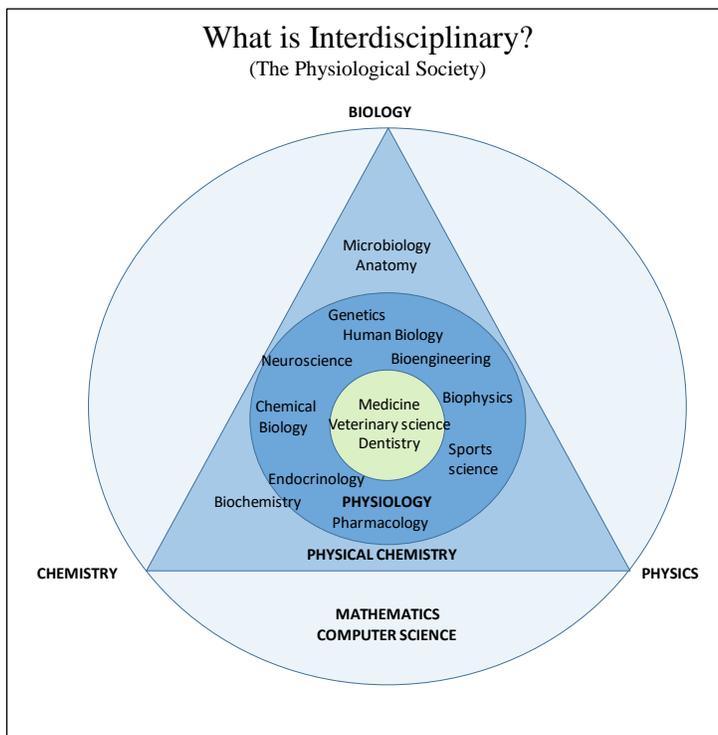




IPHY comments on the draft “Recommendations from the Academic Futures Working Group on Interdisciplinary Education, Research and Creative Works”

General Overview

The Department of Integrative Physiology (IPHY) applauds the inclusion of a working group on interdisciplinary education, research and creative works as part of the Academic Futures initiative, and agrees that “interdisciplinarity” is a key value in our teaching, research, and creative work.



Depending on the definition used, an area of investigation may or may not be considered interdisciplinary. The Physiological Society defines physiology as the science of function in living organisms at the level of genes, cells, tissues, organs, and systems. Physiology is interdisciplinary because it draws on anatomy, biochemistry, mathematics and statistics, physics and other disciplines (see figure). The fact that IPHY majors are required to take course offerings from EBIO and MCDB during their introductory sequence as evidence that, as offered at CU Boulder, IPHY majors experience interdisciplinary education and research.

The Working Group in their report fail to define “interdisciplinary”, which limits the utility of many of the overall recommendations. The core of a report with recommendations such as those made by the working group must include definitions that clearly articulate the fundamental premise of the proposal.

After review of the working group draft report by the faculty at large and its Executive Committee, IPHY submits the following comments on their recommendations.

Comments

- The preamble of the report acknowledges the importance of strong core departments, yet all recommendations will functionally direct obligations and responsibilities away from departments. An alternative approach would be to develop proposals that sustain core departments while promoting interdisciplinarity, such as recommending resources be directed to support joint hires, for example.
- The working group recommendations are written from the perspective of social sciences and humanities, with the phrase “natural sciences” mentioned only once in the entire draft. This emphasis on the social sciences and humanities fails to recognize differences across disciplines that make a “one-size fits all solution” untenable. Perhaps the working group considers that the Natural Science role in new models of interdisciplinarity will be driven by existing science institutes, e.g.,

INSTAAR, IBS, IBG, BioFrontiers, and LASP. If this is indeed the unstated intent of the working group, how does that approach affect departments like IPHY, that have never invested heavily in institutes?

- In general, many of the interdisciplinary structures proposed in the document already exist within the natural sciences in the form of institutes and dual-unit PhD degrees and graduate certificates. Most interdisciplinary ideas arise naturally and are driven by research needs. Expensive research infrastructure, such as the proposed incubators, is not entirely necessary for encouraging interdisciplinary exchange. Faculty naturally gravitate toward interdisciplinary potential in research and teaching when needed. A more pressing issue would be to minimize the existing administrative hurdles (such as reducing subcontract rates across CU campuses) for collaborative work rather than nudging the development of more (expensive) infrastructure.
- The recommendations of the working group, if adopted, would require substantive new campus-wide resource allocation. Additional (new) resources would be required for the “Champion” (vice Provost) and her/his office, for personnel necessary to staff the “operational interdisciplinary network”, for support of the research incubators, and to replace core instructional faculty due to migration of some to teaching academies. Re-allocating resources for these new campus administrative units would most assuredly come at the expense of colleges and academic departments.
- In addition to new resource requirements for the campus Champion and the Operational Interdisciplinary Network, funds would be required for each of the (unspecified number of) interdisciplinary teaching academies. The working group draft report suggests that teaching academies will need directors/co-directors, faculty advisory committees, dedicated staff, faculty service time, and incentives for departments to participate. Each of these needs require extensive funding, which also would likely be provided at the expense of colleges and academic departments. A subtext of these recommendations with respect to teaching academies is that institutes may wish to develop and offer their own curricula, which would further erode the contributions of the core departments.
- When IPHY was formed in its present iteration (2003) it was comprised of 29 instructional faculty and 675 undergraduate majors. In Fall 2019, there are 31 instructional faculty and 1,841 undergraduates. Under normal circumstances, IPHY is stretched to the limit with respect to available instructional faculty to provide the course offerings required for a major with this many students. It is becoming increasingly difficult to cover our course offerings when faculty are on sabbatical, medical leave, or are otherwise unavailable to teach in any give semester. Any additional “loss” of instructional faculty to interdisciplinary teaching academies will create an undue burden on our department and negatively impact our core curricula.
- Creating a “student credit hour marketplace” will negatively impact departmental finances and staffing. The working group recognizes that a student credit hour (SCH) marketplace could make it difficult for Chairs to staff required courses in existing core curricula; instructional faculty could retain a fraction of “their” SCH to be used to pursue individual faculty goals. Such an approach clearly identifies individual faculty goals as superseding those of the collective department or instructional unit. Under this system, faculty become a revenue source for the teaching academy, and a debit for the department. A potential flip-side to recommendations that a fraction of SCH be retained by instructional faculty is a system in which each faculty must demonstrate a set number of SCH hours per year, rather than simply meeting obligations for providing a fixed number of courses. Finally, the working group suggests that some departments could “opt-out” of the marketplace, but it is not clear whether this action would be temporary, thus requiring at some point that all departments/units participate.
- The working group report briefly discusses the interdisciplinary nature of research on the CU Boulder campus. One suggestion was the creation of interdisciplinary incubator teams that would foster new collaborations and result in new research. While this big idea is laudable, the interdisciplinary research incubator as proposed may be used as a “sabbatical-like leave” and no indication is given as to the potential impact of faculty participation in a research incubator on a department’s curriculum.