College of Science Budget Reduction and Strategic Realignment Planning
Interim Report for SABRRC, January, 2010

1. **Progress towards and outline of March 15th Report:**

The College Consultative Committee and an ad hoc Chair’s Committee provided reports on their discussions about College organization before the Christmas holidays. After discussion with the College leadership, the Dean provided the College a proposal with an outline of a structure and several questions or issues to be addressed about each part of that structure. The plan would move the College from 13 major units (including General Sciences) to 5 or 6 schools/departments and 2 programs/centers. Several of those units would have connections to other Colleges; the proposal has been circulated to the other Deans and Provost’s Council for their information. Of the proposed units, two would have somewhat less than 20 faculty (Physics and Applied Physics and the Statistics Program). There are strong programmatic and strategic arguments to maintain a clear identity for both.

The College has been asked to consider the proposal and determine by January 30th if the path represented there is appropriate. We would then work on the many details of structure and implementation that would have to be addressed if such an approach was going to work. I have included a copy of the short version of the proposal here for the committee’s information. The March 15th Report will discuss the final version of this proposal and any curricular or programmatic changes that need to accompany it. Those discussions are not complete yet.

2. **Progress on Budget Assessment and Planning:**

The College remains on target to meet our budget savings as outlined in our previous report. The actions recommended by the ACBSP came with a number of estimates of the savings that could be found through changes in departmental sizes and organization, reduction of the number of under-enrolled classes, elimination of some majors and minors, and consolidation of University shops. The budget allocations to units were made using a portion of these estimates.

The savings estimates were, of necessity, done at a fairly high, cross-university level. Such an analysis requires certain assumptions about practices and conditions in units. Given the complexity and diversity of units at OSU, it would be surprising if those estimates were precise for every part of the University.

The leadership in the College of Science has worked to do an objective, complete assessment of what cost reductions might be associated with the suggested changes. This analysis is provided not to argue with the need for reductions and change, but to provide an accurate assessment of outcomes so we can plan appropriately.

The ACBSP estimate of the savings from the suggested actions in the College of Science was $1.2M, $358K in the first year and $842K in the second. The College was assigned a budget reduction of $358K in FY10 based on those numbers. Our estimates are that the maximum savings we would see from those actions is about $315K over the
biennium, if those actions were fully implemented. Table 1 provides a summary of the savings in each area. Details of the analyses can be provided if that is helpful.

The savings that met the budget reduction target for this year of $358K did not come solely from the actions proposed. The College has taken a good part of the savings available through enforcing class size limits. The additional savings projected from these actions for the second year of the biennium ($862K) do not exist, based on the analysis we have completed. This suggests that those targets need to be revised and that sources for those savings, if they are still required, will have to be found by other avenues.

Table 1: Summary of College of Science Budget Reduction Targets and Calibration

<table>
<thead>
<tr>
<th>ACBSP Estimates</th>
<th>Department Size</th>
<th>Class Size</th>
<th>Major/Minor Elimination</th>
<th>Shop Consolidation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Year 1 Target:</td>
<td>63,000</td>
<td>270,000</td>
<td>none given</td>
<td>25,000</td>
</tr>
<tr>
<td>Year 2 Target:</td>
<td>567,000</td>
<td>270,000</td>
<td>none given</td>
<td>25,000</td>
</tr>
<tr>
<td>TOTAL:</td>
<td>630,000</td>
<td>540,000</td>
<td>none given</td>
<td>50,000</td>
</tr>
</tbody>
</table>

| College Estimates: Maximum Savings Estimate: | 57,756 | 230,089 | 27,348 | 0* |

| Reductions Taken FY10 | 63,000 | 270,000 | -      | 25,000 |

| Current Costs: | 413,956 |
| Savings Model 1: | 57,756 |
| Savings Model 2: | 30,456 |
| Savings Model 3: | 48,656 |

| Course size savings, average FY08 and FY09 Analysis: | 230,089 |

| Maximum Savings from Major/Minor: | 27,438 |
| Likely Savings from Major/Minor: | 22,000 |

| Current E&G Shop Budget: | 88,156 |
| Potential Savings: | 0* |

*The only E&G budget for shops is one technical position split between Chemistry and Physics. We expect to continue to require that position in a consolidation. The costs of operating the shops and other personnel costs are covered by charges, mostly to grants. We do support the efforts to find ways to share and consolidate shop functions and will contribute to those efforts as necessary. The target number might be less a budget cut than a required contribution to a shared facility.
Overview:

There have been numerous conversations through the Fall about organizational strategies for the College. These included a report by a College Consultative Committee led by Roy Haggerty, which considered 3-, 4-, and 5-unit models and a report from an ad hoc committee of chairs led by Henri Jansen that considered a model with eight units. The work of the chairs committee was informed by thoughtful contributions from a Life Sciences Committee organized by Theo Dreher and Andy Karplus. There have been proposals from Statistics and Science and Mathematics Education, as well as discussions with Agricultural Sciences, COAS, Pharmacy, Education and others. Those reports will be available on a companion web site to this document when it is formally released to the College.

I have reviewed these discussions and ideas and present below an outline of the structure I would like the College to discuss over the next month. This approach would move us from 13 major units (including General Sciences) to 5 or 6 schools/departments and 2 programs/centers. My thinking in this regard has been strongly influenced by the discussions of the College Consultative Committee on what issues need to be addressed in various approaches. The changes proposed here are not uniform across the College, but I believe that pursuing changes where there are not clear alignments of disciplines and curricula is not wise. I do expect that units facing more complex change and large student populations will need to see some allocation of resources to address issues of student advising and community. I also believe that there needs to be a commitment to those units dealing with major change to address issues of leadership and faculty positions as we identify the areas of most opportunity and challenge in the new units.

The discussions and changes I suggest here will provide the framework for making the case for allocation of the 25-30 positions the Provost and President have committed to build our programs in Arts and Sciences. If we can use these discussions on organization and change to identify new opportunities and partnerships (or existing ones we can build on) we will make a strong case for investments in the College.

I also recognize that if we consider new degrees, centers, or collaborations, that we may need to give up some things we are currently doing to make sure there is enough faculty time and enough resources to pursue those new opportunities. I expect us to do a realistic assessment of what it would take to complete the proposed changes and pursue any new ideas we identify.

I outline the major changes and issues to be addressed in the first three pages here. I note that some of the issues listed are there to encourage an examination of strategies to build strong links between COS units and units in the other three divisions of the Strategic Plan. The document following the first three pages discusses some of the observations of the two committees and addresses some of the considerations that led me to these recommendations. The discussions following from today will be focused at the unit level and will include conversations with partners inside and outside the College. I will ask the units in the College to provide comment on this plan by January 30th. I will also discuss with the Provost this proposal in the next week to see if it meets the intention of the organizational guidelines.

The principal divisions proposed for the College include five major units (possibly six pending outcomes of the life science discussions) and two centers or program-type organizations. I am asking units to identify by January 30th if what I outline here is a workable plan to guide our discussions on organization and if there are missing issues that should be addressed or opportunities that should be considered. The proposed units, and issues to be addressed for each unit, are discussed below (it is not expected that those issues will be resolved by January 30th).

I should note that the language used here to describe units is somewhat imprecise and terms are intended as placeholders until the completion of discussions by units affected. I have used here the term “School” when I am suggesting an association between currently independent units. I use “Department” when the unit is a close fit to a currently existing Department. “Program” is used to indicate a unit that has curricular, research, and consulting responsibilities and that includes people from multiple colleges. “Center” is used for a unit that has principally a research mission. These need not be the terms we apply to these organizations in their final form.
Department of Mathematics: This would be principally the current Mathematics Department but would also provide office and administrative support for the Statistics Program. The Department should:

- Work on the location and staffing of a joint office with Statistics.
- Develop a research center or institute focused on Applied Mathematics and Computational Science; these discussions should include appropriate representatives from Physics, Earth Sciences, Chemistry, and the Life Sciences and appropriate units across campus.
- Review and revise delivery of lower division mathematics courses.

University Statistics Program: This would build on the existing Department supported by Agriculture and Science, but would include faculty from Business, Forestry, and HHS as adjunct and partial FTE appointments.

- The program will be charged with developing a governance and accountability model and commitments from partner Colleges.
- The program will consider how to encourage faculty delivering courses with substantial statistical content to be adjunct members of the program or to participate in the program.
- The program will review and revise the consulting services offered to campus to take maximum advantage of the faculty, graduate students, and capabilities of the Survey Research Center.

Department of Physics and Applied Physics: This would be the current Physics Department, but would share technical and staff support functions with Chemistry.

- The Department will identify a strategy for incorporating either biophysics or earth physics (atmospheric, ocean, or solid earth) into their long-range planning.
- The Department will consider how to strengthen applied physics through both curricular planning and development of adjunct relationships in areas like biophysics, mass spectrometry, or earth physics.
- The department will help lead discussions, with Mathematics, on the creation of a Center for Applied Mathematics and Computational Science.
- The Department will complete its development of smaller group introductory physics.

School of Earth and Environmental Sciences: This would include the Geosciences Department and the undergraduate Environmental Sciences Program.

- The units will identify an appropriate management structure for the various programs and complete a plan for the undergraduate curricula.
- The School will explore a formal association with COAS, ranging from joint degrees to the possibility of being a unit within COAS. The goal of the discussion is to clearly connect the School to the Earth Systems Division.
- The discussions should consider a B.S. degree completion path like the Earth Sciences option that used to exist in the General Science option. There are a number of students in the College who find them selves looking for a way to complete their undergraduate studies. Earth and Environmental Sciences might provide a good place for them to do that.
- The unit will develop a plan for graduate degrees and development of appropriate adjunct faculty, if those are not addressed in the discussions with COAS.

School of Chemical Sciences: This would include the Department of Chemistry, but charges the Department to explore a formal association, under a school umbrella, for units at OSU with a strong chemistry focus. Such an association might range from a virtual presence to joint appointments to shared degree programs.

- The Department should lead discussions on the possibility of a School of Chemical Sciences (or other strategies) to integrate chemists at OSU and to increase the visibility of chemistry research and graduate programs. Units to be included in the discussion might be EMT, Biochemistry, and Pharmaceutical Sciences.
- The department will develop a formal strategy to develop a focus on Chemical Biology in the Department.
- Options in Biochemistry and Advanced Biochemistry should be aligned with a degree in Biochemistry in conversation with the life sciences units.
- The Department should review planning and management in the Department to move away from the internal division structure.
The Department should identify a strategy to formally develop and support the mass spectrometry facility

The leadership of the Department will work with physics to finish the joint technical and staff support structure

School of Life Sciences: “School” here is a placeholder pending a discussion led by the units involved as to whether a single department, with appropriate internal structure, or two separate departments in the life sciences would best serve our students and our research aspirations. This is the most complex change in the College and the most important. The unit(s) will include Zoology, Biochemistry and Biophysics, and Microbiology and would have responsibility for the programs currently in Biology and General Science. Some key issues to be addressed by the members of the community are (many of these would be resolved later in the year):

- Identify a one or two department strategy as the best path
- Determine the internal management structure for the unit(s)
- Develop a plan for advising and the development of student communities for the substantial undergraduate population
- Review and revise the undergraduate curriculum, retaining identifiable Microbiology and Biochemistry degree paths. The Biochemistry degree should be reconciled with Biochemistry and Advanced Biochemistry options in Chemistry.
- Develop a degree completion path for students in the health-related pre-professional tracks that want a science-based program. This should include discussion with Pharmacy on the appropriate location and responsibility for advising for the pre-Pharmacy majors
- Consider how to coordinate contributions to the undergraduate life science curricula from units associated with other Colleges, particularly the plant science units likely to emerge from the organizational discussions in Agricultural Sciences
- Pursue, as a pilot study, one or two cross-unit Ph.D. degrees. Appropriate areas might be Microbial Sciences, Ecology, or Biomedical Sciences
- Identify the role of M.S. degree tracks in the life sciences, particularly areas where an M.S. would be an appropriate choice for a particular professional career

Center for the Study of STEM Learning: This would comprise faculty from Science and Mathematics Education, and faculty from Education and other Colleges with interests in research on STEM learning across the lifespan. It would be solely a research entity. Curricular work in education would be coordinated through a structure in the College of Education; members of the center would have academic homes in departments, which could include departments in Education, Science, and other units. Planning for the Center and for Science and Math Education will include:

- A steering group from SMED and Education to work on curricular and center planning, bringing in appropriate other people as necessary
- Development of a model for the center and identify faculty members at OSU with interests and expertise in the area
- Work with Education to identify how undergraduate and graduate degrees will be managed
- Identification of issues to be worked out on faculty assessment, splits of appointments, and work assignments, with particular attention to the split of efforts between Departments and the Center

Dean’s Office: The Dean’s Office will be charged with a number of changes related to the organizational changes in the College and creation of the Division of Arts and Sciences. These include to:

- Work with the life sciences units to plan for advising transitions resulting from these changes.
- Define the membership of the College Leadership Council (the equivalent of the current chairs and directors group) to create a group that is suitably representative of the intellectual interests, curricula, and programs in the College. This group would NOT simply be the chairs/heads of departments.
- Consider opportunities to develop joint programs in advising, licensure oversight, curricular management, and proposal development and writing at the Division level
- Review alternative models for staffing and locating the advising and administrative functions of the Dean’s office
- Develop, with the OSU Foundation, a communication plan for alumni and donors