

# PROGRESS REPORT

**Working Group Name:** Life Science Meta-major

**Working Group #:** 13

**Chair:** Tim Scott

**Date:** March 25, 2022

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## Update on Actions Taken Since Last Report:

This is the second progress report.

In the preceding 5 weeks since the last report, the full working group has met bi-weekly whereas each sub-group has met weekly to advance the analysis and develop potential recommendations on the following areas:

- a) Leadership/Administrative Structure Subcommittee (Lead: Mark Zoran)
- b) Advising Structure Subcommittee (Lead: Tom McKnight)
- c) First-Year Life Science Subcommittee (Lead: Mary Bryk)
- d) Transition of BIMS Subcommittee (Lead: Ramesh Vemulapalli)
- e) Partner Programs Subcommittee (Lead: David Threadgill)

On March 02, the working group hosted Dr. Erica Kosal, Director of the Life Science First Year program (LSFY) at North Carolina State University. Dr. Kosal shared her experience leading such a unit and provided details on its operations (including curricular and extracurricular offerings, advising, admissions and entry into major, change of major, and student success data). It was clear from their experience that such a program has helped develop a sense of community and belonging in their students, as well as increase the student success rate with a 65-70% proportion of students staying in their declared major and another 20% moving to another life sciences partner program. Based on a review of student retention within life science programs at TAMU in 2018 and 2020, our life science programs show a 10-15% deficit in retention compared to NCSU. The development of the First-Year Life Science program thus offers the possibility of increasing our student success rate in these fields and building a strong pipeline for health-related professional programs.

The working group identified the shared required coursework in the first two semesters for all “partner” degrees (both within and outside the College of Arts and Sciences). The degrees that have been identified with clear overlap in first year curriculum, or that are opting to participate in the program (and review their curriculum to better align with the first-year sequence of courses) are: Biomedical Sciences (BIMS), Biochemistry, Biology, Genetics, Molecular and Cell Biology, Microbiology, Neuroscience, Nutrition, and Zoology.

The working group recommends that the BIMS program undergo a curriculum review in the fall 2022 for a transformation as an Interdisciplinary Program (IDP) program to better align with the interdisciplinary purpose and other academic programs in the interdisciplinary unit. This will provide new opportunities that currently do not exist on campus to exploit the unique combination of a large undergrad program with all the health professions that many students want to pursue for careers. Undergraduate majors preparing for health professions are presently not using the ‘Professors of Practice’ like engineering or business. Rather, this role is served by professionals (DVM, MD, DDS, and/or the PhD that teach in the professional curricula), many of which also teach upper-level undergraduate courses. The current link

with the College of Veterinary Medicine and Biomedical Sciences should be expanded to the College of Medicine and other health professions so students have the same experience with such 'Professors of Practice.'

The leadership sub-working group dedicated a fair amount of time to evaluating the administrative and leadership structure of the unit and worked in close collaboration and coordination with the similar subgroup in working group #17 (Interdisciplinary Studies).

A first draft of the expenditures and FTE that will be transferred to the unit (e.g. BIMS support staff) has been initiated. The working group continues to work with the finance liaisons to better constrain the rest of the budget for the entire interdisciplinary unit.

### **Next Major Issue to be Addressed:**

Discussions are in process to finalize recommendations on a 1<sup>st</sup> semester common life science experience for students, entry to major decisions (e.g. at moment of admission vs. post-first year), and flexibility in math sequences.

Decisions will need to be made quickly to integrate some component of advising for the first-year life science experience in the upcoming New Student Conferences.

### **Problems or Barriers Encountered and Solutions Identified:**

Defining a unit that is truly university-serving but embedded within a singular college is raising a lot of concerns from units outside of the future College of Arts and Sciences. The concern of access and visibility is particularly strong in support of students that will need to access the advising structure. At this point, there is a clear need to clarify which organizational option is preferred by leadership.

Another potential issue that remains unresolved is where this unit will be physically located. It will have a leadership structure and a substantial number of FTEs (particularly advisors). It will need a location that supports the collaborative nature of the work performed by such interdisciplinary unit.

### **Deliverables Completed:**

- Identification of a common 1<sup>st</sup> year curriculum.
- Identification of some components of budgets, including FTE salaries/operational funds, that need to be transferred to the interdisciplinary unit.
- Close coordination with the Interdisciplinary working group (#17) in the establishment and operation of the first-year life science program along with the transfer of BIMS to the interdisciplinary unit.

### **Timeline for Completion of Remaining Deliverables:**

April 11-15 – Draft recommendations regarding the administrative organization of the unit for interdisciplinary studies (with a proposed name) will be submitted to SIC for review. The recommendations document will identify a way to move forward the university studies programs, the IDP programs, the integration of the FYLS program and BIMS into the unit for interdisciplinary studies, and the advising organization.

## Appendix A

### Mapping of first-year curriculum in life science programs at TAMU

Degrees highlighted in light green are considered foundational programs of the First-Year Life Science option. Other partner programs will be welcomed as they request to join (e.g. Ecology and Evolutionary Biology has expressed a strong interest in joining the FYLS program).

| Degree  |   | Fall             |                |                     | Spring           |          |                     |
|---------|---|------------------|----------------|---------------------|------------------|----------|---------------------|
| College | Course  | BIOL 111         | CHEM 119       | MATH (147 or equiv) | BIOL 112         | CHEM 120 | MATH (148 or equiv) |
| CAS     | Biology   | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| CAS     | Microbiology  | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| CAS     | Mol Cell Biol   | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| CAS     | Zoology   | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| CAS     | Neuroscience  | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| CAS     | Biomedical Science  | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| COALS   | Animal Sci-Production Track                                 | Elective spring  | Yes            | Yes                 | No               | No       | Yes                 |
| COALS   | Animal Sci-Science Track                                    | Take in yr 2     | Yes            | Yes                 | Take in yr 2     | Yes      | Yes                 |
| COALS   | Biochemistry  | Take in spring   | Yes            | Yes                 | Take in yr 2     | Yes      | Yes                 |
| COALS   | Genetics  | Take in spring   | Yes            | Yes                 | Take in yr 2     | Yes      | Yes                 |
| COALS   | Ecology Conservation Biology-Ecology & Conservation Biology | Yes              | Take in yr 2   | Yes                 | Yes              | No       | Yes                 |
| COALS   | Ecology Conservation Biology-Ecoinformatics                 | Yes              | Take in yr 2   | Yes                 | Yes              | No       | Yes                 |
| COALS   | Ecology Conservation Biology-Forest Resources               | Yes              | Take in yr 2   | Yes                 | Yes              | No       | Yes                 |
| COALS   | Ecology Conservation Biology-Vertebrate Zoology             | Yes              | Take in yr 2   | Yes                 | Yes              | No       | Yes                 |
| COALS   | Entomology  | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| COALS   | Forensics & Investigative Sciences Science track            | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| COALS   | Forensics & Investigative Sciences Law track                | Yes              | Take in yr 2   | Yes                 | Yes              | No       | Yes                 |
| COALS   | Horticulture  | Yes              | Take in yr 2   | Yes                 | No               | No       | Yes                 |
| COALS   | Nutrition General; Molecular and Experimental: Dietetics    | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| COALS   | Bioenvironmental Science                                    | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| COALS   | Environmental Studies                                       | Elective         | Take in spring | Take in yr 3        | No               | No       | Take in yr 3        |
| COALS   | Poultry Science-Industry Track                              | Elective         | Take in spring | Take in spring      | No               | No       | Take in yr 2        |
| COALS   | Poultry Science-Technical Track                             | Elective spring  | Yes            | Yes                 | No               | Yes      | Yes                 |
| COALS   | RWFM-Rangeland Management Track                             | Elective in yr 2 | Take in yr 2   | Yes                 | Elective in yr 2 | No       | Yes                 |
| COALS   | RWFM-Wildlife Management Track                              | Yes              | Take in yr 2   | Yes                 | Yes              | No       | Yes                 |
| COALS   | RWFM-Aquaculture & Fisheries Mgmt Track                     | Yes              | Take in yr 2   | Yes                 | Yes              | No       | Yes                 |
| COALS   | RWFM-Natural Resources Mgmt and Policy Track                | Elective in yr 2 | Yes            | Yes                 | Elective in yr 2 | No       | Yes                 |
| PHSC    | Pharmacy DV track - not yet developed                       | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| PHSC    | Pharmacy HPR track - not yet developed                      | Yes              | Yes            | Yes                 | Yes              | Yes      | Yes                 |
| TAMUG   | Marine Biology (MARB)                                       | Yes              | Yes            | Yes                 | No               | Yes      | Yes                 |
| TAMUG   | Marine Fisheries (MARF)                                     | Yes              | Yes            | Yes                 | No               | Yes      | Yes                 |
| TAMUG   | Coastal Environmental Science and Society (CEES)            | Yes              | Yes            | Yes                 | Elective         | Yes      | Yes                 |
| TAMUG   | Oceans One Health (OOH)                                     | Yes              | Yes            | Yes                 | No               | Yes      | Yes                 |