Reply to the Curriculum Council Questions about BS Earth Sciences major (from Bob Duncan):

1. This is a large and complex program. Who will oversee it? Please specify the roles of directors, chairs, curriculum committees, etc. in overseeing the program, performing required program assessment, planning curriculum, admitting students, helping Earth Sciences students to find research or internship placement, etc. Please specify FTE required and budget sources for this FTE.

The Associate Dean for Academic Programs has oversight for delivery, assessment and evaluation of the undergraduate majors, Earth Sciences and Environmental Sciences, in the new College. The head advisor for the Earth Sciences major is a Geosciences faculty member who is compensated (0.1FTE) for coordinating instructional assignments and schedule of courses. A professional faculty advisor (0.5FTE) has been budgeted (see proposal and B&FP review) initially (first 5 years) for advising majors, coordinating with community college advisors and transfer students, and matching students with faculty for research experiences. Program advising staff in Environmental Sciences, which will be delivered by the new college, has recently been increased and will share in developing an internship program of off-campus partners (agencies, NGOs, private sector) for both majors, similar to the Horticulture internship structure. This administrative structure will interact with faculty governance of the majors through an Instructional Programs Committee, composed of faculty discipline representatives (we have no departments), Student Services Director, head advisors of the undergraduate majors, and student representatives. This committee, chaired by the Associate Dean, is responsible for the annual schedule of courses, assessment of courses and programs, developing category I and II proposals, and curriculum revision.

2. What will COAS’s contribution be? A large number of COAS faculty who currently do not teach in an undergraduate program are listed as participants in this major. Will these non-teaching faculty in COAS have their FTE reallocated to teaching? We recognize that some of these details are likely to be included in the proposal to merge COAS and Geosciences, but we are unable to review this proposal without understanding where the people to do the work of this new program will come from.

COAS faculty will participate in the new major primarily through the senior year research experience (thesis or project option). A number of these faculty have taught and will teach required courses (ATS210, ATS320, OC331), which might increase in enrollments or number of sections each year, and existing electives, which have room to grow. It is incorrect to describe these faculty members as “non-teaching”; the standard appointment in COAS is 0.25FTE, on a 12-month basis, for teaching. This equates to 1.5 courses per year per faculty member. A small number of faculty have larger teaching commitments and levels of college support for this.

3. To continue this line of questions, where will the staff and FTE for the proposed 4 new courses come from?

The four new courses have been described as key components in content of the new Earth Systems option, or important skill development in field methods in existing majors/options. Faculty members have been identified to develop these courses, and will deliver these in the first offerings; MRM430 will be taught by new MRM Director Flaxen Conway (0.5FTE COAS appointment). The release time for these faculty to develop and teach these new courses will be covered by addition of new faculty positions (2FTE) (Provost’s initiative hires underway in Geovisualization and Regional Climate Modeling).

4. Current national advising standards (e.g., see NACADA) suggest a student-adviser ratio of 300:1, except when there are students with specialized advising needs, including international degree students, interdisciplinary students, undergraduate research students, and minority students, among other groups, in which case the ratio should be lower. Considering that your program will include all these groups and anticipates serving 160 students within 5 years, will a 0.5 FTE adviser be sufficient?

We are adhering to this standard, with 0.5FTE advisor for ~160 majors (estimated). Additional advising capacity for upper division research experiences comes from COAS faculty. (We have 5 years’ experience running an NSF-funded
summer REU program, and 2 years with an NSF-funded diversity program for undergraduates.) The internship program will be developed jointly with Environmental Sciences advisors.

5. What are the advantages to the students for their current options to change to “tracks” (not transcript visible), and their majors, some of which have professional standards, to change to options? We wonder if this move will in fact disadvantage the students. This point is raised in the liaison you received as well. Since it appears that the number of students you have been graduating has been over the required 20 per year in each major, would it be possible to run this well-conceived program as a “School of Earth Sciences” and keep the three proposed options as majors?

While one liaison respondent questioned the “demotion” of Geology or Geography from a major to an option, many more applauded the advantages of inter-disciplinary requirements and cohort activities in the integrated single major, with three (transcript visible) options. This has been our conclusion, too, from discussions with faculty who deliver other “Earth System” science majors at institutions like Stanford University, University of Michigan and Penn State University.

6. Program integration and collaboration: the proposal covers this for non-OSU locations. How (specifically) will this program collaborate with the related OSU programs, including Environmental Sciences, BioResource Research (BRR), Natural Resources, and any other programs with which there is either overlap or shared program goals?

Environmental Sciences major will be delivered by the new college, and program advisors for both majors will be co-located, serve on the same Instructional Programs Committee and report to the same Associate Dean. They will share the internship program. COAS is collaborating with CAg and COF in designing a “decision tree” website/software available to students and advisors who wish to explore career paths within the Division of Earth Systems. Hence, information about course requirements, options, tracks, minors, and potential career paths will be provided, and distinctions made between Earth Sciences, Environmental Sciences, Natural Resources and BioResource Research majors.

7. Liaison: Could you please address the thoughtful comments provided by Dr. Pat Muir, Director of the Environmental Sciences undergraduate program, in more detail? Also, please address overlap with existing courses, as specified by several of the liaison letters. In addition, the BRR interdisciplinary undergraduate major is a research-based major with options that include Water Resources, Climate and Biosystems Modeling, and Sustainable Ecosystems. There is considerable potential for overlap with your proposed program, and this proposal should be sent to BRR for liaison.

Head Advisor to the Environmental Sciences major, Dr Pat Muir, has been a regular participant in discussions about the new Earth Sciences major, and she has been an enthusiastic supporter of the proposal. For that reason our response to the liaison letter is brief. Generally, the new major (and its options) is distinct from Environmental Sciences and the BioResource Research majors in being more GEO-, OCE- and ATS-oriented and less ecosystems, and sustainable management, policy, economics oriented. We clarified the level of professional advising (0.5FTE of a 12-month position). We have re-written p.11 to more accurately describe the complementary (more) and competing (less) aspects of the Earth Sciences, Environmental Sciences and Natural Resources majors:

“While the content covered in the new Earth Sciences curriculum will have substantial overlap with OSU’s Environmental Sciences and Natural Resources undergraduate majors, the new degree will provide an Earth Science focus on the planet and its interconnected systems and will thus complement those programs. It will be primarily physical-chemical science-based, but with life science connections in several tracks, and exposure to social sciences interspersed throughout the curriculum. The Earth Sciences major will also be highly structured, with its emphasis on progression from introductory, systems-oriented courses, through concentration and cross-disciplinary courses, to synthesis experiences. The senior-year independent work requirement (through theses and internships in the Earth Systems option) is also a distinguishing element.”
Clearly, having both Earth Sciences and Environmental Sciences majors delivered by the same academic unit (new college) will lead to better distinction of pathways to potential careers, and collaboration (e.g., participation of all students in internships/research experiences and capstone course EAR498).

We should have sent the proposal to BRR, and will do so if this is really needed. However, we note that Dr Kate Field is both the BRR Director and the author of the Curriculum Council’s request to us for clarification (i.e., this set of questions). Hence, we do not see the relevance in sending a liaison letter at this point in the proposal evaluation, and hope that our replies to these questions serve that purpose.

8. Finally, we note that we have not yet seen the B&FP review for this proposal. This may be a system glitch, not a true lack.

We received this report, which asked for a minor revision in the contribution to library resources (electronic holdings and journal subscription). This amounted to Yr1 (change from $12.7K to $6K); Yr2 (change from $3.6K to $5K); Yr3 (change from $3.6K to $4K); Yr4 (change from $3.6K to $4K). We made those changes, sent to Academic Affairs for posting on the proposal site.