Minutes of the CSM Senate Meeting  
Held on Monday, April 8, 2013,  
2.30 – 4.00 P.M. at Dean’s Conference room

Members in attendance:  
Catalin Zara, Mathematics, Chair  
Chandra Yelleswarapu, Physics, Secretary  
Bob Wilson, Computer Science  
Manickam Sugumaran, Biology  
Robert Stevenson, Biology

Members absent:  
Michelle Foster, Chemistry  
Juanita Urban-Rich, EEOS

Others in attendance:  
William Hagar, Associate Dean, CSM

Meeting was called to order at 2:40 pm.

1. Approval of the minutes of March 11th 2013 meeting: The CSM Senate members approved the minutes unanimously.

2. Updates on previous actions were provided.

3. Course addition: PHYSIC 645 - Cancer Biophysics

Motion: To approve the new course PHYSIC 645 - Cancer Biophysics.

Rationale: The value of incorporating concepts and methods from biophysics in cancer research has become increasingly recognized in recent years. This course is designed to provide detailed understanding of the specific challenges in cancer research where physics-based approaches are required in order to make progress. This is a unique course offering, which, to the best of knowledge of Physics Department, is not offered by other graduate programs in the Boston area. This course has been offers as a Special Topics seminar (Physics 697) in Spring 2012, which was well received by students and directly led to productive cancer biophysics research involvement by several students who took the course. The majority of students enrolled in cancer research within UMB are seeking training to continue in their scientific careers in the Boston area, which happens to be a hotbed of exactly the type of research the proposed course offering addresses. As an elective course with a strong focus on current research topics and scientific communication (both oral and written), the proposed course is also a strong complement to the required core physics coursework of the program. For all of these reasons the Physics Department believes that this proposed course offering is one that fills an unmet need for our students, as well
as the demands of the job market and does so while playing to the strengths of the existing program and its faculty. The Graduate Studies Committee has been consulted and provided feedback that has been incorporated in the current proposal.

The proposed new course was approved as is unanimously by the Senate. It will be sent to the Graduate Studies Committee of the Faculty Council for formal approval.

The next three proposals for new courses, submitted by the School for the Environment, are similar and have been discussed together.

3.b Course addition: EEOS 299 - Environmental Science Methods and Practice

Motion: To pre-approve the new course EEOS 299 - Environmental Science Methods and Practice.

3.c Course addition: EEOS 356 – Natural History of Nantucket

Motion: To pre-approve the new course EEOS 356 – Natural History of Nantucket.

3.d Course addition: EEOS 390 – Changing Coastal Environments

Motion: To pre-approve the new course EEOS 390 – Changing Coastal Environments.

Rationale: These courses are open only to students admitted to the Nantucket semester program offered in collaboration with CAPS. The program is open to all UMass Boston students, juniors and seniors, seeking to pursue an immersive research-intensive environmental experience on Nantucket. Courses offered through the program are designed to meet upper level elective and skills/lab requirements for EEOS and BIOL majors and can be used by other students to meet elective requirements as determined by the home department. The program is similar to a semester abroad program in its structure. The courses include lectures, labs, and intensive field components, during the day, evenings, and weekends. Much of the field and lab activities depend on tide and extend for 5-6 hours each field trip. Due to the depth of field and lab experiences, these courses are offered for 4 credits for a 3-week block.

Senate Comments: While the CSM Senate understands the intensive nature of these courses (and why they are 4-credit courses even though they last only three calendar weeks), for other levels of review it would be helpful to slightly expand the Tentative Class Schedule tables and include the actual number of hours students are expected to spend each day on each activity (lecture, lab, field work). That way, it would be clearer that students spend comparably many hours on course activities as they would for a regular course on campus. The CSM Senate also recommends several minor modifications to the second paragraph of the course descriptions.

The new courses EEOS 299, EEOS 356, and EEOS 390 have been pre-approved unanimously pending the implementation of the CSM Senate recommendations. Once the revised proposals are received, they will be sent to the Academic Affairs Committee.
3.e Course addition: BIOL 332 – Biology of Marine Invertebrates Laboratory

**Motion:** To pre-approve the new course BIOL 332 – Biology of Marine Invertebrates Laboratory.

**Rationale:** This proposed laboratory course is a 1-credit version of the previously offered 2-credit lab in the Biology of Marine Invertebrates, which had been part of Biol 331. The lecture component, Biol 333, will be a co-requisite for the new 1-credit lab course. The new version will cover the same material but in less depth. This new course will give more students the opportunity to have the experience of a Marine Invertebrates lab, and it will fit better into their schedules.

The proposed new course was pre-approved unanimously by the Senate. It will be sent to the Academic Affairs Committee.

3.f Course addition: BIOL 3xx– Microbial Genomics Laboratory

**Motion:** To pre-approve the new course BIOL 3xx – Microbial Genomics Laboratory.

**Rationale:** Demand for lab experiences has exceeded our capacity and we must keep pace with current tools and techniques in the fields. This course will help to make our students marketable and provide required 300-level credit.

**Senate comments:** The Senate requested a new course number, since BIOL 336 is already taken by an active course.

The proposed new course was pre-approved by the CSM Senate with the condition that the course is assigned a new number. It will be sent to the Academic Affairs Committee.

3.g. Course addition: BIOL 607 - An Introduction to Computational Data Analysis for Biology

**Motion:** To approve the new course BIOL 607 - An Introduction to Computational Data Analysis for Biology

**Rationale:** This is a basic course in statistics, data analysis, and experimental design for biology graduate students or undergraduates engaged in research projects in the biological sciences.

**Senate comments:** The syllabus should provide more information, in compliance with GSC Syllabus requirements. Moreover, the revised syllabus should contain a detailed weekly schedule with listed assignments that would make it clearer that the proposed course has a Biology-specific content.

The proposed new course has been approved unanimously pending the implementation of the CSM Senate recommendations. Once the revised proposal is received, it will be sent to the Graduate Studies Committee of the Faculty Council.
3.h. Course Addition: BIOL 634 - Methods in Phylogenetics and Macroevolutionary Analysis

**Motion:** To approve the new course BIOL 634 - Methods in Phylogenetics and Macroevolutionary Analysis

**Rationale:** This course was offered as Special Topics BIOL 697 in the Spring of 2011 and was evaluated very favorably by the students. This course will provide the quantitative skills needed by many graduate students in our Environmental Biology PhD program, our MS program as well as others such as the School of Marine Sciences or School for the Environment.

**Senate comments:** The syllabus should provide more information, in compliance with GSC Syllabus requirements. A template and model proposals will be provided.

The proposed new course has been approved unanimously pending the implementation of the CSM Senate recommendations. Once the revised proposal is received, it will be sent to the Graduate Studies Committee of the Faculty Council.

3.i Program addition: Ph.D. in Computational Sciences

**Motion:** To approve the Phase I proposal for the Ph.D. in Computational Sciences, as a new interdisciplinary doctoral program.

**Description:** The University of Massachusetts Boston, College of Science and Mathematics (CSM) is seeking permission to offer an interdisciplinary doctoral degree, the Ph.D. in Computational Science. This program will have the primary purpose of preparing doctoral-level scientists for careers as researchers and university faculty. This Phase 1 Proposal is based on an initial report produced by a group of faculty representing every department in CSM.

**Rationale:** The Graduate Program in Computational Science (GPCS) is intended to coordinate and promote computationally based research, to foster computational science education and to provide for the expansion of computational resources and support at UMB. It is intended that faculty and graduate students involved in computational science related projects in different departments at UMB will participate in GPCS.

The program will build on the strong scientific collaborations that already exist among the faculty from many different departments of the college. GPCS is intended to provide a forum for the multidisciplinary exchange of ideas among researchers, educators and students. Regularly scheduled seminars and symposia will be offered to highlight advances in computational science. GPCS will act to develop and facilitate the formulation of projects in computationally based research and education, working with scientists from multiple different departments and centers within UMB.
The proposed new program was approved as is unanimously by the Senate. It will be sent to the Graduate Studies Committee.

3.j Program addition: Ph.D. in Integrative Biosciences

**Motion:** To approve the Phase I proposal for the Ph.D. in Integrative Biosciences, as a new interdisciplinary doctoral program.

**Description:** The University of Massachusetts Boston, College of Science and Mathematics (CSM), is seeking approval to offer an interdisciplinary doctoral degree in Integrative Biosciences with tracks in biochemistry, bioinformatics, and biophysics. This program will have the primary purpose of preparing doctoral-level scientists for careers in industry, government, and academia. This Phase 1 Proposal is based on an initial report produced by a group of faculty representing every department in the CSM.

**Rationale:** The development of the Integrative Biosciences Graduate Program (IBGP) is consistent with the broader shift toward adoption of multidisciplinary approaches in biomedical research, which are significantly accelerating the pace of discovery and enhancing our understanding of biological systems. It combines research in the biosciences, such as biology, biochemistry, and biophysics, and it embodies a mathematical and computer sciences foundation. The IBGP is intended to coordinate and promote biosciences research, to foster interdisciplinary science education and to provide for the expansion of biosciences resources and support at UMB.

The program will build on the strong cross-disciplinary scientific collaborations that already exist among CSM faculty, and engage additional CSM investigators in interdisciplinary research. The program will structure, facilitate, and formalize the cross-disciplinary collaborations among the CSM faculty. Another major motive for initially establishing this program here at UMB, rather than system-wide across UMass, is the unique faculty research expertise on the Boston campus alongside UMB-specific formal agreements with research-intensive groups like Dana Farber/Harvard Cancer Center (joint NIH U54 grant), the Dana Farber Cancer Institute (joint Center for Personalized Cancer Therapy, CPCT), and the UMB Venture Development Center. IBGP is intended to provide a forum for the multidisciplinary exchange of ideas among researchers, educators and students.

The proposed new program was approved as is unanimously by the Senate. It will be sent to the Graduate Studies Committee.

4. **Dean’s announcements:** None.

5. **Other business:** None.

Meeting was adjourned at 3.55 pm.