

The Department of Chemistry recently voted in favor of a merger with the School of Biological Sciences (SBS), and the SBS faculty are will vote on whether or not to move forward with the expedited implementation phase of the proposed merger. A vote will follow the implementation process. Regardless of the outcome of the SBS faculty vote, the report of their vote to the Provost must be accompanied by a document discussing how the proposed merger aligns with at least four of eight possible rationales for proposed reorganization. The Chemistry Department must also produce a similar a document.

**The eight possible rationales are:**

1. Improve operational efficiencies
2. Sharpen strategic focus to better achieve goals
3. Clarify unique value and competitive distinction
4. Improve quality
5. Improve the work experience and bring out the “better” in faculty and staff
6. Empower academic leaders by providing greater support and accountability
7. Take advantage of new ways to learn, teach, and work
8. Take advantage of new opportunities for knowledge creation and knowledge transmission

We have chosen to address the first four of these, as addressing their pros and cons affords insight into this proposed merger. The remaining four rationales could be addressed without requiring a merger, although these goals will undoubtedly serve as touchstones during the implementation process.

**Improve operational efficiencies**

**Pros:**

The School of Biological Sciences and the Chemistry Department have the vast majority of pre-health and allied health professionals enrolled in their programs, and also provide a number of courses to students in the undergraduate phase of the six-year MD program, along with other service teaching. A merger would thus allow efficiencies in recruitment, advising, and curriculum offerings with the goal of better serving these students.

Chemistry and Biology research and laboratory teaching activities have similar space and infrastructure requirements. Shared equipment and facilities would allow a more efficient use of limited resources. We have already converted the 600 MHz NMR into a shared facility, managed and run by a combination of SBS and Chemistry faculty and staff. This cooperation is a model for how a reorganized unit would proceed with acquiring and running research resources. Pooling resources also would allow us to expand our capabilities in ways that might otherwise be out of reach. A state-of-the art facility for small molecule and protein mass spectrometry is an attractive capability that could be built on top of resources that are already available in our units.

Biology and Chemistry require similar laboratory space and specialized teaching spaces. Housing these spaces in one unit should allow for the more efficient use of these resources.

**Cons:**

Increased efficiencies are in part speculative. Limited space and facilities are not currently an issue for SBS. Current shared NMR and mass spec research facilities have been put into place quite efficiently without a merger, and future shared research facilities could come from similar grass-roots efforts. How budgets will be finalized could give some insight into efficiencies.

### **Sharpen strategic focus to better achieve goals**

A significant amount of service teaching for the health sciences schools will be provided by the reorganized unit. This will enable a stronger and more effective partnership in this endeavor. In particular, while there already are some joint appointments between SBS and the health science schools, a merged unit could increase these, for example by developing a focus area in small molecule therapeutics or computational bioscience. Cluster hires and joint recruitments of personnel with Hospital Hill that participate in research in focus areas such as these are an exciting possibility.

A reorganized unit allows the recruitment of students into a program that would afford more options and clarity of purpose for incoming students. Students seeking a degree in biology or chemistry often minor in the other field or dual-major in chemistry and biology. A reorganized unit will be able to better recruit these students. Having shared advising structures will also allow better retention of these students. Jointly addressing course scheduling should allow students to graduate in a timely fashion. Recruitment, retention, and graduation of students is a strategic goal of the University and the unit.

Biology and Chemistry researchers typically seek funding from similar sources, e.g., NSF and NIH. Working together would improve funding success by encouraging collaborations between Biology and Chemistry faculty, development of shared resources that support research, and hires of research faculty that bridge the Biology and Chemistry disciplines, and therefore promote collaboration. These could for example include faculty that can help us take advantage of funding opportunities in small molecule therapeutics, biosensors, or computational modeling. A merged unit also would provide a larger set of experienced faculty to provide mentoring and internal peer review of grant applications.

### **Cons:**

It's not clear to all involved that a merger is necessary to achieve the desired synergies or collaborations.

### **Clarify unique value and competitive distinction**

#### **Pros:**

Biology and Chemistry have growing enrollments, and must also adapt to a rapidly evolving research and educational landscape. Our graduates have goals that fall into three broad categories; professional school in the human or animal health sciences, immediate employment in industry or academia, or graduate school to obtain the PhD or MS degree. The proposed merger would provide an opportunity to develop signature programs that would help our graduates achieve their goals now and far into the

future. If properly marketed, such programs should allow us to draw from a much larger regional share of college bound students.

A reorganized unit would be able to approach a larger pool of companies that hire our graduates. This would allow for better placements of our students, as well as providing a basis for development of a regional philanthropic base supporting the preparation of students for careers the life and health science space (either in research or education). The strategic mission “Lead in the Life and Health Sciences” would be well-served by the cultivation of these philanthropic pools.

**Cons:**

There are some fundamental differences between Chemistry and SBS (such as recruiting, focus, and bylaws) that could detract from the fundamental effort of SBS to lead in the Life and Health Sciences.

**Improve quality****Pros:**

The overall rationale for this merger derives from the significant overlaps in the undergraduate populations Chemistry and SBS are involved in educating, in our faculty, graduate and undergraduate research activities with their associated space and infrastructure needs. These areas of overlap can be leveraged in a merged structure to improve operational efficiencies through shared services and facilities, to sharpen strategic focus through a shared vision for education and research, to improve our competitiveness in research and in recruitment of both faculty and students, and through all these and more, to improve the quality of the student and faculty experience.

**Cons:**

Many units on campus teach overlapping groups of students, but the efficiencies that might occur from reorganizations must be weighed against the distinct cultures of those units and problems that would arise from their fusion. The Biology and Chemistry departments at UMKC have been assembled in very different ways so their merger may be difficult for each, especially given the uncertainty of how budgetary issues will be addressed.

**Further Information**

Concerns will need to be addressed if the merger is implemented on issues, including hires and salaries in Chemistry, adjusting the curriculum for Chemistry degrees, budgetary issues, and needed adjustments to bylaws and the P&T process.

A longer study document prepared for the SBS FAC is included and will be furnished to the Implementation Committee.