

**Report on the Major in Biology
Committee on Majors
January 20, 2012**

In October of 2011, the Department of Ecology and Evolutionary Biology and the Department of Molecular, Cellular, and Developmental Biology submitted a joint proposal to split the current Biology major into two distinct majors and to develop a multi-departmental Introductory Biology Course. In response, the Committee on Majors met with eight students currently pursuing the Biology major on October 14, and then on October 21 met with faculty from both departments, consisting of Paul Turner (Chair, EEB), Leo Buss (DUS, EEB), Jeffery Powell (former DUS of E&EB), Ronald Breaker (Chair, MCDB), and Douglas Kankel (DUS, MCDB). The COM also met with Dean William A. Seagraves on November 18 to discuss this issue.

Following the split of the Department of Biology and the major in Biology into the Departments of EEB and MCDB and majors with the same designation in 1997, these two departments petitioned for the reinstatement of a unified Biology major in 2001, and this action was approved by the Yale College Faculty. Now the Committee on Majors has received testimony and reports from the faculty and current students in the major claiming that the major is not operating as a unitary major, but is in fact split into two majors that mirror the biological focuses of the two departments. The input to the Committee also made it clear that there is little or no faculty support in either department and none among the current majors for continuing the unitary Biology major. Both DUSes noted that the current arrangement has actually limited the ability of both departments to make innovations in their programs, except “around the edges” because of the cumbersome mechanisms of interdepartmental cooperation that had to be invoked in order to do so.

In the course of the Committee’s conversations with the principals, a pronounced asymmetry became apparent in the attitudes of the students and, to a lesser extent, of the faculty of the two departments as to what constituted the minimum allowable breadth of knowledge required of a biologist, with those from MCDB emphasizing a cellular and molecular background and those from EEB stressing the need to be familiar with both molecular and organismic aspects of the science. This led the Committee to its central concern and perhaps only misgiving about the proposed split, relating to the possibility of early over specialization on the part of the great majority (~85%) of biology majors in the present MCDB track, 70 to 80 percent of whom are planning entry into the medical profession.

Faculty responses to questions on this topic were thoughtful and spirited. Faculty and major-students alike spoke of the scope and multipolar nature of modern biology, which make it effectively impossible for any curriculum, especially one within a liberal arts university, to represent the full corpus of the science. One noted that there were no constraints to prevent their students from taking courses in any of the departments representing biology. The response that most interested the Committee, however, was the genuine concern expressed by the faculty of both departments concerning the efficacy of the course-sequence that was supposed to address the issue of the early onset of overspecialization among biology students, namely Principles of Molecular, Cellular, and Developmental Biology (MCDB 120a) and Principles of Ecology, Evolution, and Behavior (EEB 122b). There was general agreement among the faculty that this

course sequence needed to be revamped and, although discussions still appeared to the Committee to be at an early stage, it was impressed by the faculty's commitment to addressing the overspecialization issue.

The Committee on Majors recommends that the current major in Biology be divided into a major in Ecology and Evolutionary Biology and a major in Molecular, Cellular, and Developmental Biology.

The formation of an interdepartmental committee, chaired by the DUS of MCDB and with representatives from EEB, MB&B and MCDB, to revamp the curriculum of the introductory course-series and to institute a placement examination that would not, as at present, allow students to pass out of the course requirement based solely on AP scores, reflects a genuine effort on the part of both departments to address the problem of overspecialization. The COM strongly endorses the proposed plan to create a course offered jointly by all three biological sciences departments (EEB, MCDB, and MB&B) "that will solidly introduce all students to the foundations in the biological sciences and that will be an appropriate introduction for the majors of at least those 3 departments." The joint initiative to focus on the introductory course-sequence may well afford the last and best opportunity to provide students majoring in EEB, MCDB, and MB&B with the broad context of the biological sciences.

The Committee on Majors further recommends that, five years after the initiation of a new introductory biology curriculum, the participating departments present an update to whichever standing committee is deemed appropriate by the Dean of the College.

The Committee also agrees with the position of the faculty that students be required to show competence in the principles of general biology through a placement examination or a means other than AP credit alone. Moreover the COM enthusiastically supports the charge of the interdepartmental committee that has been formed to revise and revamp the content of the current introductory course-sequence. This motion and these recommendations should in no way be construed as diminishing the prerogatives of the DUS of the respective departments to grant exceptions in extraordinary circumstances of advanced standing on the part of individual students.

Committee on Majors

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