

III. Physiology track

19- 27 units

a. Laboratory requirement

7-10 units

NPB 101L* (3 units)

(note: committee recommends up-grading and coordination with NPB110C; also should design to allow concurrent enrollment)

and, resources allowing, one additional course from the following list:

EXB/CHA106/106L[#] Human Gross Anatomy^f (4 units/3 units lab)

NPB123[#] Comparative Vertebrate Organology (3 units lecture/1 unit lab)

New course[#]: Cells, Tissues and Organs^g (3 units lecture/1 units lab)

NPB100L (3 units)

NPB111L* (4 units)

[EXB104L*^e (4 units)]

^epriority for EXB majors; currently requires EXB101,102, and 103 (103 can be concurrent); medical schools currently do not count course as upper division biology laboratory, but could be potentially addressed with name change

^fpass 1 EXB majors; NPB majors should have next priority over other majors

^gNew course being developed through Med: Cell Biology and Human Anatomy

Ideally would also like to develop a functional human anatomy course as an option/alternative to EXB/CHA 106/106L

b. Track core courses

6-8 units

Choose two courses from the following (when currently offered; current pre-requisites):

1. Cell Physiology: NPB107 (3 units Winter; BIS 102 or 105) (OR BIS 104)

2. Systems Regulatory (Endocrine or Neuro-) Physiology:
Endocrinology: NPB 130[#] (4 units Fall; 101 or 110C)

OR selected neurophysiology course; suggest NPB 163, Systems Neuroscience

3. Systems/ Human/ Exercise Physiology: EXB101^h (4 units Fall, Spring)(101 or 110C) OR another systems/mammalian oriented physiology course; NPB140 is a good possibility here

4. Biomechanics: EXB103^h (4 units Spring) (CHA/EXB106/106L; Physics 7A and 7B, NPB 101 (110C) or consent)(OR development of a comparative/evolutionary biomechanics-functional mechanics course to serve as a parallel alternative)

^hEXB majors have first priority

c. Two additional elective(s) from the list above or from the following: *6-9 units*

Recommendations in progress, suggestions welcome.

IV. Customized or flexible track (with consent of master adviser)

E. Capstone recommendation for one of the two additional electives (0-3 units)

NPB106 (requires concurrent enrollment in NPB199)

Frontiers courses (3 units)

Honors research project

Potential new course: Develop new seminar series modeled on the Frontiers courses: Series of faculty led seminars tied by a unifying theme that bridges the 3 tracks of the major.

*Note: course normally offered by lecturer or has significant lecturer contribution

#Course normally offered by different unit

Total units for the major: 100-121

Current NPB major: 99-115

Current EXB major: 105-128

Other College majors: BMB 106-115; CDB 101-116; GEN 95-117; MIC 101-111; PLB 98-111; EVE 104-114

Sample four year plan: Proposed NPB major revision			
Freshman year:	Fall	Winter	Spring
Math	Math 17A	Math 17B	Math 17C
Chemistry	Chem 2A	Chem 2B	Chem 2C
Bio Sci	(Freshman cohort ¹)	BIS 2A	BIS2B (BIS2A)
GE			
Units			
Sophomore year:	Fall	Winter	Spring
Math		STA100	
Chemistry	Chem 118A/8A	Chem 118B/8B	(Chem 118C or BIS105 ² or BIS102)
Physics	PHY7A	PHY 7B	PHY 7C
Bio Sci	BIS2C (BIS 2B)	(BIS2C)	
Major			Core 110A
GE			
Units			
Junior Year:	Fall	Winter	Spring
Math/Chemistry			
Bio Sci	BIS105 ³ (BIS102)	BIS101 (BIS103)	(BIS101)
Major	Core 110A or 110B	Core 110B or 110C	(Core 110C)
Major (Lab)		XXX	(XXX)
Major (elective)			
GE			
Units			
Senior Year:	Fall	Winter	Spring
Biology	(BIS104 ³)		
Major (elective/lab)	XXX	XXX	XXX
Major (elective)	XXX	(XXX)	(XXX)
GE			
Units			

¹Freshman interest groups

²BIS105 could be taken before BIS101 since it now does not require BIS101 (BIS102/103 also do not); also, adding a unit to satisfy more professional schools and more depth should be explored. Also, the more Physiology focused courses would benefit from required or recommended Biochemistry courses.

³Potential significant overlap with core course material, strongly recommended for pre-Health Science interest majors

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Appendix 8. Comment on the Discontinuation from Michelle Roppeau, Director Academic Athletic Advising. 3/20/14

Hi Susan,

Thank you for your message--and I apologize for the delay in responding. I have been carefully following the potential discontinuation of the exercise biology (EXB) major for the last several years. During that time, I have spoken with our student-athletes, coaches, and a number of faculty in neurobiology, physiology, and behavior (NPB) and EXB. At the request of Debbie Abbott-Poarch (former NPB advisor, now retired), I sent a written response on 3/26/12 about the potential impact that this decision would have on our current student-athletes and our coaches' ability to recruit top prospects to UCD. I copied several CBS faculty on that message and believed that my comments would be shared with those in a decision-making role. I know that some of our head coaches have also met with faculty members in CBS to express their concern, including (I believe) Tom Hahn, vice chair of curriculum for NPB.

I wanted to provide an overview of how the discontinuation of the EXB major affects our population.

Current student-athletes

We have 23 intercollegiate teams; our coaches recruit prospective student-athletes from across the country and internationally. In 2013-14, our student-athletes are from 16 different states and 8 foreign countries.

Our student-athletes excel in the classroom. They are enrolled in 72 different majors; the average quarterly GPA of our 23 teams in fall 2013 was 3.00. In fall 2013, 53% of our student-athletes earned a 3.00 or higher quarterly GPA. Currently 44.7% of our student-athletes have a cumulative GPA of 3.00 or higher.

In March 2012, there were 83 student-athletes officially declared in the EXB major (14% of our total student-athlete population) with additional student-athletes in the process of declaring. I was told on 7/30/12 that current UCD students would be allowed to change their major to EXB only through 9/27/12. I immediately sent a message to our student-athletes and coaches. A number of our student-athletes rushed to declare the major before the deadline, including several who actually traveled back to Davis during the summer to obtain the necessary signatures and submit the change of major paperwork before the deadline.

Today we have 53 declared EXB majors (10% of our total population). I know that number would be significantly higher if students had been allowed to declare the EXB major during 2012-13 and 2013-14. Our athletic academic advisors meet with every student-athlete in individual appointments; for student-athletes who had

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come to UCD intending to major in EXB, we have had to help them find (less personally desirable) alternative majors.

Recruiting

The EXB major was a significant asset to our coaches' recruiting efforts. We were able to attract high ability student-athletes to UCD by communicating the following:

1. UCD had the only EXB major in the entire UC system. For many recruits, UCD became their top choice of school when they realized they could complete a demanding science major while concurrently participating in NCAA Division I athletics.
2. UCD had one of the only EXB programs on the entire west coast.
3. The EXB major was excellent preparation for medical school, dental school, and nursing school as well as graduate health science programs in physical therapy, chiropractic medicine, physician assistant, optometry, and athletic training. We have a large number of pre-health student-athletes. In the career panels that I have attended for pre-health students (sponsored by the pre-health advising office in the Student Academic Success Center), every panel has included at least one UCD alum who commented that "the EXB major was the perfect preparation for admission" to medical school, nursing school, physical therapy, etc.
4. To my knowledge, EXB was the only science major at UCD that required both human anatomy with a lab and physiology as part of the degree. The NCAA Division I academic progress rules will not allow courses to count toward athletic eligibility unless they are required in the student-athlete's degree program. Taking anatomy and physiology as required courses in the EXB major was very important for our pre-health student-athletes who needed those courses for admission to specific health science graduate programs.
5. The EXB major was attractive to many student-athletes because it allowed the unique opportunity to combine science with their longstanding interest in sport. Parents of recruits were often relieved to learn that our EXB major had little in common with less demanding programs in kinesiology or physical education offered at other NCAA Division I schools. In addition, the human performance lab in EXB provided an excellent applied setting for advanced undergraduate student-athletes to do directed study, research, and internships with faculty. For several of our first generation student-athletes, the mentorship by EXB research faculty was actually the reason those student-athletes decided to pursue academic graduate degrees.
6. The EXB major filled an important void in the undergraduate curriculum at UCD, particularly when coupled with the ongoing delay in the start of the bachelor's degree program in the Betty Irene Moore School of Nursing (originally announced to begin in fall 2011).

Head coach comments

Our head coaches have expressed frustration, dismay, and confusion at the idea of discontinuing the EXB major. They have asked me repeatedly why a major with high enrollment and high demand for classes would be eliminated while other majors with much lower demand and student enrollment--including other majors in CBS--would be retained. They strongly believe that the discontinuation of the EXB major (and the rumors related to the discontinuation as it has gradually been phased out) have had a negative effect on recruiting. A sample of head coach comments during the past 18 months (paraphrased):

--"With the rising interest in topics like childhood obesity, injury prevention, rehabilitation, wellness, cross-cultural health issues, and the role of exercise in healthy aging, why would the EXB major be discontinued? It makes no sense to cut this program especially since there is such demand for both the major and the EXB classes. They should be adding professors and expanding the major, not cutting it."

--"When I came to California, I realized that the EXB major was a great tool to use in recruiting pre-med student-athletes. We had a unique program that no other UC offered. I could understand if nobody was enrolled in the major--but students want to major in EXB. This makes no sense."

--"The job market is tough but the health careers with the best job outlook include dentist, nurse, physical therapist, physician, and physician assistant. The EXB major is great preparation for all those careers--and I say that to parents when I make recruiting visits. With the cost of a college education, why would UCD cut the one major that gives students the chance to take all their prerequisites to get into a health science grad program?"

--"I've had recruits choose UCD over UC Berkeley and UCLA simply because we offered the EXB major."

Student athletic trainer internship program

Intercollegiate athletics also has 32 student athletic trainer interns who assist our full-time athletic trainers by providing medical care to the student-athletes on 23 intercollegiate teams during practice, in daily rehab with injured student-athletes, and at both home and away competitions. The student athletic trainers are not student-athletes but are instead part of a highly competitive, well-established unpaid internship that lasts for 1-2 years. In previous years, 90-95% of the student athletic trainers were EXB majors.

The full-time certified athletic trainer who supervises the student athletic trainer interns states, "More of our student trainers are now coming from majors other than EXB. I definitely see a difference in the student athletic trainers' background and ability to provide quality service simply because they are not EXB majors."

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New program at UC Irvine

On March 10th (last week), UC Irvine launched the web site announcing their new interdisciplinary Exercise Medicine and Sport Sciences Initiative (EMSSI) and new B.S. degree in exercise sciences. This new major begins in fall 2014; the motto of the program is "preparing tomorrow's leaders in the health sciences--today".

The mission of the EMSSI is "to promote and expand scholarly activities and innovative discoveries in all fields associated with exercise and sport sciences, exercise medicine and rehabilitation. The EMSSI will enhance human health and wellness through undergraduate and graduate teaching, basic and translational research, development of innovative technologies, service to the community, and clinical activities." (<http://emssi.uci.edu/education/b-s-exercise-science/>)

They also note: "In addition, EMSSI will interact with Intercollegiate Athletics (ICA), providing educational and research opportunities for our student athletes at UC Irvine. It is worth noting that the 2010 Knight Commission Report entitled *Restoring the Balance* states that collegiate athletic programs should '...make academic values a priority and treat college athletes as students first and foremost—not as professionals.' **The EMSSI fully integrates ICA and provides unique integration and interactions consistent with the Knight Commission Report and is an example of how Division I athletics can be fully integrated with academic/research programs.**" (<http://emssi.uci.edu/about/background/>) The EMSSI notes that they have research funding opportunities from both the National Institutes of Health and the American College of Sports Medicine.

The irony of this announcement: Dr. James Hicks, Professor of Biology and Associate Vice Chancellor for Research at UC Irvine, was instrumental in developing the EMSSI. Professor Hicks actually sent his son, Colin Hicks, to UCD because Colin wanted to major in EXB while competing on an NCAA Division I water polo team. There was no other UC school that afforded this opportunity--which meant our head coach had a significant recruiting advantage simply because we had the EXB major. Colin is graduating in the EXB major at the end of winter quarter 2014.

I appreciate the opportunity to give feedback on the ways in which the discontinuation of the EXB major has affected our current student-athletes, our student athletic training internship program, and our coaches' ability to recruit prospective student-athletes. I have had numerous conversations throughout the last 18 months with parents, student-athletes, recruits, coaches, athletic administrators, and faculty members who were concerned about the decision to eliminate the EXB major. There has been no support for elimination of the major; instead, this news has been met with an overwhelming sense that UCD is actually missing a crucial opportunity to capitalize on the existence of a major that is in high demand, offers the prospect for robust research, and provides classroom and laboratory experiences directly applicable to future graduate training and careers in

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the health sciences. Along with our student-athletes and coaches, I would add my strongest support to both the continuation and growth of the EXB major.

If you have any questions, please feel free to contact me.

Take care,

Michelle

Michelle Roppeau, M.A.
Director of Athletic Academic Advising
Student-Athlete Academic Services
264 Hickey Gym (main office)
University of California, Davis
One Shields Ave.
Davis, CA 95616
(530) 752-0714 phone
(530) 752-6681 fax
maroppeau@ucdavis.edu
<http://www.ucdavisaggies.com/saas/ucda-saas.html>

On Mar 16, 2014, at 11:56 PM, Susan L. Keen wrote:

To: Michelle Roppeau,
Director, Athletic Academic Advising,

Dear Michelle,

As you may have heard, CBS is pursuing discontinuation of the EXB major. Admissions were suspended for 2012/13 and have been suspended again for 2014/15. I am writing to ask whether the discontinuation will be problematic for athletics and whether there is anything we can do to mitigate the effects of discontinuation once it happens. It seems possible that the repeated suspensions have had an effect and that there will be little new effect of discontinuation, but I wanted to hear your thoughts on this.

Best wishes,
Susan

Upper Division Required EXB Courses from the UC Davis Catalog

101. Exercise Physiology (4)

Lecture—4 hours. Prerequisite: Neurobiology, Physiology, and Behavior 101. Physiologic responses to acute exercise, and physiologic adaptations to both chronic exercise (training) and selected environmental stresses. Emphasis on the muscular, metabolic, cardiovascular, respiratory and renal responses and adaptations to exercise. Only 1 unit of credit allowed to students who have completed Exercise Science 101. Only 3 units of credit allowed to students who have completed Exercise Science 102. Not open for credit to students who have completed Exercise Science 101 and 102 (Former Exercise Science 101 and 102). GE credit: SE, SL.—I. (I.) **Bodine, Shaffrath**

102. Introduction to Motor Learning and the Psychology of Sport and Exercise (4)

Lecture—4 hours. Prerequisite: Psychology 1 recommended. Theoretical and practical issues in motor learning, sport psychology, and exercise psychology. Emphasis on how motor skills are acquired and retained, and on the application of social psychology and human motivation studies to human performance. Only 2 units of credit allowed to students who have completed Exercise Science 104. Only 2 units of credit allowed to students who have completed Exercise Science 105. Not open for credit to students who have completed Exercise Science 104 and 105. (Former Exercise Science 104 and 105.) GE credit: SocSci | SS.—I, II. (I, II.) **Salitsky**

103. Analysis and Control of Human Movement (4).

Lecture—4 hours. Prerequisite: Cell Biology and Human Anatomy 101 and 101L, Physics 7A and 7B. Neurobiology, Physiology, and Behavior 101 recommended. Introduction to functional anatomy, neurophysiological basis of motor control, and biomechanics of human movement. Human movement understood in the context of body structures, basic principles of physics, and functional characteristics of nerve and muscle. Only 1 unit of credit allowed to students who have completed Exercise Science 103. Only 3 units of credit allowed to students who have completed Exercise Science 104. Not open for credit to students who have completed Exercise Science 103 and 104. (Former Exercise Science 103 and 104.) GE credit: QL, SE.—III. (III.) **Williams**

104L. Exercise Biology Laboratory (3)

Laboratory—3 hours; lecture—1 hour; discussion—1 hour. Prerequisite: course 101, 102, 103 (the last course may be taken concurrently). Principles and analytical procedures for assessing fundamental physiological, biomechanical, motor learning and motor control factors which underlie human movement and performance. Only 1 unit of credit allowed to students who have completed Exercise Science 101L. Only 1 unit of credit allowed to students who have completed Exercise Science 103. Not open for credit to students who have completed Exercise Science 101L and 103. GE credit: Wrt | SE, WE.—I, III. (I, III.) **Shaffrath**

106. Human Gross Anatomy (4)

Lecture—4 hours. Prerequisite: Biological Sciences 2A; concurrent enrollment in course 106L or Cell Biology and Human Anatomy 101L strongly recommended. Upper division students only; Pass 1 open to upper division Exercise Biology or Anthropology majors only; Pass 2 open to Seniors in any major; Open enrollment at the start of the quarter for upper division students in any major. Detailed study of the gross anatomical structure of the human body, with emphasis on

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function and clinical relevance to students entering health care professions. (Same course as Cell Biology and Human Anatomy 101.) GE credit: SciEng | SE.—II. (II.) Gross

106L. Human Gross Anatomy Laboratory (3)

Laboratory—9 hours. Prerequisite: Biological Sciences 2A; must take course 106 or Cell Biology and Human Anatomy 101 concurrently (or have already completed). Upper division students only; Pass 1 open to upper division Exercise Biology or Anthropology majors only; Pass 2 open to Seniors in any major; Open enrollment at the start of the quarter for upper division students in any major; mandatory attendance on first day of lab. Detailed study of prosected human cadavers in small group format with extensive hands-on experience. (Same course as Cell Biology and Human Anatomy 101L.) GE credit: SciEng | SE.—II. (II.) Gross

110. Exercise Metabolism (3)

Lecture—3 hours. Prerequisite: course 101 or Neurobiology, Physiology and Behavior 101. Exercise metabolism, with emphasis on skeletal muscle and cardiac muscle metabolism during activity and inactivity. Basics of bioenergetics, substrate utilization, and cell signaling; mechanisms that regulate these properties, and differences between skeletal muscle and cardiac muscle metabolism. GE credit: SE.—III. (III.) **Gomes**

111. Environmental Effects on Physical Performance (3) stays in track

Lecture—2 hours; discussion/laboratory—3 hours. Prerequisite: courses 101 or consent of instructor. The effects of thermal, barometric and gravitational conditions on physiological function and physical performance of humans. Acute and chronic effects, emphasizing physiological adaptations and limitations, will be studied. GE credit: QL, SE.—II. (II.) **Shaffrath**

112. Clinical Exercise Physiology (4)

Lecture—3 hours; laboratory/discussion—3 hours. Prerequisite: courses 101 or consent of instructor. Physical activity as a therapeutic modality in normal and diseased populations (cardiovascular, pulmonary, diabetic). Effects of exercise and inactivity in terms of normal physiology, pathophysiology, and therapeutic benefit. Exercise fitness and disease assessment methods. GE credit: SE, SL.—II. (II.) Harris, **Shaffrath**

115. Biomechanical Bases of Movement (3)

Lecture—2 hours; laboratory—3 hours to alternate weekly with discussion—1 hour. Prerequisite: course 103 or consent of instructor. Biomechanical bases of human movement investigated; topics include musculo-skeletal mechanics, tissue mechanics, electromyography, and measurement and analysis techniques. Application made to sport, clinical, and work environments, including extensive analysis of locomotion. GE credit: SciEng | QL, SE, VL, WE.—I. (I.) Williams

117. Exercise and Aging in Health and Disease (3)

Lecture—2 hours; discussion—1 hour. Prerequisite: course 101 or 113 (concurrently). Etiology of and standard therapy for various diseases associated with aging (e.g., cardiovascular, pulmonary, and renal diseases, diabetes, obesity, lipemias, etc.). Exercise will then be

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considered as a protective and/or therapeutic modality. GE credit: SciEng | SE.—III. (III.)
Shaffrath

124. Physiology of Maximal Human Performance (4)

Lecture—3 hours; practice—4 hours. Prerequisite: course 101 or permission of instructor; Biological Sciences 101, 102, and 103 recommended. Molecular mechanisms underlying adaptation to training. Learn how to exercise to maximize their own performance as well as learning how the frequency, intensity and timing of exercise and nutrition affect the molecular signals that underlie performance. GE credit: SE.—II. (II.) Baar

125. Neuromuscular and Behavioral Aspects of Motor Control (3)

Lecture—2 hours; lecture/discussion—2 hours. Prerequisite: course 101. Factors which affect control of movement from neuropsychological, physiological, behavioral, and mechanical viewpoints. Topics include central vs. peripheral control mechanisms, open and closed loop theories, motor programming, cognitive learning strategies, and the effects of biochemical and biomechanical influences. GE credit: SE.—Bodine

126. Tissue Mechanics (3)

Lecture—2 hours; laboratory/discussion—3 hours. Prerequisite: course 103 or Engineering 45 or consent of instructor. Structural and mechanical properties of biological tissues including bone, cartilage, ligaments, tendons, nerves, and skeletal muscle. (Same course as Biomedical Engineering 126.) GE credit: SciEng | QL, SE, WE.—II. (II.) Hawkins

Gina Anderson

From: Susan L. Keen <slkeen@ucdavis.edu>
Sent: Friday, April 04, 2014 1:51 PM
To: Gina Anderson
Subject: Fwd: RE: Request for discontinuation of EXB major

Please see note from Steve Theg, chair of the TEC.

Thanks,

Susan

----- Original Message -----

Subject:RE: Request for discontinuation of EXB major
Date:Fri, 4 Apr 2014 12:46:01 -0700
From:Steven Theg <smtheg@ucdavis.edu>
To:Susan L. Keen <slkeen@ucdavis.edu>

Susan,

The FEC is not going to repeat this again. We went through it all last year, and the year before that. The opinion around the table was that we don't need to revisit this.

Steve

From: Susan L. Keen [<mailto:slkeen@ucdavis.edu>]
Sent: Friday, April 04, 2014 10:33 AM
To: Steven Theg
Subject: Fwd: Request for discontinuation of EXB major

Steve, Is the FEC going to review this again?
If so, here is our full latest request.

Susan

----- Original Message -----

Subject:Request for discontinuation of EXB major
Date:Thu, 03 Apr 2014 22:54:16 -0700
From:Susan L. Keen <slkeen@ucdavis.edu>
To:Matthew Traxler <mjtraxler@ucdavis.edu>
CC:bxn@math.ucdavis.edu Nachtergaele <bxn@math.ucdavis.edu>, Gina Anderson <gina.anderson@ucdavis.edu>, James E.K. Hildreth <jekhildreth@ucdavis.edu>, James Trimmer <jtrimmer@ucdavis.edu>, Mitchell <mjsutter@ucdavis.edu>

Dear Matt,

On behalf of the College of Biological Sciences, I am submitting to the Undergraduate Council our request for the discontinuation of the Exercise Biology (EXB) major. The request is attached. I hope I have completed all the required sections of this request. Please let me know if something is missing or needs more explanation.

Sincerely,
Susan

--
Susan L. Keen, PhD
Associate Dean
Undergraduate Academic Programs
College of Biological Sciences