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Discussion of the pending split of the College of Engineering and Science

In a recent email from President Clements describing his update to the Board of Trustees, the proposed college reorganization structure was provided (<http://blogs.clemson.edu/2020forward/files/2015/07/proposed-model.jpg>). This has been reinforced by the formation of a “Reorganization Preparation Team” described in recent emails. It was disheartening to see the new structure will disband one of the more unique aspects of our college structure, a combined college of engineering and science. Our apologies to our colleagues in other colleges, but this letter only discusses the potential split in the College of Engineering and Science. We are all faculty within the department of Environmental Engineering and Earth Sciences and have combined decades of experience within the College of Engineering and Science. This is a unique department in a unique college. Due to the multidisciplinary nature of our department, we recruit students from a variety both physical science and engineering backgrounds. In many cases, the students are drawn to the combined College of Engineering and Science which is a stark contrast to traditional programs within separate colleges of engineering or science.

It is a dated and myopic view to think of science and engineering in black and white terms. Instead they represent a spectrum from basic to applied sciences. Thus having a unified College of Engineering and Science is ideal. Research is moving towards more interdisciplinary approaches and some of the greatest successes are coming from these broad teams. Our 2020Forward plan has a large emphasis on research and graduate education with the hope of improving our academic reputation. Within a college that combines engineering and sciences, we had a chance to give students a truly interdisciplinary and/or multidisciplinary experience that will prepare them for the complex systems they will encounter after graduation. With the new college organization, we as a faculty must work harder to maintain and grow collaborations across the new colleges. The hope is that these colleges will represent only administrative units with little impedance to any collaborative research and teaching efforts, but even then there will undoubtedly be increased barriers to collaboration (e.g., generation of redundant, opaque, and perhaps conflicting administrative requirements between Colleges).

That being said, based on our experience within this college, we are sad to acknowledge that thus far we have failed in our efforts to fully bring science and engineering disciplines together. There are some notable attempts. Some of our research centers are truly interdisciplinary and we have three departments which represent small microcosms of the combined College of Engineering and Science structure: Environmental Engineering and Earth Sciences, Materials Science and Engineering, and Engineering and Science Education. We can also look to other institutions for examples. The College of Chemistry at the University of California – Berkeley has only two departments: Chemistry and Chemical Engineering and these are arguably the strongest departments in their respective fields.

However, to truly bring together engineering and science, we must have equal respect for the sciences and engineering. This is not a simple task because we must assign value to each discipline and there is no single metric that can be used for this comparison. A considerable effort must be made to demonstrate the value that each discipline brings to the overall research and educational effort. Such an effort requires an investment from the university administration and commitment from the faculty to promote multidisciplinary efforts. While we can hope there will be few barriers and equal respect for all disciplines, the fact that the current college will be split is an indication we are going in the wrong direction. As a subtle indication of the general disregard for the sciences, the new college is tentatively

named the “College of Engineering and Computing” despite the fact that the three aforementioned departments will remain within the “engineering” college. A more appropriate name such as the *College of Engineering and Applied Sciences* may salvage the spirit of the unique aspect of our current college structure.

We understand that there are a variety of underlying pressures leading to the reorganization. We cannot help but wonder, however, whether the money which will be spent reorganizing colleges and creating a new one could be directed to help address these underlying pressures and allow the spirit of our current model succeed? Given Provost Jones’ email to the University on August 21st and the formation of the “Reorganization Preparation Team”, it is clear that the college reorganization is imminent. Looking forward, can we incentivize collaborations across departments in the College of Engineering and Sciences, better yet across the entire university? Can we build upon the lessons learned from the failure of the combined College of Engineering and Science to produce a more interdisciplinary, respectful, and productive culture across the campus as we move through the process of reorganization? We should work to remove any barriers that hinder collaboration across colleges and even departments within colleges. A good first step will be to develop a culture across the University which fosters respect for all disciplines, acknowledges success based on the metrics relevant to that discipline, and provides incentives for cross-discipline collaborations rather than investments within the disciplinary silos of a College. This will elevate the value of multidisciplinary research and teaching across the Clemson campus, may help to reduce hindrances to collaboration, and reinforce the fundamental concept that all departments are valuable regardless of discipline.

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