

Academic Analysis of  
Salt Lake Community College  
Biology Department  
High School Partnerships

Spring 2005 to **Fall 2006**



## ***Background Information***

The Department of Biology at Salt Lake Community College participates in a considerable number of formal partnerships with local High Schools.

Three Biology courses are offered directly to High School students through traditional Concurrent Enrollment. **BIOL 1010** (Introduction to Biology) is taught at Granger, Kearns, Jordan, Murray and Taylorsville High Schools. **BIOL 1110** (Introduction to Human Anatomy and Physiology) is offered at Granger and Murray High Schools as well as at the Granite Technical Institute. Finally, **BIOL 1070** (Introduction to Marine Biology) is available at Kearns High School. Concurrent Enrollment courses are taught at the High School by High School instructors who meet SLCC and Biology Department adjunct instructor qualifications. The Biology Department Coordinator screens course proposals as well as instructor qualifications and, if approved, a Biology Department liaison is assigned to monitor and evaluate the each course.

Six Biology courses that are not approved for traditional concurrent enrollment, are offered to select groups of high school students under the terms of partnership agreements. **BIOL 1170** (Foundations of Biology) is available to students from the Jordan Applied Technology Center (JATC) and the Granite Technical Institute (GTI). **BIOL 1210** (General Biology), **BIOL 2020** (Cell Biology), **BIOL 2030** (Genetics) and **BIOL 2060** (Microbiology) are open to students from the Itineris Early College High School. **BIOL 2320** (Human Anatomy) is offered to students from the Jordan Applied Technology Center. Partnership students enroll in regularly scheduled SLCC Biology courses open to both college and high school students. These sections are taught by SLCC faculty and are allowed to have as many as 50 percent partnership students. These courses are listed in the SLCC class schedule and enrollment caps are lowered during the scheduling process to save seats for the partnership high school students.

The details of these partnership offerings are complex and not entirely defined. Concerns have been raised in other forums regarding articulation, scheduling, financial arrangements and the like. The purpose of this report, however, is to examine the academic performance of this particular category of partnership students relative to their college student counterparts. It is hoped that a thorough evaluation of these partnerships will help determine and guide future policy decisions as well as identify ways to maximize the academic performance of involved students.

**NOTE: This report has been updated to include data from Summer 2006 and Fall 2006. Updates are in RED**

## Data Collection

**Table 1**

**Sections in Banner from which Academic Information was Extracted**

Semester	Course	CRN	Instructor	Students
Spring 2005	BIOL 1210a	49924	Bill Tanner	SLCC (47)
		49925		
		49926		
		50708		Itineris (58)
		50709		
		50713		
Summer 2005	BIOL 1170a	50792	Linda Jemmett	SLCC (29)
		48086		JATC (23)
		51151		
		51152		
Fall 2005	BIOL 2020	42371	Tim Beagley	SLCC (39)
		50154		Itineris (16)
		51420		
		51424		
	BIOL 2320	50172	Jane Rudolph	SLCC (121)
		50175		
		50176		
		51034		JATC (20)
Spring 2006	BIOL 1210b	49924	Bill Tanner	SLCC (75)
		49925		
		49926		
		53241		Itineris (47)
		53242		
	BIOL 2030	47634	Arleen Sawitzke	SLCC (25)
		53245		Itineris (9)
	BIOL 1170b	52759	Bill Speer	SLCC (61)
		52760		
		53275		GTI (12)
		53276		
Summer 2006	BIOL 1170c	50792	Linda Jemmett	SLCC (31)
		48086		JATC (14)
		51692		
		51694		
Fall 2006	BIOL 2020	40997	Tim Beagley	SLCC (37)
		43741		Itineris (10)
		44597		
		22598		
	BIOL 2320	44806	Eric Green	SLCC (69)
		43757		
		44348		JATC (11)

- It should be noted that partnership students are placed into a separate listed section for accounting purposes only. For example, the four CRN's listed for BIOL 1170a during the Summer of 2005 are actually the same two sections of Linda Jemmett's class and each of those two sections had college and partnership students.
- It should also be noted that because grades listed in the banner system were used, a considerable number of students who start each section will not be counted in the analysis due to the fact that they dropped the class prior to the time when they would have needed instructor approval.
- Finally, there are usually other sections of each class (sometimes many) and only those sections holding partnership students were used for this analysis.

## Final Grades Extracted from the SLCC Banner System for Each Group of Students.

Course Number	Course Title			Number of Students with each Final Grade													
		Students	Total	A	A-	B+	B	B-	C+	C	C-	D+	D	D-	E	W	
BIOL 1210a	General Biology	SLCC	47	7	4	4	2	4	5	3	2	2	3	1	7	3	
		Itineris	58	3	2	5	7	3	4	5	2	2	4	4	9	8	
BIOL 1170a	Foundations of Biology	SLCC	29	7	3	2	3	5	3	0	1	0	0	0	4	1	
		JATC	23	7	1	5	4	0	0	3	0	0	1	1	1	0	
BIOL 2020a	Cell Biology	SLCC	39	7	4	6	7	5	1	1	1	0	1	0	3	3	
		Itineris	16	2	0	2	4	2	2	2	1	0	1	0	0	0	
BIOL 2320a	Human Anatomy	SLCC	121	10	2	4	22	11	5	13	2	3	11	4	17	17	
		JATC	20	1	0	1	0	2	2	3	0	1	0	1	1	8	
BIOL 1210b	General Biology	SLCC	75	12	4	3	8	2	3	7	1	3	3	0	16	13	
		Itineris	47	2	1	3	5	1	3	7	1	2	1	3	4	14	
BIOL 2030a	Genetics	SLCC	25	2	1	1	0	0	0	3	4	1	1	2	7	3	
		Itineris	9	1	1	0	0	0	0	0	1	0	2	2	2	0	
BIOL 1170b	Foundations of Biology	SLCC	61	13	2	3	12	5	3	3	1	2	3	0	10	4	
		GTI	12	1	1	1	1	0	0	0	0	0	0	0	8	0	
BIOL 1170c	Foundations of Biology	SLCC	31	6	2	2	4	3	2	1	0	0	0	0	8	3	
		JATC	14	1	1	0	4	1	3	1	0	1	0	0	2	0	
BIOL 2020b	Cell Biology	SLCC	37	3	8	3	14	3	3	1	0	0	0	0	0	2	
		Itineris	10	1	2	0	0	2	1	2	1	0	1	0	0	0	
BIOL 2320b	Human Anatomy	SLCC	69	3	5	9	12	4	5	5	4	4	3	1	11	3	
		JATC	11	2	2	2	2	3	0	0	0	0	0	0	0	0	

**Table 2**

## KEY Variables Calculated from the data

Course Number	Course Title	Total Students		GPA	Percent	Percent	Percent	Percent
					A or A-	C or higher	E	W
BIOL 1210a	General Biology	SLCC	47	2.27	23%	62%	15%	6%
		Itineris	58	1.94	9%	50%	16%	14%
BIOL 1170a	Foundations of Biology	SLCC	29	2.74	34%	79%	14%	3%
		JATC	23	2.95	35%	87%	4%	0%
BIOL 2020	Cell Biology	SLCC	39	2.89	28%	79%	8%	8%
		Itineris	16	2.71	13%	88%	0%	0%
BIOL 2320	Human Anatomy	SLCC	121	2.07	10%	55%	14%	14%
		JATC	20	2.11	5%	45%	5%	40%
BIOL 1210b	General Biology	SLCC	75	2.12	21%	52%	21%	17%
		Itineris	47	2.05	6%	47%	9%	30%
BIOL 2030	Genetics	SLCC	25	1.43	12%	28%	28%	12%
		Itineris	9	1.42	22%	22%	22%	0%
BIOL 1170b	Foundations of Biology	SLCC	61	2.44	25%	67%	16%	7%
		GTI	12	1.17	17%	33%	67%	0%
BIOL 2060	Microbiology	SLCC	49	In Progress <b>Table 3</b>				
		Itineris	10					
BIOL 1170c	Foundations of Biology	SLCC	32					
		JATC	15					

## Direct Average Grade Comparison

Figure 1

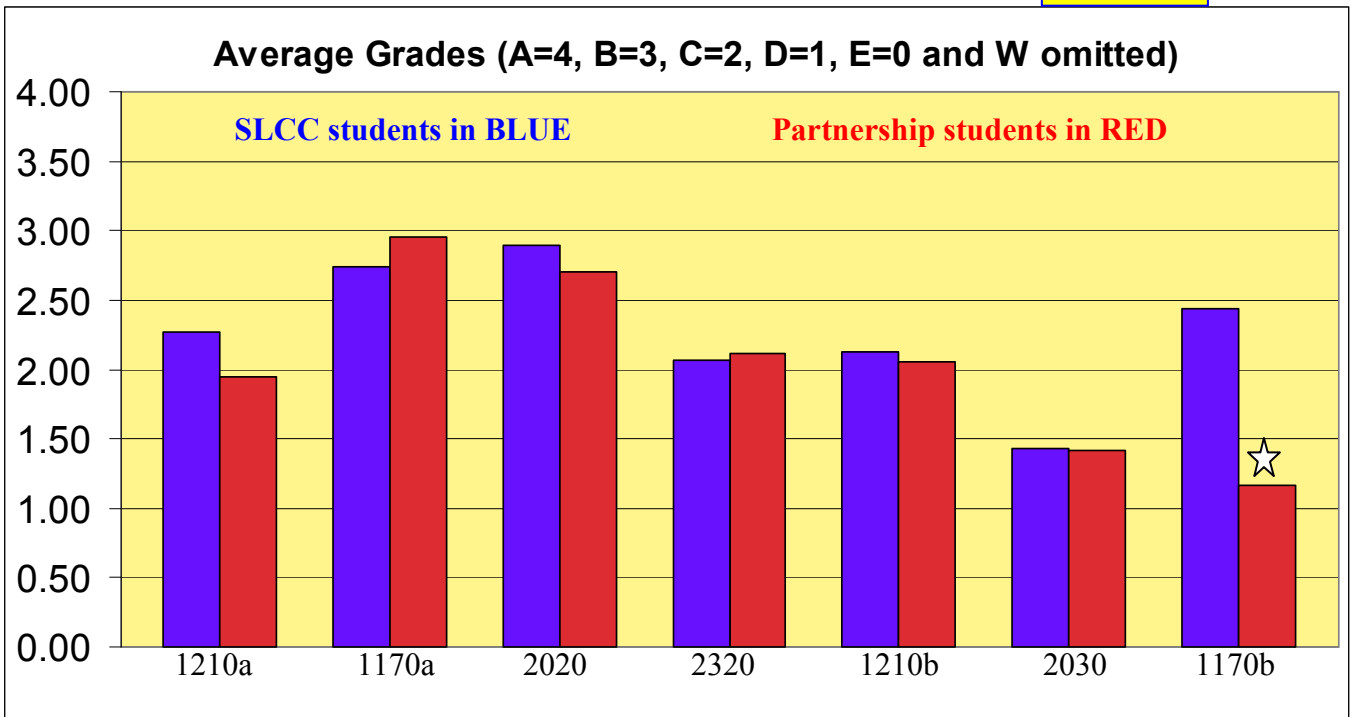
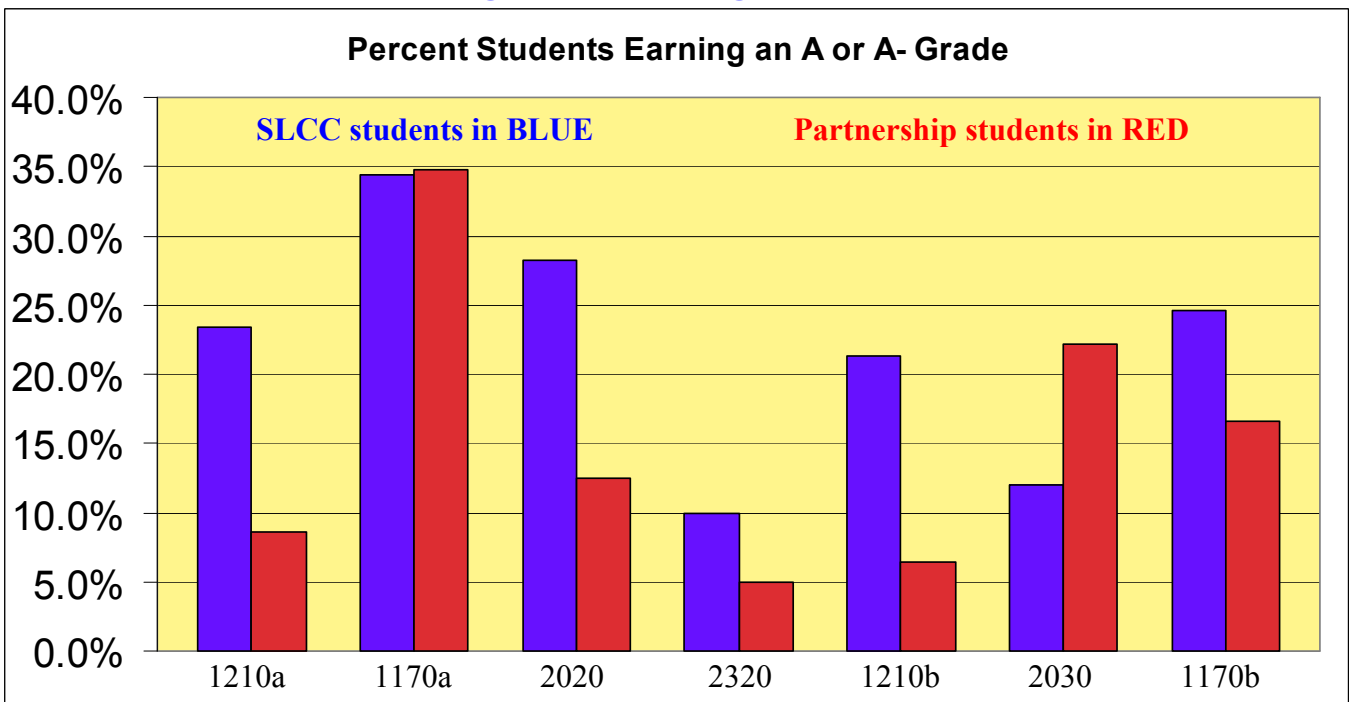


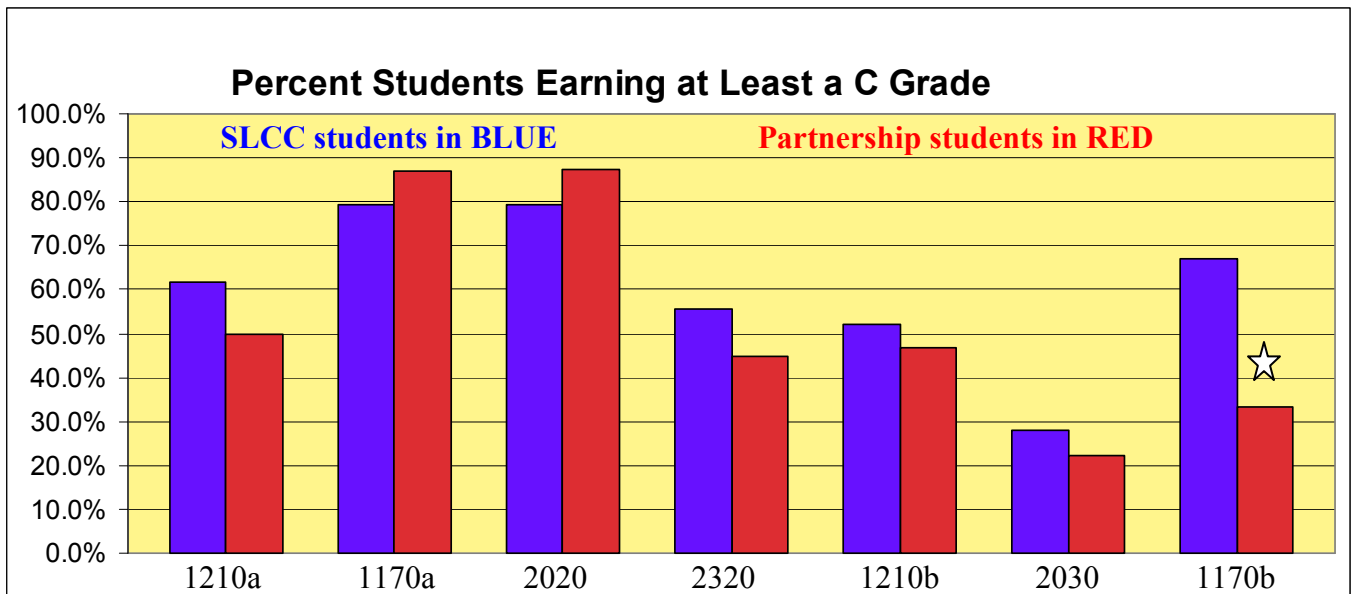
Figure 2

## High-Performing Students



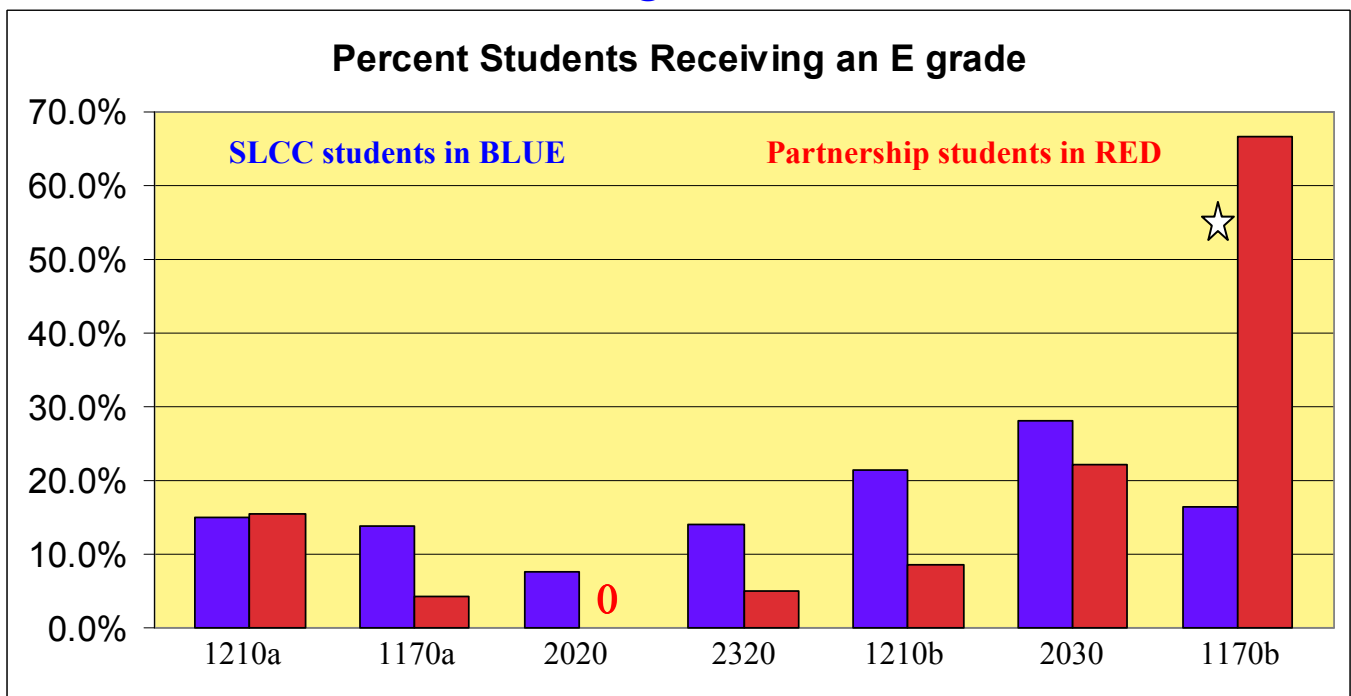
**Figure 3**

### Passing Students



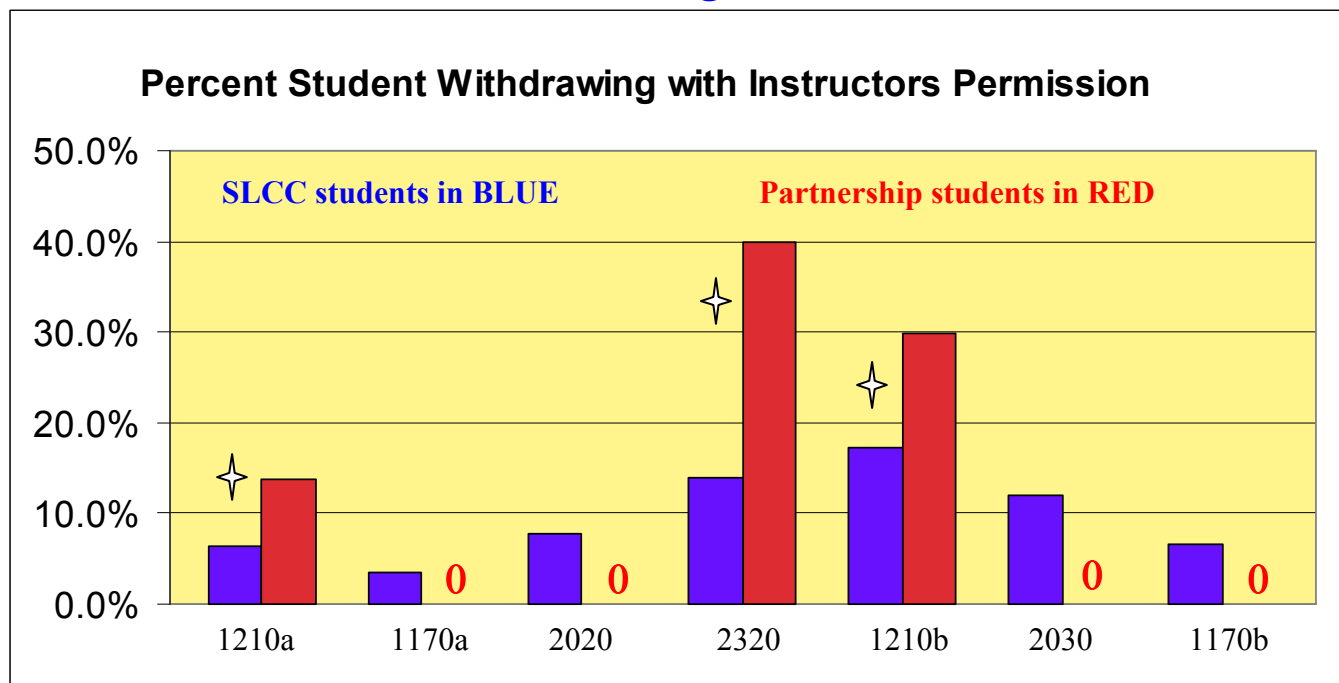
**Figure 4**

### Failing Students



**Figure 5**

## Withdrawing Students



### Observations from the Data

- 1) From **Figure 1**, we can see that, for the most part, partnership students receive grades that are in line with their college student counterparts. Some partnership groups are a little lower and others are a little higher. Almost always, though, the two groups are within a single partial grade of each other. The one exception to this trend is the BIOL 1170b group from GTI (the star in Figures 1 and 3). This group was a full letter grade below the college students. Clearly, something went wrong with this group because NONE of them withdrew (they may not have known that they could withdraw) and 8 of the 12 students received an E grade. All of these same results are reiterated in **Figure 3** which shows the percentage of students receiving a C grade or higher. Again, we see the anomaly with BIOL 1170b.
- 2) In most cases (5 out of 7) the high school groups do not have as many A/A- students as the college groups as shown in **Figure 2**. The two exceptions are BIOL 1170a which had nearly the same percentage of high-performing students and, interestingly, BIOL 2030 which had nearly twice the percentage of high-performing high school students as college students. It must be noted that in some of these cases, the numbers are small and are likely not statistically relevant.
- 3) There is a general trend in **Figure 4** that shows fewer high school students receive an E grade than the college students. The main exception to that trend is, again, the 1170b anomaly.
- 4) There exists great variability between courses and groups in the percentage of students withdrawing after the deadline with instructors permission as seen in **Figure 5**. These differences may be related to group differences or to differences in instructor withdrawal policy. Notably, BIOL 1170a, 2020, 2030 and 1170b had no partnership students taking the W grade. Perhaps most important, however, is the difference between groups for BIOL 1210a and 1210b as well as BIOL 2320. The BIOL 1210 classes had nearly twice as many high school students take a W grade and BIOL 2320 had nearly three times as many.

## Other Points/Concerns

- 1) The Itineris organization appears to be doing a very good job of providing their students with academic options. Clearly, not all of their students are going to complete the Biotech certification and they have given their students other pathways to follow. It would be nice, however, to have a longitudinal study on this group to see if their classroom performance might be a reliable indicator of the students need to change direction. As shown in Table 1, the number of Itineris students taking the Biology series dwindles from 58 in BIOL 1210a, to 16 in BIOL 2020 and to 9 by the time they reach BIOL 2030. It would be useful to know if a particular grade in BIOL 1210 and/or other classes could help Itineris staff and students make decisions regarding future courses.
- 2) Of primary concern remains the narrow focus of the JATC surgical tech students. Diametrically opposed to the option-oriented approach of Itineris, the JATC students must leave the program if they fail to receive a B grade in Human Anatomy (BIOL 2320). Only 2 of the 20 students were able to earn a B. It should be noted that many of the other students were allowed to retake the BIOL 2320 course, with lab, free of charge. However, only 2 more students earned the B grade the second time. That means that only 20 percent of the high school students were able to enter the partnership program. Given the low percentage of students earning the required B grade, the Biology department would like to see more students starting the 1170 course. Unfortunately, the JATC partners have only placed 15 students in the partnership for this summer (BIOL 1170c in Table 1). Without help and a change in practice, we could predict that only 2 or 3 of these students will receive a B grade or higher this fall in Human Anatomy.
- 3) Partners should continue to be encouraged to offer extra assistance such as tutoring and study guidelines to their students. The change from High School to college coursework can be difficult for some students and additional help can increase the likelihood of success.
- 4) Partners should also be encouraged to allow students flexibility in the academic plans. Many college students change their plans several times during their college careers and high school students need the same ability.
- 5) As the GTI partnership grows, we need better communication with their staff and we need to incorporate lessons learned from other partnerships.
- 6) It would also be interesting to now the relative rates at which these groups of students drop classes before the deadline.
- 7) Finally, there exists some question regarding the validity of some of these data. Specifically, in at least one case, the number of students showing an E grade in the Banner system did not match the number of students the instructor had actually given that grade to. It is not clear why the discrepancy exists but TWO partnership students who took the class and received an E grade later show up in the Banner system as never taking a Biology class at SLCC.