

SBS Reorganization Study Document

Per the charge by the Provost and Interim Chancellor, dated Feb 19th, 2018, a number of factors have led the Provost to suggest various reorganizations at UMKC. The first specified was:

Move #1: Merge Department of Chemistry into the School of Biological Sciences

This move relates to all 8 considerations listed above

Many students dual major and/or take courses across these units

Change name to the "School of Natural Sciences"

Vote by faculty whose tenure-lines are affected and voting faculty in departments that merge or move

On March 15th, 2018, the CAS Dept. of Chemistry voted to merge into the School of Biological Sciences, without an extended study process, I was informed of this vote by Faculty Senate Chair Linda Mitchell on the following day (March 16th). At an SBS Faculty meeting, a timeline was proposed which would complete our votes and reports regarding this reorganization by approximately April 20th, 2018.

The expedited process for merger would skip the formal "study period", during which the two units (Chemistry and SBS) would work out the 8 considerations for a merger laid out in the Provost's charge (these will be detailed later). This greatly shortens the process of a merger. As the Provost has already determined that the Chemistry and Biology reorganization is a priority because it touches, in her opinion, on all 8 criteria- and because the Chemistry faculty have voted to proceed with the merger without this study process- the Chair of the SBS Faculty now has two tasks:

- 1) Holding a vote on the reorganization, and reporting the results back to the Provost
- 2) Preparing a report on the 8 criteria for submission to the Provost- this is mandated even if the result of the vote is that SBS does not want a merger.

After this, the Provost will make a recommendation which moves to the Faculty Senate, and then a final decision on this reorganization will be made- assuming it is positive, an implementation committee (consisting of Faculty from both units, the Dean's in an ex officio capacity, and likely members of University administration to provide information as required) will work out details of how the reorganization will take place. This implementation committee will work closely with faculty governance in both units to ensure that their efforts reflect the will of the faculty.

At this point, SBS has a scheduled special faculty meeting on March 20th, 2018, to discuss the reorganization. A vote will likely follow. The Chair has also solicited input from the Faculty regarding the 8 points.

Eight Criteria for Reorganization

Per the Charge from the Provost, the 8 points are:

- i. Improve operational efficiencies*
- ii. Sharpen strategic focus to better achieve goals*
- iii. Clarify unique value and competitive distinction*
- iv. Improve quality*
- v. Improve the work experience and bring out the “better” in faculty and staff*
- vi. Empower academic leaders by providing greater support and accountability*
- vii. Take advantage of new ways to learn, teach, and work*
- viii. Take advantage of new opportunities for knowledge creation and knowledge transmission*

Reorganization Analysis

The rest of this document will address how the SBS/Chemistry reorganization addresses these 8 points from the perspective of the Faculty at SBS. When possible, it will incorporate information from SBS staff. Pros and Cons, if available, will be listed. “Pros” are defined as strengths and opportunities, while “Cons” are defined as weaknesses and threats. This report is organized by noting properties of a joint unit, and these properties are examined from the perspective of each category. A set of three summary tables is provided- these take each item and display the criteria addressed by each property; the first table is a summary of Pros and Cons, by criteria; the second table addresses Pros, and the third addresses Cons. It is worthwhile to note that the timelines and relative strength/weakness of these items is variable. That is, while they are addressed as essentially equivalent in this draft of the report, some items are potentially immediate issues that would need to be addressed during implementation, and others might be longer-term gains that might occur well after the reorganization would have occurred.

The contents of this report have been, in part, used to create a much shorter document consisting of a rationale for a merger based on the “8 principles” from the Provost.

Note: Data included in this document is from the UMKC RooPlan data warehouse, or from RPKgroup except where otherwise specified.

Properties of a Joint Unit containing both Biological Sciences and Chemistry

Property One: A Unit which combines Biological Sciences and Chemistry has a very similar population of incoming students; but there would be room for growth in both populations

Criteria:1,2,3,8

Pros: Applicants appear to be coming from some of the same feeder schools for both Chemistry and Biology (below), though there are some areas for growth in both groups. Looking nationally, there are applicants from an overlapping group of states outside of Missouri and Kansas (California, Nebraska, Oklahoma, and Illinois). This would allow efficiencies in recruitment and strategic growth in recruitment. It also might be possible to determine where online offerings would be most useful for continued growth. It is highly plausible that Chemistry and Biology have previously been competing for student applicants, and this would end.

Cons: None noted.

Top Feeder Schools, Biology Students

School of Biological Sciences Top 15 Feeder Schools

First Time College Applications

FS2015		FS2016		FS2017	
Park Hill Senior High School	11	Park Hill Senior High School	13	McCluer North High School	10
Park Hill South High School	7	Liberty North High School	10	Seckman Senior High School	10
Liberty High School	7	Liberty High School	10	Marquette High School	9
J C Harmon High School	6	Hazelwood East High School	9	Blue Springs South High School	8
Parkway South High School	6	Raytown High School	9	Liberty High School	8
Lees Summit West High School	6	Timberland High School	8	Raymore-Peculiar High School	7
Oak Park High School	6	Ruskin High School	8	Hazelwood West Senior High	7
Platte County R-III High Sch	5	Francis Howell Central	8	Olathe Northwest High School	7
Carnahan HS of the Future	5	Lees Summit West High School	8	Jefferson City High School	7
North Kansas City High School	5	McCluer North High School	8	Cristo Rey Kansas City	7
Hazelwood Central Sr High Sch	5	Blue Springs South High School	8	Lees Summit North High Sch	7
Blue Springs High School	5	McCluer High School	7	Lincoln College Prep Academy	6
Raymore-Peculiar High School	5	North Kansas City High School	7	Lees Summit West High School	6
Rock Bridge High School	5	Fort Zumwalt West High School	7	Holt High School	6
Parkway West High School	4	Monett High School	6	Battle High School	6

Top Feeder Schools, Chemistry Dept.

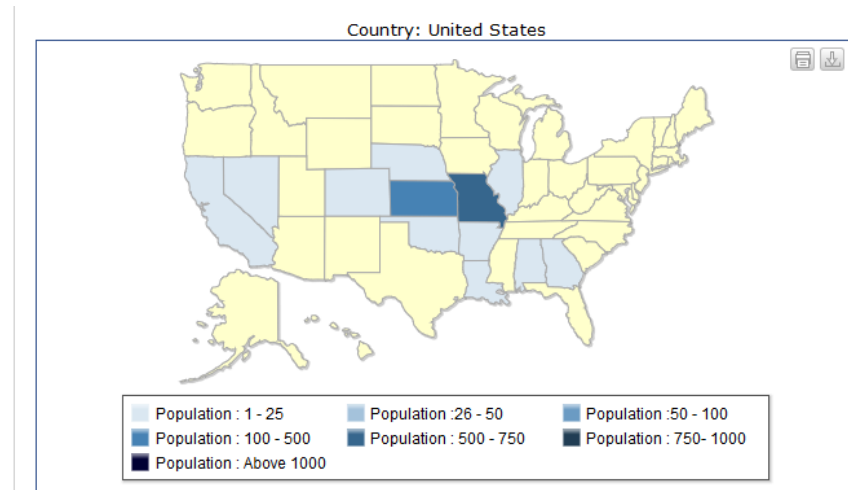
Dept. of Chemistry Top 15 Feeder Schools

First Time College Applications

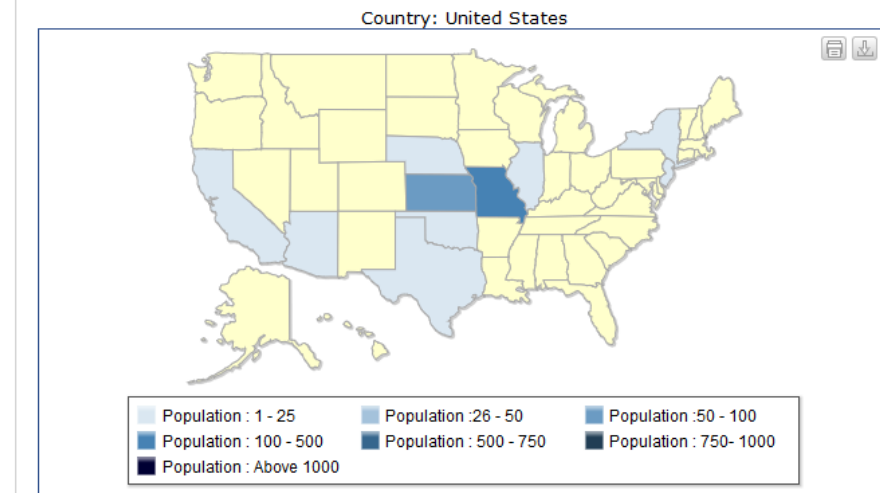
FS2015		FS2016		FS2017	
Lindbergh High School	3	Raytown High School	3	Nixa R-11 High School	3
Raytown High School	3	Shawnee Mission East High Sch	2	Sumner Academy Arts & Science	3

Blue Springs South High School	2	Park Hill Senior High School	2	Clinton High School	2
F L Schlagle High School	2	Blue Springs South High School	2	Washington High School	2
Park Hill Senior High School	2	Platte County R-III High Sch	1	Park Hill Senior High School	2
Liberty High School	2	Salina High School Central	1	Hazelwood Central Sr High Sch	2
Oak Park High School	2	Timberland High School	1	Hickman High School	2
Kearney R-1 Sr High School	2	Fox C-6 High School	1	Kearney R-1 Sr High School	2
Blue Springs High School	2	Rock Bridge High School	1	Oak Park High School	2
Lees Summit North High Sch	2	Lindbergh High School	1	Liberty North High School	2
J B Conant High School	1	Lincoln College Prep Academy	1	Raytown South High School	2
Central R-3 High School	1	Adair County R-I High School	1	Lees Summit Senior High School	2
Center Senior High School	1	Glendale High School	1	Wyandotte High School	2
Lincoln College Prep Academy	1	Cor Jesu Academy	1	Central R-3 High School	2
J C Harmon High School	1	J C Harmon High School	1	Thomas Jefferson Ind Day Sch	2

Geographic Origin, Biology Students, FS2017



Geographic Origin, Chemistry students (FS2017)



Property Two: Similar research goals are set within Chemistry and Biological Sciences

Criteria: 2,4,5,7

Pros: SBS and Chemistry researchers have historically been working to get funding from similar sources (NSF, NIH, and others). There is good reason to believe that working together would allow improved success in research funding- particularly by creating a larger unit with a more set “track record” on certain types of funding, and better research infrastructure. A broader net of experience (STTR/SBIR funding, R15s, AHA and other funding) across both groups could allow a focus on faculty development, and provide a larger set of colleagues for peer review.

Cons: None noted.

Property Three: A unit containing Biological Sciences and Chemistry would be a good participant in the UMKC Health Sciences District

Criteria: 2,3,4

Pros: At the moment, the UMKC Health Sciences District is bounded by the health sciences schools that make up that campus. However, combining Biology and Chemistry, a large amount of service teaching for these schools would be placed within the merged unit. This would make the new school a better participant in, and partner for, the Health Sciences District. While there are some joint appointments already (with SOM and other units), a new unit could strategically examine the links with these units (especially Pharmacy and Dentistry) in light of the new unit focus.

Cons: It should be noted that, at the moment, there is not a lot of focus on SBS or Chemistry within the Health Sciences district partners, either for research or professional education. This resistance- real or imagined- would need to be overcome for the work to be successful, and may require additional longer-term investment in hires.

Property Four: A combined Biological Sciences and Chemistry unit would be a regional asset for the Animal Health Corridor

Criteria: 2,3,8

Pros: Companies in the Animal Health Corridor are hiring our graduates, for positions in both biology and chemistry. A joint unit could better analyze and meet the needs of these companies. Right now, efforts to do so are split across two units with competing goals. It is also highly likely that research partnerships can be formed with these companies- they often have goals that stretch across both biology and chemistry.

Cons: None specifically, though ideally both educational and research advisory boards for the new unit- consisting in part of participants from across the region, pulled from quite a few companies.

Property Five: A combined Biological Sciences and Chemistry unit would be a more attractive target for recruiting researchers

Criteria: 4,5,6,8

Pros: As discussed later, both Biology and Chemistry are growing enrollments and SCH. This will eventually necessitate hiring to meet educational goals. A combined unit can sharpen the focus for these hires, make more attractive offers for strategic hires with their combined resources, and can better plan for recruitment of hires. An added benefit is that, especially when recruiting for hires to teach service-taught classes, the unit can potentially recruit faculty who specialize in developing courses more tailored for the needs of these students. Potential for cluster hires and recruitment of personnel that can participate in research with Hospital Hill is also a possibility.

Cons: None noted.

Property Six: Biology and Chemistry already have a similar advising methodology for students, and have numerous students who double major or minor across the units

Criteria: 1,2,3,4,7,8

Pros: As note earlier, Chemistry and Biology are often competing for students currently- even though our students have similar sets of goals that can be broken down into three major areas; students who want to go on to professional school (Medicine, Pharmacy, Dentistry, Nursing, Vet school, etc.), those who want to get jobs in industry (before or after obtaining a Masters degree), and those who want to get Ph.Ds (generally to go on to faculty or research positions). We know that a number of students are already doing double majors, or are obtaining minors across the two units. Substantial barriers exist for these students currently- despite similar advising goals- because they are handled between two units. Additionally (as discussed later) the additional Gen Ed requirements currently existing in the College can be a barrier for these students to obtaining a dual degree. By focusing advising resources, we can avoid having two sets of advisors working with a student, and this increases efficiency- especially as both Biology and Chemistry are experiencing strain on advising resources with increased enrollment numbers. While this point is predominantly addressing the Undergraduate population, it may also be true that a combined unit might be more appealing for MS offerings.

Cons: None noted- though, see the later discussion in re: Chemistry BA/BS majors and College Gen Ed requirements.

Property Seven: A combined unit would be better able to coordinate student schedules to make effective use of laboratory space, leading to better graduation rates

Criteria: 1,3,7

Pros: Similar to point six above, but it's worth noting that Chemists and Biologists take a lot of the same courses, and in combination would be the largest (or, potentially second largest behind SCE) STEM-focused unit on campus. This creates inefficiencies when working out student schedules across two units. Ideally, the combined unit would be able to more efficiently schedule for all students, and better

predict the need for specific classes or sections by tracking all BA/BS major maps across Chemistry and Biology. This should make it easier for students to get the classes they need- and predict which classes might need to be offered in on-line, night, or weekend formats. This should improve retention and graduation rates.

Cons: None noted.

Property Eight: There are differences in salaries for graduate students and faculty

Criteria: 1,4

Pros: None noted, though see discussion below.

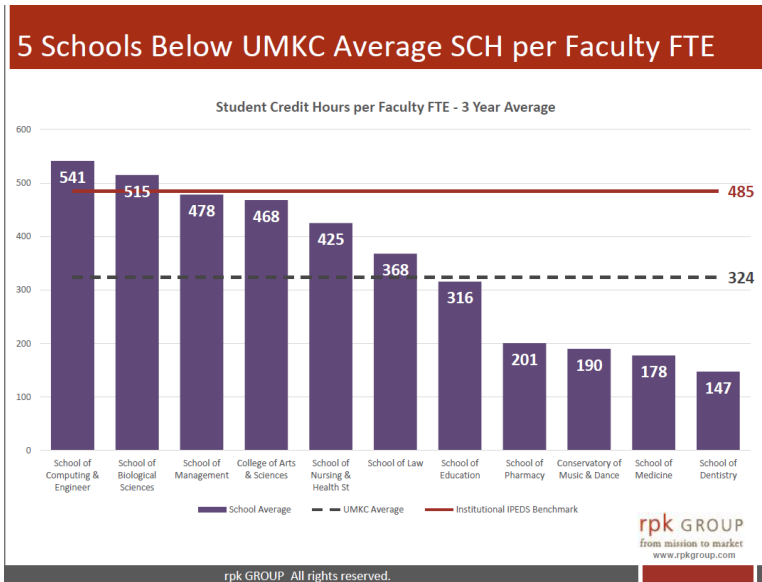
Cons: It has been noted that there are differences in salaries across the two units for faculty, and that graduate student stipends are different, as well. This is cause for concern. During implementation, a study should consider what (if any) differences exist and develop a long-term plan to address this, especially for hiring and recruitment of faculty. Differences in graduate student stipends are not solely an issue for this merger- at the moment, this is a University-wide issue- so there is an opportunity here to study and address the problem as part of the implementation process. These differences and solutions, however, will need to be addressed in implementation.

Property Nine: Both units have similar fill rates in classes (with most at 75% capacity or greater) and similar SCH/FTE leading to similar needs for faculty and students

Criteria: 1,2,3

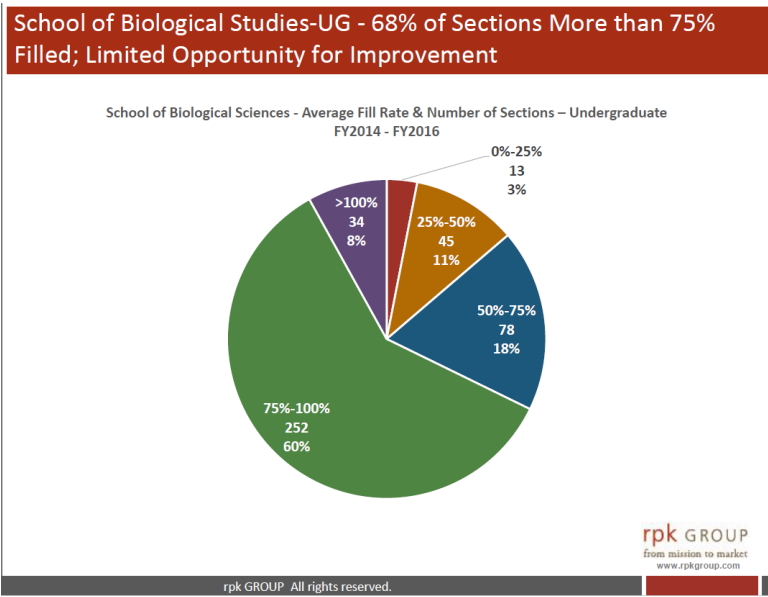
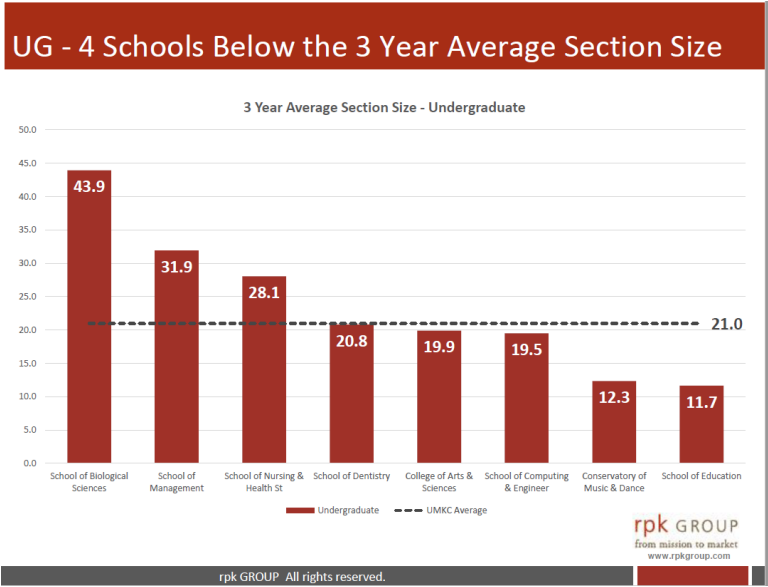
Pros: While the graphs below mostly deal with Biology, it's notable that fill rates in Chemistry are quite high (and there is stress on those classes during the renovations in particular). Therefore, Chemistry and Biology have similar needs to address because of this- both for faculty, management of sections and time, and growth. As the RPKgroup data notes, there are three ways to increase revenue by re-allocating resources; increasing class throughput, increasing SCH/FTE, or by increasing the average class size. Given the similar properties of Biology and Chemistry, increasing SCH/FTE (without changing class size) is really not an option for either group (something that may, for example, be true in other areas of the College). Therefore, the two groups share a similar challenge- which means, they can architect a similar solution.

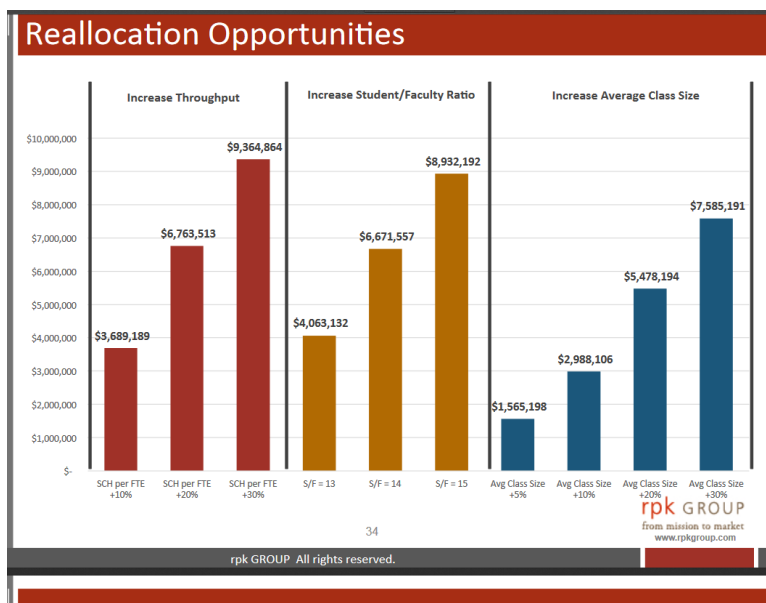
Cons: As noted, if increased revenue is desired, there are restricted ways to do this. However, this is true for either Biology or Chemistry separately, so it's not a challenge caused because of the reorganization.



School of Biological Sciences Observations

- Total faculty FTE declined 10% over the 3 years
- Part-time faculty is minimal at 1.3 FTE average
- SCH remains consistent over the 3 years
- Average SCH per Faculty FTE average is 515, above the UMKC average of 324 and benchmarking group
- Average Student/Faculty FTE ratio is 17.4, exceeding UMKC average of 10.5
- Little opportunity for productivity improvement





Property Ten: Both units make use of similar space and occupy parts of the same buildings, with recent and pending renovations

Criteria: 1,4,6

Pros: SBS and Chemistry both have space in the Spencer Chemistry Building, though Chemistry also occupies part of Flarsheim, and Biology occupies the Biology building. Similar issues (fume hoods, etc.) for spaces are a notable feature for research and teaching labs. Handling of parcels, etc. tend to be similar. A merged unit can make better use of these spaces, plan for hires long-term more effectively, and consider how faculty can be positively affected by joint use of space better than a unit that has to consistently negotiate between two Deans for these issues.

Cons: None.

Property Eleven: Both units have need of similar, expensive equipment that needs to be maintained with service contracts and trained personnel, and a combined unit would be better able to handle these needs

Criteria: 1,4,6,8

Pros: Shared equipment can be more easily planned for and maintained over both units if there is a central Director of Research. Inroads into shared equipment have already been made.

Cons: None.

Property Twelve: Both units have been historically poor at fundraising

Criteria: 2,3,6

Pros: See “cons” below

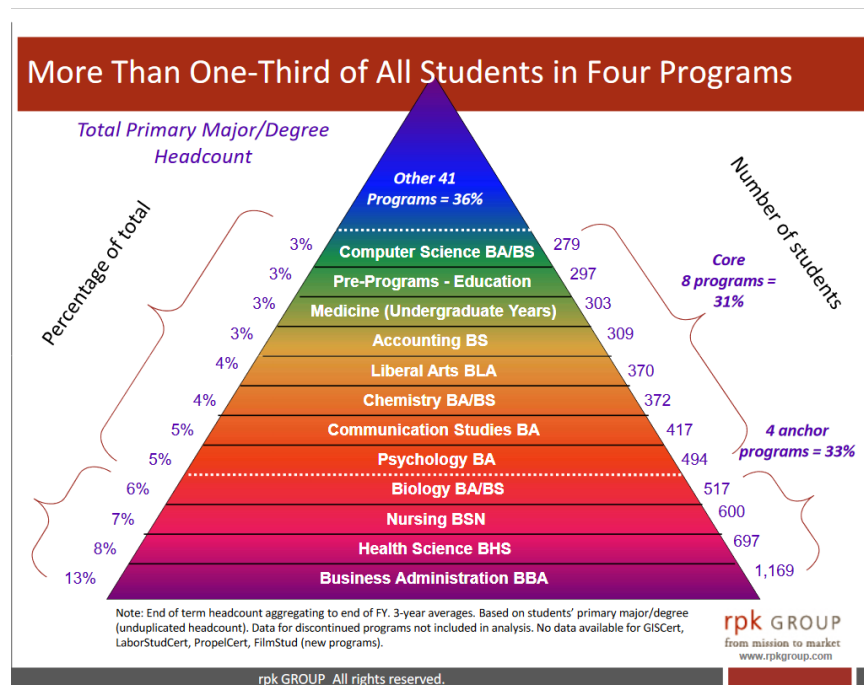
Cons: The identity of our potential donor base in Biology is an interesting issue, in part because many of our potential donors are also six-year medical students and upon graduation are more likely to identify with the Medical school. This is a similar problem for Chemistry. While creating a new, merged, unit will likely create new opportunities for fund-raising (including potential naming rights for rooms, named chairs, the unit as a whole, etc.) this will take a concerted effort and a carefully detailed strategic fund-raising plan. As part of implementation, it would be worthwhile to discuss with the Foundation the identities of potential donors for both units to identify areas both of overlap and where growth is necessary.

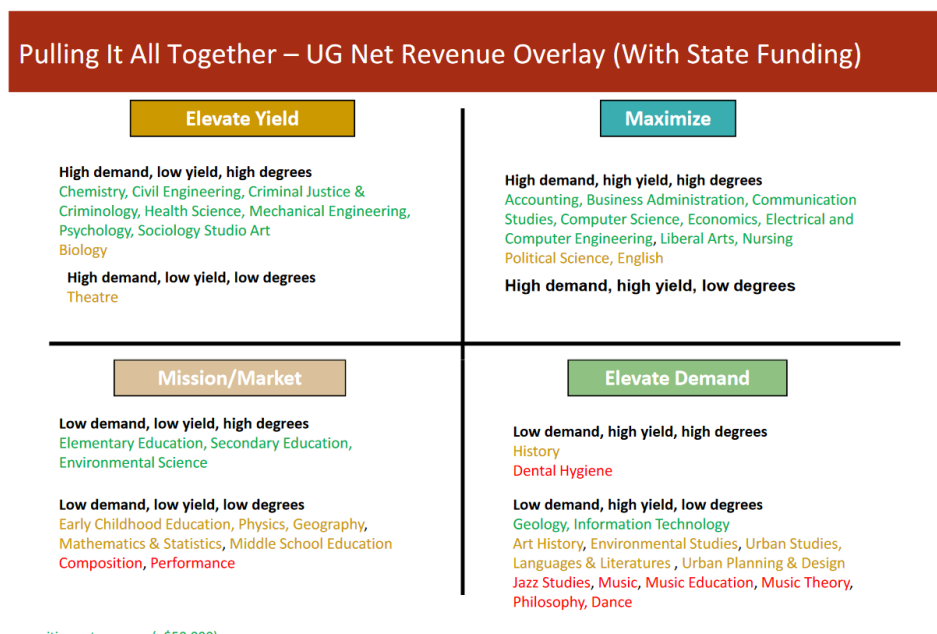
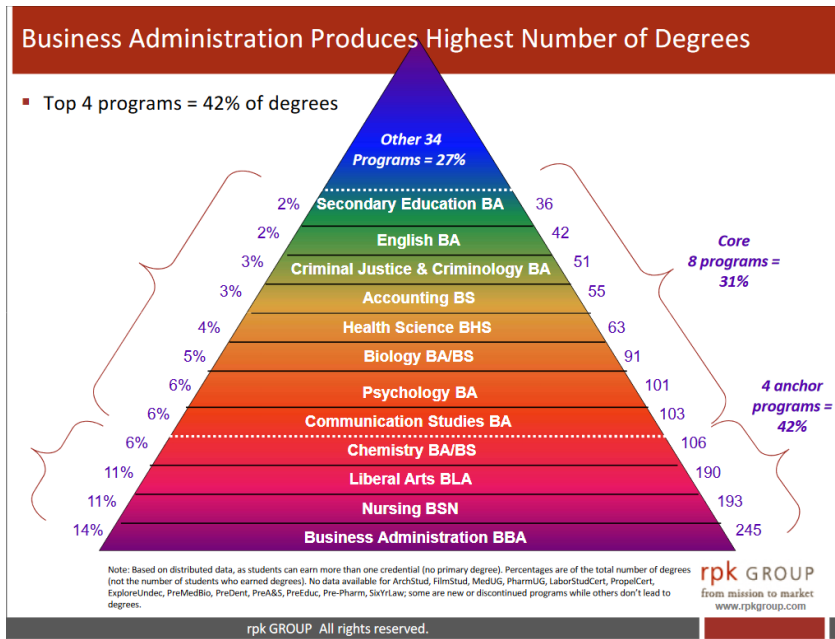
Property Thirteen: Both units have a large service teaching component, and both would benefit from elevating yield of students

Criteria: 2,3,4

Pros: A combined Biology/Chemistry program would be large group of students, and elevating the yield for these students is something that was noted for both groups in the RPK reports. Sharpening the focus could lead to recruitment of better students (the GPAs and average scores for the incoming students across Biology and Chemistry are similar) for both groups. As both groups do quite a lot of service teaching (in particular, for the Medical school), a combined program could better coordinate service teaching expectations for these students from the outset and improve the student experience.

Cons: None noted.





Property Fourteen: Chemistry and Biological Sciences currently have divergent bylaws

Criteria: 5,6

Pros: See “cons” below.

Cons: While the SBS bylaws are derived from the College bylaws, they have diverged substantially from their common ancestor. In addition, the College bylaws and procedures in Chemistry have accumulated

their own nuances over the years. The P&T process is different across the two schools (SBS has a Unit level P&T committee, A&S has P&T committees for each unit). P&T and contracts issued before the reorganization would have to be honored (N.B.- a proposal to highlight this issue in a motion has already been suggested). While none of these are insurmountable problems, the Bylaws and P&T process within the reorganized unit would need to be changed. A current effort to look at the Bylaws in SBS has already noted areas where the SBS bylaws might need to be improved, anyway- particularly related to how P&T is handled. This will definitely need to be worked out to the satisfaction of both groups during the implementation phase, and might require a phased process (especially for faculty who are pre-tenure, where the P&T process they were hired under should be honored).

Property Fifteen: Neither unit currently has a budget, and both units have undergone cuts over the past several years

Criteria: 1,6

Pros: See "cons" below.

Cons: It is particularly difficult to plan for a combined unit without an accurate budget, or budget projections over the next several year. In addition, cuts in SBS have been particularly notable (with a trough in 2015). Despite growing enrollment and SCH production, Chemistry has approximately the same number of faculty now as it did in 2007. With growing enrollment and fewer faculty, there is concern that a combined unit- far from being able to better compete for resources- would be denied resources essential for the growth of research and teaching. This is not an idle concern. SBS has been involved in merger talks, on and off, for over 8 years at this point. Not having a clear budget picture is a probably the highest point of contention for any potential merger within SBS. The new RIM model, which has not been fully launched, is also a point of concern, as are the budget exercises that the Deans have been asked to perform for the coming year. Combined with the uncertain State picture, not having a budget is clearly of concern.

On the staff side, SBS has 7 FTE (down from a high of 19.7 FTE in 2004) as of this year (current Faculty/Staff ratio, 4.7). Chemistry has 3* Staff FTE (down from a high of 6) for a Faculty/Staff ratio of 4.6. A combined unit (Biology+SBS) would have 11 FTE for supporting generation of about 20K SCH from about 47 faculty FTE (all ranks), for a *combined* Faculty/Staff ratio of 4.7. The current, overall CAS Faculty/Staff ratio is 3.6. In some respects, the combined unit should be able to better and more efficiently support faculty and students across both Biology and Chemistry; it's hard to argue that it would be overstaffed. However, a careful examination of how to best utilize the staff would be needed in the implementation phase. (**note: the data in the Warehouse reflects 4 at the present time, but the number is definitely three per Chair Kilway in Chemistry*).

From the perspective of budget, the SBS current budget (overall) is approximately \$5.7M. The current Dept. of Chemistry budget within A&S is approximately \$2.2M, with some portion of the budget being handled through the CAS Dean's office. How student fees (SBS has fees for all classes; Chemistry has fees for lab classes) would be handled would need to be worked out in implementation, but the argument from within SBS would be that the Unit fees would likely be applied to all classes (potentially after some period of time). Additionally, the RIM model should afford both Chemistry and Biology new

revenue, as the professional students both groups are service teaching would yield more tuition under the RIM model (currently, SBS and Chemistry are getting 80% of the standard undergraduate rate; in the RIM model, the proposal is to give units service teaching professional students 80% of the graduate tuition rate; a healthy difference, to be sure).

Therefore, the expectation is that the reorganized unit should have at least \$7.9M as a starting budget- and that, during implementation, the effects of the RIM model (increased tuition), the fees (potentially increased revenue), and projected cuts (10/15/20% budget exercise) would need to be clearly delineated in an open and transparent manner. It is clear that some faculty would like this information up front; what's not clear is when we'll be able to see these numbers.

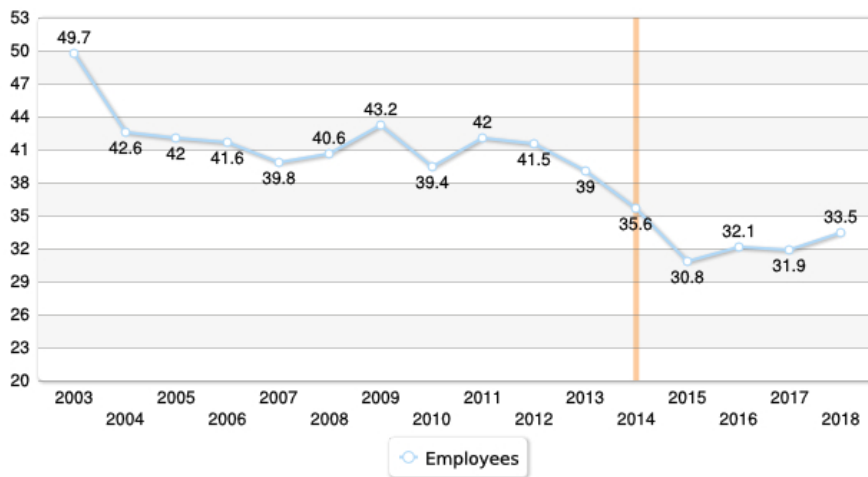
Information presented to the Deans on March 22nd, 2018 shows the following rates for the upcoming fiscal year:

Undergraduate Teaching rate per SCH to unit: \$254

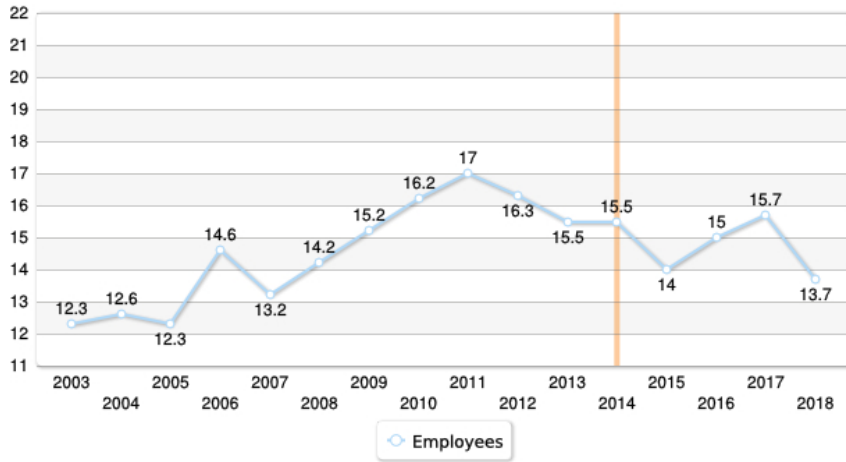
Graduate Teaching rate per SCH to unit: \$399 (the 80% rate is \$319.20, which is what we would therefore expect from service taught courses for professional schools under the new RIM model)

Provost and Interim Chancellor Bichelmeyer has indicated that a combined Chemistry/Biology unit should expect to have their budget determined by their SCH and the RIM model. VC Lindenbaum has indicated that Finance will start working to determine how to separate the Chemistry budget and combine it with Biology (if necessary after the votes), and Finance is willing to help with budget projections/scenarios for a combined unit.

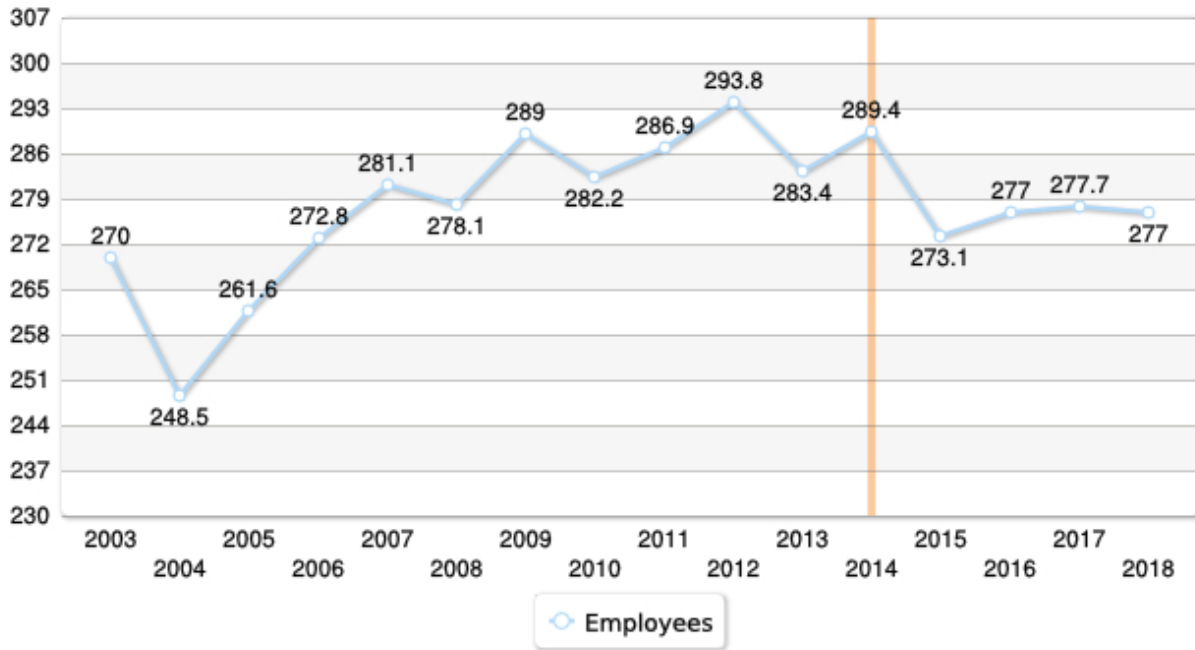
SBS Faculty (All included)



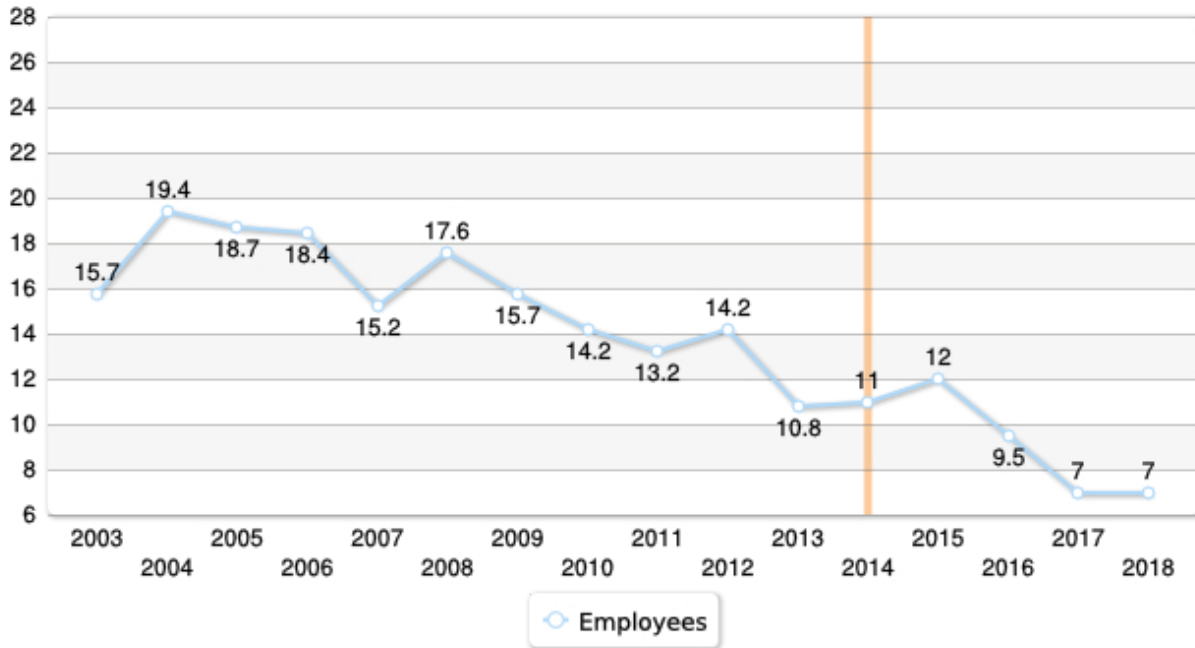
Dept Chemistry Faculty (All Included)



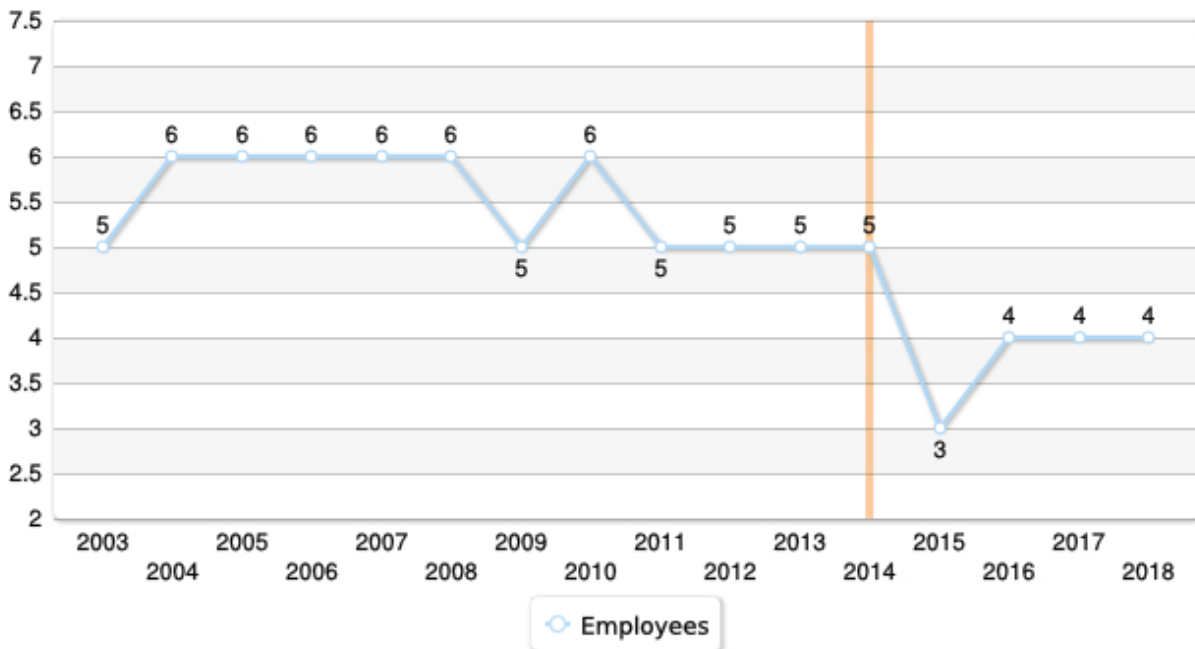
College of Arts and Sciences, Faculty overall (All included)



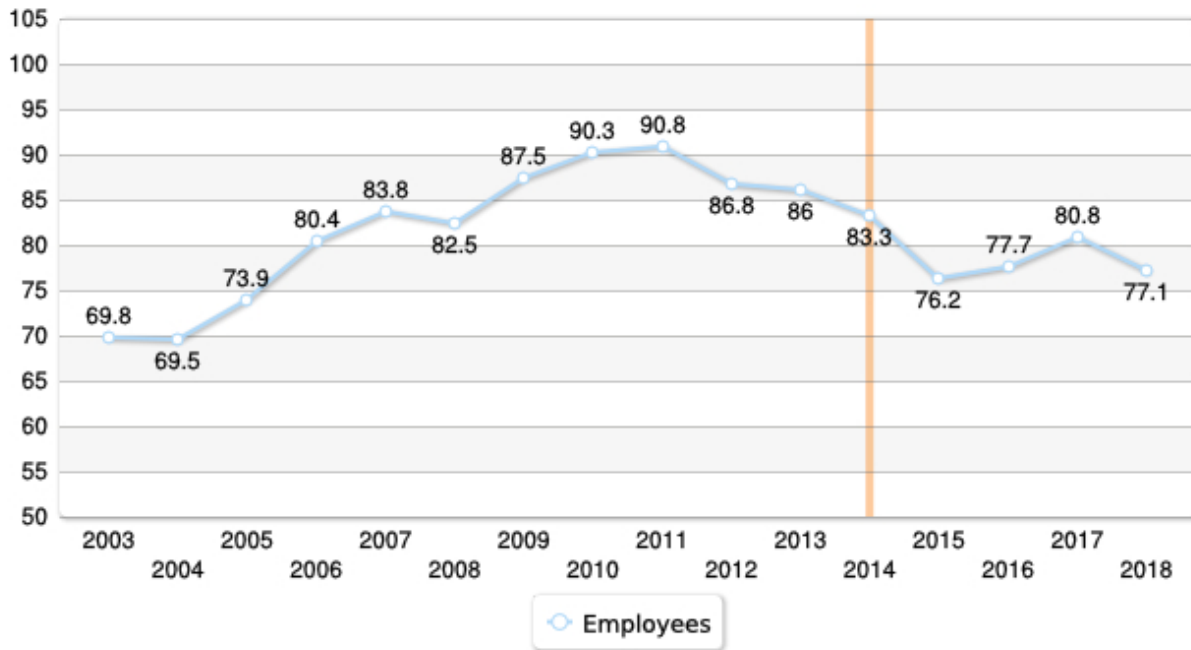
SBS Staff (including executive) Executive, Office Support/Administration, Professional, Services & Trades, Technical



Chemistry Staff (including executive) Executive, Office Support/Administration, Professional, Services & Trades, Technical (*see note above, the current number is 3)



College of A&S Staff (Overall) Executive, Office Support/Administration, Professional, Services & Trades, Technical



Property Sixteen: The BA and BS in Chemistry currently operate under the college General Education structure and may need adjustment after a merger

Criteria: 2,3,4,7

Pros: See “cons” below.

Cons: The College of Arts and Sciences has a “second level” of general education requirements that Chemistry students need to meet. Obviously, this does not apply to Biology students. While the opportunity here is clear- to consider all degrees within the combined unit carefully, and work out what requirements for students need to be met- students who entered under a specific catalog must be handled under that catalog. This will certainly create work, both for advising and for the registrar’s office, and it will need to be handled very clearly in order to ensure clarity for students. Additionally, it might take some time to make any changes to these degrees. A time-frame and careful consideration of these issues need to be examined during the implementation phase.

Property Seventeen: Chemistry has an ACS approved degree and Biology has a degree seeking accreditation from ASBMB, which means both groups will have accreditation concerns- however, they are likely to be similar

Criteria: 3,4,6

Pros: There is a clear opportunity, with approved and accredited degrees spanning two related programs, to clarify the focus of the units, be clear about what students can get out of the program, and sharpen recruitment efforts as well as support of students across the entire program.

Cons: See #16 above.

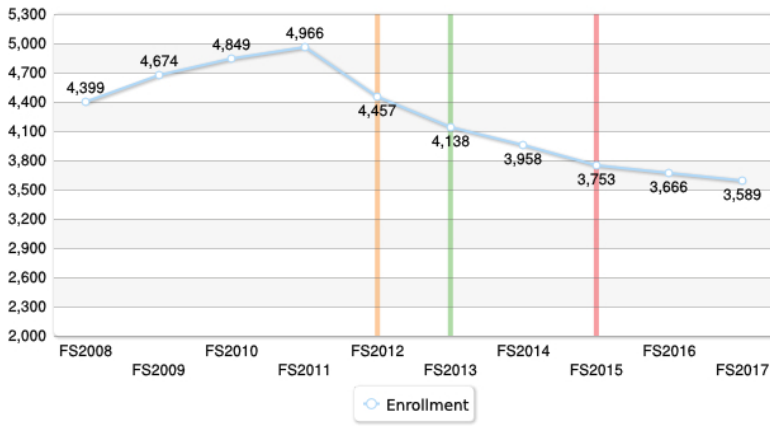
Property Eighteen: Both units have had recently growing enrollment

Criteria: 2,3,6,7

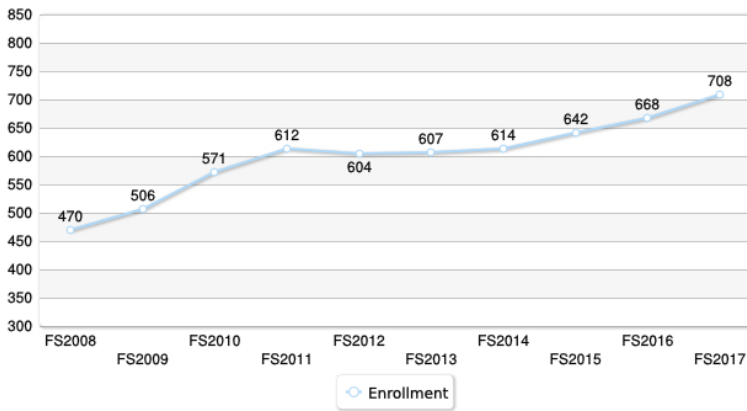
Pros: As the University moves toward a more tuition-driven model (necessitated by decreased state funding), similar pressure exist on SBS and Chemistry, and these are divergent from pressures in other parts of the College. The continuing strength of STEM fields in recruiting in general is something that can be capitalized on in the combined unit, and should focus strategic efforts.

Cons: None noted, though see notes in other fields about faculty and staff cuts.

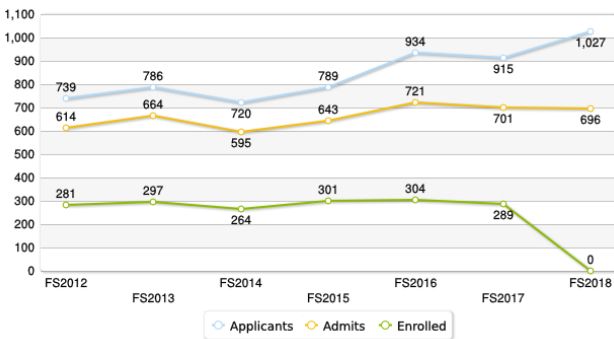
College of Arts and Sciences



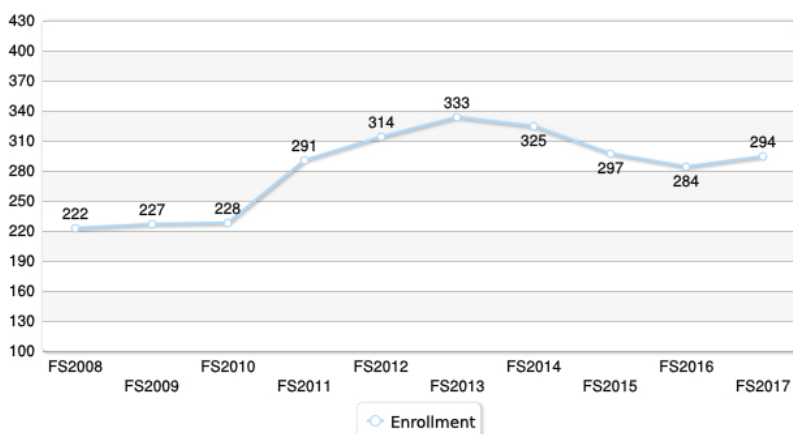
SBS Overall



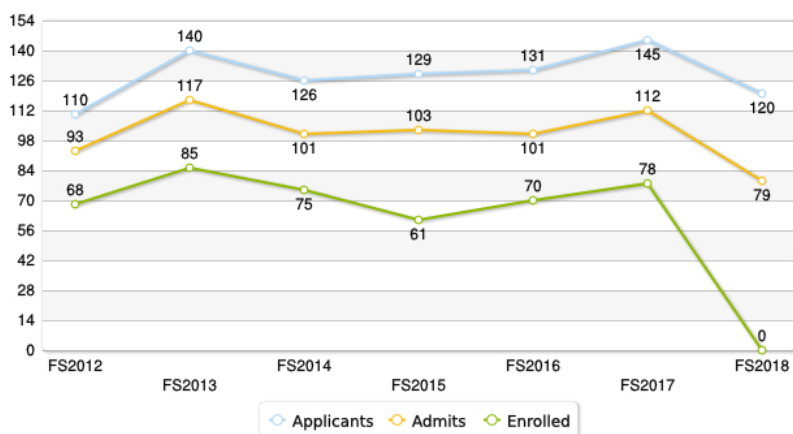
SBS Admits



Dept. Chemistry Overall



Dept. Chemistry Admits



Property Nineteen: Unit graduates are looking at potentially similar career paths after graduation

Criteria: 2,3,7

Pros: While this dovetails with some of the previous points, it is worth noting that we can focus efforts to help students on their careers as a combined unit better than we can as two separate, competing units. Opportunities for job fairs, job counseling, counseling for graduate schools, etc. are all better as a combined unit given that our students are likely already being sought by similar groups of employers.

Cons: None noted

Property Twenty: The focus of both units in their research, teaching, and service missions are more similar than either is to the majority of the College

Criteria: 2,3,4,5,6,8

Pros: Chemists and Biologists are more alike in how we relate to our work than either group is to, for example, English or Philosophy. The types of publications we value, how we expect our students to have careers, what kinds of service we value, etc. are all very similar. Indeed, Biologists are often members of the same professional organizations as Chemists, and vice versa. Combined seminar series would likely pull in not only better quality speakers, but a broader range of interested students- including from professional schools on campus and in the community.

Cons: None noted, but it is worth noting that there will be a culture change in both Biology and Chemistry that needs to be worked through and planned for in implementation.

Tables:
Summary, Pros v. Cons

	Improve operational efficiencies	Sharpen strategic focus to better achieve goals	Clarify unique value and competitive distinction	Improve quality	Improve the work experience and bring out the "better" in faculty and staff	Empower academic leaders by providing greater support and accountability	Take advantage of new ways to learn, teach, and work	Take advantage of new opportunities for knowledge creation and knowledge transmission
Pros	7	10	10	9	3	6	6	
Cons	2	2	3	3	1	3	0	
Net	5	8	7	6	2	3	6	

Pros

PROS	Criteria	1	2	3	4	5	6	7	8
Property		Improve operational efficiencies	Sharpen strategic focus to better achieve goals	Clarify unique value and competitive distinction	Improve quality	Improve the work experience and bring out the "better" in faculty	Empower academic leaders by providing greater support	Take advantage of new ways to learn, teach, and work	Take advantage of new opportunities for knowledge
1	A unit which combines biological and chemistry	x	x	x					x
2	Similar research goals are set within a unit		x		x	x		x	
3	A unit containing biological and chemistry		x	x	x				
4	A combined Biological Sciences and Chemistry unit		x	x					x
5	A combined Biological Sciences and Chemistry unit				x	x	x		x
6	Biological and Chemistry already have a combined unit	x	x	x	x		x	x	
7	A combined unit would be better able to	x		x				x	
8	There are differences in salaries for				x				
9	Both units have similar fill rates in classes (with	x	x	x					
10	Both units make use of similar space and	x			x		x		
11	Both units have level of similar expensive	x			x		x		x
12	Both units have been historically poor at								
13	Both units have a large service teaching		x	x	x				
14	Chemistry and Biological Sciences								
15	Neither unit currently has a budget, and	x							
16	The BA and BS in Chemistry currently							x	
17	Chemistry has an ACS approved degree and						x		
18	Both units have had recently growing		x	x		x	x		
19	Unit graduates are looking at postgraduate		x	x			x		
20	The focus of both units in their research		x	x	x	x		x	x
TOTAL		7	10	10	9	3	6	6	6

Cons

Cons		Criteria							
		1	2	3	4	5	6	7	8
Property		Improve operational efficiencies	Sharpen strategic focus to better achieve goals	Clarify unique value and competitive distinction	Improve quality	Improve the work experience and bring out the "better" in faculty	Empower academic leaders by providing greater support	Take advantage of new ways to learn, teach, and work	Take advantage of new opportunities for knowledge
1	A Unit which combines Biological								
2	Similar research goals are set within								
3	A unit containing Biological								
4	A combined Biological Sciences and								
5	A combined Biological Sciences and								
6	Biology and Chemistry already have a								
7	A combined unit would be better able to								
8	There are differences in salaries for	X			X				
9	Both units have similar fill rates in classes (with								
10	Both units make use of similar space and								
11	Both units have need of similar, expensive								
12	Both units have been historically poor at		X	X			X		
13	Both units have a large service teaching								
14	Chemistry and Biological Sciences					X	X		
15	Neither unit currently has a budget, and	X					X		
16	The BA and BS in Chemistry currently		X	X	X				
17	Chemistry has an ACS approved degree and			X	X				
18	Both units have had recently growing								
19	Unit graduates are looking at potentially								
20	The focus of both units in their research,								
TOTAL		2	2	3	3	1	3	0	0