

Biology

Department of Biology

Introduction

The purpose of the Department of Biology is to provide high school graduates of southwest Louisiana and two-year college transfer students with the knowledge and skills required for employment in their allied health disciplines or advanced study in graduate or professional schools, to advance knowledge through scientific research and serve the disciplines within the department through professional activities, to serve the community in matters relating to the disciplines within the department, and to provide instructional services to students in other areas of study within the University.

BIOS	BIED	0	3	1	0	4	0	0	4	2	0	6	0
	MOBI	2	1	1	1	5	0	1	2	1	3	7	0
	PRDN	17	3	3	3	26	0	10	4	2	2	18	1
	PRMD	68	38	13	20	139	2	40	30	23	23	116	13
	(blank)	37	23	20	40	120	6	18	29	19	41	107	13
Grand Total		124	68	38	64	294	8	69	69	47	69	254	27

2017-2018:

Major	Conc.	Fall						Spring					
		F	S	J	Sr	T	CMP	F	S	J	Sr	T	CMP
BIOS	BIED	1	1	6	1	9	0	2	0	2	4	8	0
	MOBI	5	3	2	9	19	1	3	6	5	6	20	4
	PRDN	25	1	3	3	32	1	12	6	2	3	23	0
	PRMD	81	37	26	17	161	1	48	56	17	27	148	7
	(blank)	31	21	21	33	106	7	25	13	22	34	94	12
Grand Total		143	63	58	63	327	10	90	81	48	74	293	23

1.1.1 Analysis of Data and Plan for Continuous Improvement

2015-2016:

Enrollments in all concentrations besides Pre-Dentistry remained steady or increased. Pre-Dentistry decreased from 31 students in fall 2013 to 22 students in fall 2015.

2016-2017:

No action will be taken at this time because total enrollment in the program has increased more than the Pre-Dentistry decrease.

2017-2018:

Fall 2017 had the highest enrollment total since fall 2013. Spring 2018 was the fourth highest enrollment total since fall 2013 and the highest enrollment total of any spring semester since 2014. PRMD continues to have the highest number of students followed by PRDN and MOBI, which tripled in number this reporting period. Since 2013-2014, the numbers of completers have fluctuated from year to year; numbers of completers were relatively low in 2013-2014 and 2015-2016 whereas the number of completers were relatively high in 2014-2015, 2016-2017, and 2017-2018. Plans are in progress for student recruitment in the pre-health professions and the department has a Retention/Recruitment Committee.

2 Assessment and Benchmark

Benchmark: Maintain or exceed 2013-2014 levels of retention.

2.1 Data

Year	# of retained students	Retention rate
Fall 2013-Fall 2014	127	52.70%
Fall 2014-Fall 2015	112	50.68%
Fall 2015-Fall 2016	142	50.35%
Fall 2016-Fall 2017	131	50.58%
Fall 2017-Fall 2018		

2.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

The retention rates for the past three academic years are virtually indistinguishable. The difference in retention rates between 2014-2015 and 2016-2017 is only 0.1%.

2017:

Major	Cohort Size	Same Major?	Persistence Rate		Retention Rate						Graduation Rate					
					Y1 to Y2		Y1 to Y3		Y1 to Y4		4-Year		5-Year		6-Year	
			#	%	#	%	#	%	#	%	#	%	#	%	#	%
BIOS		Same														
		Changed														
		Total														

2018:

Major	Cohort Size	Same Major?	Persistence Rate		Retention Rate						Graduation Rate					
					Y1 to Y2		Y1 to Y3		Y1 to Y4		4-Year		5-Year		6-Year	
			#	%	#	%	#	%	#	%	#	%	#	%	#	%
BIOS		Same														
		Changed														
		Total														

2019:

Major	Cohort Size	Same Major?	Persistence Rate		Retention Rate						Graduation Rate					
					Y1 to Y2		Y1 to Y3		Y1 to Y4		4-Year		5-Year		6-Year	
			#	%	#	%	#	%	#	%	#	%	#	%	#	%
BIOS		Same														
		Changed														
		Total														

3.1.1 Analysis of Data and Plan for Continuous Improvement

Performance Objective 2 Engage in collaborative ventures and campus and community activities which enhance economic development, cultural and artistic growth, and or educational experiences for the SWLA region and beyond.

1 Assessment and Benchmark

Benchmark: All faculty will serve on department committees, and 50% will serve on college and university committees.

1.1 Data

Year	Faculty that served on departmental committees		Faculty that served on college/university committees	
	#	%	#	%
2016	-	100%	8/13	62%
2017	-	100%	8/13	62%
2018				

2017: Committee assignments are attached.

[2017 Committee Assignments](#) [DOCX 15 KB 4/5/19]

1.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

The current level of departmental and community service activities will be maintained.

Faculty will continue to be encouraged to take advantage of opportunities to serve on college and/or university committees. The department head will take advantage of opportunities to recommend faculty to serve on college and/or university committees.

2017:

The current level of departmental service activities is acceptable.

During departmental meetings and at other times appropriate, the importance of serving on college/university committees and reasons for taking advantage of opportunities to serve on such committees will be discussed with faculty. The department head will take advantage of opportunities to recommend faculty to serve on college/university committees.

2 Assessment and Benchmark

Benchmark: 50% of the faculty will serve as resource persons for the community.

2.1 Data

2016:

Ten (77%) of the faculty served as resource persons for the community. This objective was met.

2017:

Ten (76.9%) of the faculty served as resource persons for the community (e.g., plant and animal identification, science fair judging, and biological consultation). This objective was met.

2.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

The current level of departmental and community service activities will be maintained.

2017:

Upon analysis of the data, the benchmark should be raised to 80%. Inquiries from the community may be routed to additional faculty for consultation.

3 Assessment and Benchmark

Benchmark: The department will enter into a collaborative agreement with a government agency in Calcasieu Parish.

3.1 Data

2016:

The department has continued its partnership with the City of Lake Charles to help renovate Tuten Park. Specifically the department is conducting a biodiversity survey of the park in order to provide the city with a species inventory for use in educational programs to be held at the Park. In 2015 the survey was submitted to the City of Lake Charles and will be updated as needed. Ms. Danielle Maxwell is currently chair of the Tuten Park Committee and Dr. Juliana Hinton serves on the community board known as Friends of Tuten Park.

2017:

The department has continued its partnership with the City of Lake Charles to help renovate Tuten Park. Specifically the department is conducting a biodiversity survey of the park to provide the city with a species inventory for use in educational programs to be held at the Park. Beginning in 2015, the survey was submitted to the City of Lake Charles and will be updated as needed. Ms. Danielle Maxwell is currently chair of the Tuten Park Committee and Dr. Juliana Hinton serves on the community board known as Friends of Tuten Park. The department also is involved with the Master Naturalist Program coordinated with Calcasieu Parish Parks and LA Wildlife and Fisheries. Ms. Maxwell is involved in this program.

3.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

The department will continue to conduct the biological survey of Tuten Park and participate in Friends of Tuten Park.

2017:

The department will continue to conduct the biological survey of Tuten Park, participate in Friends of Tuten Park, and pursue other biology-associated community/outreach programs.

Performance Objective 3 Graduates of the BS in Biological Sciences program will be successful in acceptance to graduate/professional school and/or gaining employment.

1 Assessment and Benchmark

Benchmark: 80% acceptance rate for students who apply to graduate/professional school.

1.1 Data

Year	Students that applied to graduate or professional school	Students accepted into graduate or professional school		Students not accepted into graduate or professional school		Graduates with unknown status	
	#	#	%	#	%	#	%
2013	19	14	74.0%	4	21.0%	1	5.3%
2014	13	8	61.5%	4	30.8%	1	7.7%
2015	16	15	94.0%	0	0.0%	1	6.0%
2016	11	7	64.0%	-	-	3	27.0%
2017	28	19	68.0%	-	-	7	25.0%

1.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

The benchmark of 80% was not achieved. Have incorporated career tips in biology in the capstone course. No other actions are anticipated.

2017:

The benchmark of 80% was not achieved. We have incorporated career tips in biology in the capstone course as well as graduate program search methods for students interested in pursuing post-baccalaureate degrees in biology/biology-related fields in the capstone course. Faculty will be encouraged to discuss biology career options with students. We will review the current trend for further action based on next year's assessment of the unknown student status. Email contact may be considered.

2 Assessment and Benchmark

Benchmark: 80% employment rate for students who seek employment upon graduation.

2.1 Data

Year	Students known to have sought employment after graduation	Students that achieved employment		Students with unknown status	
	#	#	%	#	%
2013	5	5	100.0%	0	0.0%
2014	13	8	62.0%	5	38.0%
2015	11	7	64.0%	4	36.0%
2016	9	8	89.0%	1	11.0%
2017	9	3	33.0%	6	67.0%

2.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

The benchmark of 80% was achieved.

2017:

The benchmark of 80% was not achieved. Have incorporated career tips in biology in the capstone course. Faculty will be encouraged to discuss biology career options with students. We will review the current trend for further action

based on next year's assessment of the unknown student status. Email contact may be considered.

Performance Objective 4 Demonstrate excellence in teaching in order to enhance student recruitment, retention, and graduation.

1 Assessment and Benchmark

Benchmark: Student Evaluation of Instruction (SEI) will average at least 90%.

1.1 Data

Year	SEI Average
2013	90.89%
2014	93.03%
2015	93.80%
2016	93.00%
2017	92.88%

1.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

Faculty members continue to earn high scores on student evaluations. Will consider increasing the benchmark for next year.

2017:

Faculty members continue to earn high scores on student evaluations. There was a slight decrease this year from previous years. The faculty SEIs will continue to be monitored to determine if this decrease is a minor fluctuation or the beginning of a downward trend. |

2 Assessment and Benchmark

Benchmark: Graduating seniors will indicate they are at least 85% satisfied with their experience in the department.

2.1 Data

Year	% satisfaction of graduating seniors with their experience in the department
2013	88.7%
2014	89.9%
2015	95.4%
2016	90.0%
2017	90.72%

2.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

Graduating seniors on average were 90.0% satisfied with their experience in the department. This level of satisfaction is 5.4% lower than last year's average satisfaction level. This objective was met.

2017:

Graduating seniors on average were 90.72% satisfied with their experience in the department. This level of satisfaction is 0.72% higher than last year's average satisfaction level which had dropped from the previous year. This objective was met. Student satisfaction will be tracked to see if this is an increasing trend or fluctuation.

3 Assessment and Benchmark

Benchmark: All faculty will attend seminars, workshops, or short courses on topics relevant to teaching or advising.

Prior to 2016-2017, the benchmark was >50% of the faculty will attend seminars, workshops, or short courses on topics relevant to teaching or advising.

3.1 Data

Year	Faculty that attended seminars, workshops, or short courses pertaining to teaching/advising	
	#	%
2013	-	100%*
2014	-	89%
2015	-	58%
2016	-	100%
2017	-	100%

*This percentage excludes two faculty members (who were in their terminal year after being denied tenure) who did not submit their APR.

3.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

The expected level of achievement for faculty attending seminars, workshops, or short courses relevant to teaching or advising had been decreased back to 50% from 100% because this year there was no optional Faculty Retreat at the beginning of the fall semester. The level of expected attendance will be raised back to 100% should a faculty retreat be reinstated.

2017:

All faculty members attended seminars, workshops, or short courses on topics relevant to teaching or advising. This objective was met. Further integration of new pedagogy may benefit student learning.

Performance Objective 5 Demonstrate commitment to research and creative and scholarly activity.

1 Assessment and Benchmark

Benchmark: 50% of the tenured and tenure-track faculty who hold doctorate degrees will publish a refereed journal article, book chapter, or a book, and will serve as peer reviewers of manuscripts for journals or grant agencies.

Prior to 2016 the benchmark for this assessment was set at 20%.

1.1 Data

Year	Published a refereed journal article, book chapter, or a book		Served as peer reviewers of manuscript for journals or grant agencies	
	#	%	#	%
2013	-	63.0%	-	75.0%
2014	-	33.0%	-	44.0%
2015	-	44.0%	-	56.0%
2016	-	55.6%	7/	77.8%
2017	-	55.6%	5/	55.6%

1.1.1 Analysis of Data and Plan for Continuous Improvement

2015:

Increase the benchmark for next year to 50%.

2016:

Faculty will continue to be encouraged to conduct research, to join professional societies, to present their findings at professional meetings, and to submit manuscripts to refereed journals. However, research activities are severely limited because space for research within the department is woefully lacking due to the closure of Frasch Annex.

Additionally, faculty have become reluctant to attend scientific meetings due both to university budget constraints (no travel budget) and personal budget constraints (faculty finally only this year had a salary increase after seven years of stagnant salaries).

All of the department's research labs finally reopened in January 2009 following a three year closure due to Hurricane Rita. However, beginning in 2010 plans called for the entire Frasch Annex (where all except for one of the research labs were located) to be closed for renovation for at least one year beginning at some unspecified time in the near future. Late in 2010 we were told that construction would begin in spring 2011 and we began discarding unneeded supplies and surplus unwanted equipment as well as packing up supplies and equipment to move into storage in the old part of Frasch Hall. However, in early January 2011 we were told that the construction was postponed "until February or March 2012 at the latest" so the labs remained open. In April 2012 the Department was informed that construction would not begin earlier than Spring 2013. The consensus of the faculty who did research in the annex was to continue research activities in the Annex and not move out any research equipment/supplies until construction was eminent. In fall 2012 we were told work would begin in summer 2013, and in spring 2013 we were told work would begin in spring 2014. In spring 2014 we were assured that construction would begin "after summer 2014" and we were told we had to move everything (all equipment, supplies, and movable furniture) out of the Annex by the end of summer 2014, which we did, because construction would begin "during fall 2014". As of the end of this reporting period (December 31, 2015), the Annex continued to be vacant and no construction had begun. However, construction finally began in January 2016. Research is currently being done in two labs in old Frasch Hall (one of the two labs had formerly been the office for Visiting Lecturers), teaching labs, and two faculty offices.

Seven (77.8%) tenured and tenure-track faculty holding doctorates served as peer reviewers for 20 manuscripts. This objective was met.

2017:

Faculty will continue to conduct research. They will be asked to join appropriate professional societies, to present their findings at professional meetings, and to submit manuscripts to refereed journals. However, research activities are severely limited because space for research within the department has been lacking due to the closure of Frasch Annex (see below). Despite the lack of research labs, faculty have been creative in finding other places, and many with other colleagues, to conduct some research to continue to be active in their fields.

After a long period of building construction delays for Frasch Annex, construction finally began in January 2016. Construction was supposed to take one year. In fall 2017, the Annex was finally opened; however, several labs still needed contractual work. At the end of this reporting period (December 31, 2017), contractual work was still ongoing.

Five (55.6%) tenured and tenure-track faculty holding doctorates served as peer reviewers for 14 manuscripts. This objective was met; however, this number is down from the previous year. Faculty will be encouraged to engage with their professional disciplines which might increase faculty participation in these efforts. Manuscript review requests vary and depend on the journal.

2 Assessment and Benchmark

Benchmark: 50% of all faculty will give a professional meeting presentation, and 75% of all faculty will attend at least one professional meeting.

2.1 Data

Year	Faculty that gave a professional meeting presentation		Faculty that attend at least one professional meeting	
	#	%	#	%
2013	-	53.0%	-	88.0%
2014	-	26.0%	-	58.0%
2015	-	42.0%	-	58.0%
2016	7/13	53.8%	8/13	61.5%
2017	8/13	61.5%	8/13	84.6%

2.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

Seven out of 13 (53.8%) faculty in the department gave a total of 43 professional meeting presentations. This objective was met.

Eight out of 13 (61.5%) faculty in the department attended a total of 28 professional society meetings. This objective was not met.

2017:

Eight out of 13 (61.5%) faculty in the department gave a total of 56 professional meeting presentations. This objective was met. Increase from the previous year may be based on an additional faculty member presenting. To be reviewed for revision if necessary. Faculty will be encouraged to engage with their professional disciplines.

Eleven out of 13 (84.6%) faculty in the department attended a total of 27 professional society meetings. This objective was met. Faculty will be encouraged to engage with their professional disciplines.

3 Assessment and Benchmark

Benchmark: All faculty will hold membership in at least one professional society, and 50% of all faculty will participate in the activities of professional societies.

3.1 Data

Year	Faculty that held membership in at least one professional society		Faculty that participated in activities of professional societies	
	#	%	#	%
2013	-	94.0%	-	71.0%
2014	-	68.0%	-	47.0%
2015	-	95.0%	-	63.0%
2016	12/13	92.3%	8/13	61.5%
2017	12/13	92.3%	7/13	53.8%

3.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

Twelve out of 13 (92.3%) faculty in the department held membership in 50 professional societies. This objective was not met.

Eight out of 13 (61.5%) faculty in the department participated in activities of professional societies. This objective was met.

2017:

Twelve out of 13 (92.3%) faculty in the department held membership in 49 professional societies. This objective was not met. Discussions will ensue regarding the importance of professional society memberships. We will speak to the one faculty member who is not a member of any professional society to ascertain reasons for why membership is not sought.

Seven out of 13 (53.8%) faculty in the department participated in activities of professional societies. This objective was met. We will suggest ways faculty members can become more active in their societies, e.g., act as reviewers of society journal articles, serve on editorial advisory boards, etc.

Performance Objective 6 Utilize resources efficiently and effectively to support the university mission.

1 Assessment and Benchmark

Benchmark: 50% of faculty will write teaching-related grant proposals, and 50% of the teaching-related proposals which are submitted will receive funding.

1.1 Data

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Year	Faculty that wrote teaching-related grant proposals		Teaching-related proposals which are submitted that received funding	
	#	%	#	%
2013	-	59.0%	-	92.0%
2014	-	47.0%	-	100%
2015	-	68.0%	-	95.0%
2016	8/13	62.0%	12	100%
2017	8/13	61.5%	10	100%

1.1.1 Analysis of Data and Plan for Continuous Improvement

2015:

One proposal is still pending. The total amount of funds received from these proposals was \$264,520. Of this total, \$58,200 was the result of interdepartmental collaboration (with the Department of Chemistry and Physics) and \$99,048 was the result of intercollegiate collaboration (with the College of Engineering). We will raise the benchmark to 75%.

2016:

Eight out of 13 (62%) faculty members submitted 12 teaching-related grant proposals. This objective was met. Faculty submission of teaching-related and research-related grant and contract proposals continue to be encouraged. However, research activities are severely limited because space for research within the department is woefully lacking due to the closure of Frasch Annex.

Benchmark was not raised to 75%. Benchmark kept at 50%. Analysis from data concludes the objective was met. All 12 (100%) of the submitted teaching-related proposals were funded. The total amount of funds received from these proposals was \$75,552.

Faculty submission of teaching-related and research-related grant and contract proposals continue to be encouraged. However, research activities are severely limited because space for research within the department is woefully lacking due to the closure of Frasch Annex.

2017:

Eight out of 13 (61.5%) faculty members submitted 10 teaching-related grant proposals. This objective was met. Faculty submission of teaching-related and research-related grant and contract proposals will be encouraged. However, research activities have been limited due to the closure of Frasch Annex.

Analysis from data concludes the objective was met. All 10 (100%) of the submitted teaching-related proposals were funded. The total amount of funds received from these proposals was \$77,516. Faculty submission of teaching-related and research-related grant and contract proposals will be encouraged. However, research activities have been limited due to the closure of Frasch Annex. Please raise the benchmark to 80%.

2 Assessment and Benchmark

Benchmark: 50% of the tenured and tenure-track faculty who hold doctorate degrees will submit research-oriented grant or contract proposals, and 50% of the submitted research-oriented grant or contract proposals will receive funding.

2.1 Data

Year	Faculty that submitted research-oriented grant or contract proposals		Submitted research-oriented grant or contract proposals that received funding	
	#	%	#	%
2013	-	75.0%	-	100%
2014	-	89.0%	-	75.0%

2015	-	67.0%	-	83.0%
2016	8/9	89.0%	11/12	92.0%
2017	7/9	77.8%	8/9	88.9%

2.1.1 Analysis of Data and Plan for Continuous Improvement

2015:

We will raise the benchmark to 75%

The remaining two were pending at the end of this reporting period. The total amount of funds received was \$43,830. We will raise the benchmark to 75%.

2016:

Benchmark was not raised. Eight out of nine (89%) tenured and tenure-track faculty holding doctorates as well as the instructor holding a doctoral degree submitted a total of 12 research-oriented grant or contract proposals. This objective was met.

Benchmark was not raised, however the objective was met for 50% and 75% benchmark. Eleven out of 12 (92%) of the submitted research-oriented grant or contract proposals received funding. The total amount of funds received was \$111,000. The largest single funded grant proposal (\$63,000) was jointed submitted by a faculty member in the Department of Biology and the Department of Agriculture.

2017:

Seven out of nine (77.8%) tenured and tenure-track faculty holding doctorates submitted a total of nine research-oriented grant or contract proposals. This objective was met. Faculty submission of research-related grant and contract proposals will be encouraged. However, research activities have been limited due to the closure of Frasch Annex. Please raise the benchmark to 75%.

Eight out of nine (88.9%) of the submitted research-oriented grant or contract proposals received funding. The total amount of funds received was \$37,600. This objective was met. Faculty submission of research-related grant and contract proposals will be encouraged. However, research activities have been limited due to the closure of Frasch Annex. Please raise the benchmark to 75%.

3 Assessment and Benchmark

Benchmark: Sufficient research space will be available for faculty who conduct research.

3.1 Data

2016:

Research during this reporting period was done in two labs in old Frasch Hall (one of the two labs had formerly been the office for Visiting Lecturers), teaching labs, and two faculty offices. All research labs in Frasch Annex were closed beginning summer 2014 (see Analysis section). This objective was not met.

2017:

All research labs in Frasch Annex were closed beginning summer 2014 (see Analysis section). Research during this reporting period was done in two labs in old Frasch Hall (one of the two labs had formerly been the office for Visiting Lecturers), teaching labs, and two faculty offices. This objective was not met.

3.1.1 Analysis of Data and Plan for Continuous Improvement

2016:

All of the department's research labs finally reopened in January 2009 following a three year closure due to Hurricane Rita. However, beginning in 2010 plans called for the entire Frasch Annex (where all except for one of the research labs were located) to be closed for renovation for at least one year beginning at some unspecified time in the near future. Late in 2010 we were told that construction would begin in spring 2011 and we began discarding unneeded supplies and surplus unwanted equipment as well as packing up supplies and equipment to move into storage in the old part of Frasch Hall. However, in early January 2011 we were told that the construction was postponed "until February or March 2012 at the latest" so the labs remained open. In April 2012 the Department was informed that construction would not begin earlier than spring 2013. The consensus of the faculty who did research in the annex was to continue research activities in the Annex and not move out any research equipment/supplies until construction

was eminent. In fall 2012 we were told work would begin in summer 2013, and in spring 2013 we were told work would begin in spring 2014. In spring 2014 we were assured that construction would begin “after summer 2014” and we were told we had to move everything (all equipment, supplies, and movable furniture) out of the Annex by the end of summer 2014, which we did, because construction would begin “during fall 2014”. Construction finally began in January 2016 and was supposed to take one year. At the end of this reporting period (December 31, 2016) construction was still ongoing.

2017:

In fall 2017, the Annex was finally opened; however, several labs still needed contractual work. At the end of this reporting period (December 31, 2017), contractual work was still ongoing. Expected completion is in 2018.