



## Mathematical Sciences

#8 Plan cycle - 8  
Plan cycle 2021/2022  
7/1/21 - 6/30/22

## Introduction

### **Unit Mission:**

The Department of Mathematical Sciences (DMS) supports the mission of McNeese State University by offering quality programs of study in the mathematical sciences and secondary mathematics education for degree and non-degree students. These programs include college-level courses for majors, college-level service courses for non-majors, and special courses by which professionals may update their knowledge in various areas of the mathematical sciences. The department fosters programs in cooperation with area agencies to upgrade the quality of mathematics education in the region. The department also promotes and encourages scholarly activities and community and University service from all DMS faculty.

### **Institutional Mission Reference:**

The DMS supports the institutional mission of offering curricula distinguished by academic excellence. We offer a baccalaureate degree in mathematical sciences with concentrations in mathematics, mathematics education, physics education, statistics, and physics. We also offer a master's degree in mathematical sciences, with concentrations in mathematics, computer science, and statistics.



MSCI	MPHY	1	0	0	0	1	0	1	0	0	1	2	0	0	0	0	3	3	1
	MTED	0	3	1	1	5	0	6	5	2	6	19	0	8	6	3	7	24	2
	PYED	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0	0	1	0
	STAT	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	1	0
	(blank)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total</b>		<b>2</b>	<b>4</b>	<b>3</b>	<b>4</b>	<b>13</b>	<b>0</b>	<b>10</b>	<b>8</b>	<b>4</b>	<b>13</b>	<b>35</b>	<b>2</b>	<b>11</b>	<b>7</b>	<b>6</b>	<b>16</b>	<b>40</b>	<b>6</b>

2020-2021:

Major	Conc.	Summer						Fall						Spring					
		F	S	J	Sr	T	CMP	F	S	J	Sr	T	CMP	F	S	J	Sr	T	CMP
MSCI	CMPS	0	0	0	0	0	0	0	1	0	0	1	0	0	1	0	0	1	0
	MATH	1	0	1	3	5	1	1	1	2	3	7	1	1	1	3	4	9	3
	MPHY	0	0	1	1	2	0	3	0	1	3	7	0	3	0	0	2	5	0
	MTED	0	2	3	1	6	0	7	8	5	5	25	0	4	7	4	5	20	2
	PYED	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
	STAT	0	0	1	1	2	0	0	0	1	1	2	0	0	0	0	0	0	0
	(blank)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>Grand Total</b>		<b>2</b>	<b>2</b>	<b>6</b>	<b>6</b>	<b>16</b>	<b>1</b>	<b>11</b>	<b>10</b>	<b>9</b>	<b>12</b>	<b>42</b>	<b>1</b>	<b>8</b>	<b>9</b>	<b>7</b>	<b>11</b>	<b>35</b>	<b>5</b>

2021-2022:

Major	Conc.	Summer						Fall						Spring					
		F	S	J	Sr	T	CMP	F	S	J	Sr	T	CMP	F	S	J	Sr	T	CMP
MSCI	CMPS	0	0	1	0	1	0	0	0	1	1	2	0	0	0	1	1	2	0
	MATH	0	1	0	3	4	0	0	1	1	6	8	0	0	1	0	6	7	2
	MPHY	0	1	0	1	2	0	1	2	0	2	5	2	1	0	1	0	2	0
	MTED	1	1	5	1	8	0	7	5	11	3	26	0	3	5	6	6	20	1
	PYED	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	STAT	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0
	(blank)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0
<b>Grand Total</b>		<b>1</b>	<b>3</b>	<b>6</b>	<b>5</b>	<b>15</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>13</b>	<b>12</b>	<b>41</b>	<b>2</b>	<b>5</b>	<b>6</b>	<b>9</b>	<b>13</b>	<b>33</b>	<b>2</b>

Percentage Change between 2017-2018:

Major	Fall	Total	% Change
MSCI	2017	44	15.909%
	2018	51	
<b>Total</b>	<b>2017</b>	<b>44</b>	<b>15.909%</b>
	<b>2018</b>	<b>51</b>	

Percentage Change between 2018-2019:

Major	Fall	Total	% Change
	2018	51	

MSCI	2019	35	-31.37%
Total	<b>2018</b>	<b>51</b>	<b>-31.37%</b>
	<b>2019</b>	<b>35</b>	

Percentage Change between 2019-2020:

Major	Fall	Total	% Change
MSCI	2019	35	20%
	2020	42	
Total	<b>2019</b>	<b>35</b>	<b>20%</b>
	<b>2020</b>	<b>42</b>	

Percentage Change between 2020-2021:

Major	Fall	Total	% Change
MSCI	2020	42	2.380%
	2021	41	
Total	<b>2020</b>	<b>42</b>	<b>2.380%</b>
	<b>2021</b>	<b>41</b>	

### 1.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

The number for the MATH concentration is up, while the number for the MTED concentration is down. Some students are switching from MTED to MATH. For fall 2017 to spring 2018, the MTED number has improved a bit. By increasing the number of faculty involved in recruiting we hope to improve the MTED number a bit more. We will be coordinating with the Department of Education Professions in their new recruitment effort.

Following up on the observations made by Jessica Hutchings regarding enrollment in the various concentrations, we have assigned a new advisor to work specifically with students in the statistics concentration in order to strengthen enrollment in this concentration. We are also coordinating with Dwight Bertrand who is leading recruitment efforts in STEM disciplines in the College of Science and Agriculture.

2018-2019:

Benchmark was exceeded in the period Fall 2017-2018, but not in the period Spring 2018-2019. Persistence from Fall 2018-Spring 2019 has decreased compared with previous periods. We plan to communicate with basic studies to understand the reasons for this decrease.

Advisors from the math faculty participated in the Geaux Teach recruitment day organized by the education department.

The new advisor for statistics, Dr. Berken, has been advising several students in the statistics concentration.

2019-2020:

While we lost students in the program comparing Fall 18 to Fall 19, particularly in Math Ed, we gained students going from Fall 19 to Spring 20 and ended up with almost the same number of students in Spring 20 as we had in Spring 19. Therefore this rebound helped the enrollment to stabilize.

One change that we made this year that has helped the Math Ed concentration is the appointment of Christine Eastman as a Math Ed advisor. She is also a co-coordinator for recruitment and is well connected to the education department and state education initiatives. She will continue to assist students with Praxis preparation which will greatly help our retention of Math Ed students.

2020-2021:

We are very pleased that we have met our benchmark, achieving a 20% increase from Fall 19 to Fall 20. In particular, we gained students in the Mathematical Physics and Math Education concentrations. Toward continuous improvement, we plan to involve more DMS faculty in the 'All Call' recruitment effort.

2021-2022:

We did not meet the benchmark. We are encouraged by the fact that the percentage decrease was less than the University-wide enrollment percentage decrease. To try and increase enrollment, we have a new brochure to hand out to prospective students that displays our current concentrations, offerings, and student organizations.

## 2 Assessment and Benchmark

Benchmark: Increase enrollment by 5% each year, overall and in each graduate program offered by the department.

- MSCI - MS Mathematical Sciences
  - CSCI - Computer Science
  - MATH - Mathematics
  - STAT - Statistics

Prior to 2021-2022, the benchmark was to track graduate student enrollment in each concentration. Maintain or exceed previous year's enrollment numbers of declared majors.

### 2.1 Data

Graduate Enrollment:

Major	Conc.	2013-2014			2014-2015			2015-2016			2016-2017			2017-2018		
		U	F	S	U	F	S	U	F	S	U	F	S	U	F	S
MSCI	CSCI	3	12	0	8	19	17	8	13	6	0	0	1	1	2	2
	MATH	2	11	9	6	7	7	5	6	9	8	11	10	7	13	9
	STAT	0	2	4	1	2	1	0	2	1	1	2	2	1	2	2
<b>Total</b>		<b>5</b>	<b>25</b>	<b>13</b>	<b>15</b>	<b>28</b>	<b>25</b>	<b>13</b>	<b>21</b>	<b>16</b>	<b>9</b>	<b>13</b>	<b>13</b>	<b>9</b>	<b>17</b>	<b>13</b>

Major	Conc.	2018-2019			2019-2020			2020-2021			2021-2022			2022-2023		
		U	F	S	U	F	S	U	F	S	U	F	S	U	F	S
MSCI	CSCI	1	4	3	1	3	1	0	0	0	0	1	2			
	MATH	5	6	7	2	6	7	1	5	2	3	3	3			
	STAT	0	0	1	1	3	5	2	5	5	4	3	4			
<b>Total</b>		<b>6</b>	<b>10</b>	<b>11</b>	<b>4</b>	<b>12</b>	<b>13</b>	<b>3</b>	<b>10</b>	<b>7</b>	<b>7</b>	<b>7</b>	<b>9</b>			

Graduate Completers:

Major	Conc.	2013-2014			2014-2015			2015-2016			2016-2017			2017-2018		
		U	F	S	U	F	S	U	F	S	U	F	S	U	F	S
MSCI	CSCI	0	0	0	0	3	3	0	6	6	0	0	0	0	0	0
	MATH	0	0	0	2	2	1	0	0	3	1	1	1	1	4	2
	STAT	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>2</b>	<b>6</b>	<b>4</b>	<b>0</b>	<b>7</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>4</b>	<b>4</b>

Major	Conc.	2018-2019			2019-2020			2020-2021			2021-2022			2022-2023		
		U	F	S	U	F	S	U	F	S	U	F	S	U	F	S
MSCI	CSCI	0	0	0	0	2	1	0	0	0	0	0	0			
	MATH	2	1	2	0	0	2	0	2	0	0	0	1			
	STAT	0	0	0	0	0	0	0	0	1	1	0	1			
<b>Total</b>		<b>2</b>	<b>1</b>	<b>2</b>	<b>0</b>	<b>2</b>	<b>3</b>	<b>0</b>	<b>2</b>	<b>1</b>	<b>1</b>	<b>0</b>	<b>2</b>			

Percentage Change between 2017-2018:

Major	Fall	Total	% Change
MSCI	2017	17	-41.177%
	2018	10	
<b>Total</b>	<b>2017</b>	<b>17</b>	<b>-41.177%</b>
	<b>2018</b>	<b>10</b>	

Percentage Change between 2018-2019:

Major	Fall	Total	% Change
MSCI	2018	10	20%
	2019	12	
<b>Total</b>	<b>2018</b>	<b>10</b>	<b>20%</b>
	<b>2019</b>	<b>12</b>	

Percentage Change between 2019-2020:

Major	Fall	Total	% Change
MSCI	2019	12	-16.667%
	2020	10	
<b>Total</b>	<b>2019</b>	<b>12</b>	<b>-16.667%</b>
	<b>2020</b>	<b>10</b>	

Percentage Change between 2020-2021:

Major	Fall	Total	% Change
MSCI	2020	10	-30%
	2021	7	
<b>Total</b>	<b>2020</b>	<b>10</b>	<b>-30%</b>
	<b>2021</b>	<b>7</b>	

### 2.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

The improvement in numbers can be partly explained by our efforts to provide courses in the evenings and the summer. This has been successful in attracting part-time students to our program.

Following up on the observations made by Jessica Hutchings regarding enrollment in the various concentrations, we have assigned a new advisor to work specifically with students in the statistics concentration in order to strengthen enrollment in this concentration. To strengthen enrollment and completion in CSCI, coordination with EECS will be necessary in order to provide additional 600-level CSCI

electives. Increased demand for lower level CSCI courses has made it difficult for EECS to continue to offer these electives.

2018-2019:

Our graduate program is mostly populated by graduates of our own undergraduate mathematics program. In the case of mathematics education, the qualification to teach dual enrollment courses is one of the main reasons to take graduate courses. Senior privilege for undergraduates has helped recruit a number of students to the graduate program. Our plan for continuous improvement is to inform students of the senior privilege option earlier in their undergraduate careers.

2019-2020:

From Spring 19 to Spring 20, the number of students in the Math concentration held steady, while the Stat concentration saw a nice increase.

The gain seen in the Stat concentration is due primarily to students who have taken an interest in doing research projects with Dr. Berken. She now advises both undergrad and graduate students in the statistics concentration. In an effort to continuously improve, Dr. Lee has also been added as a statistics advisor. Her area of research is different from Dr. Berken's and will provide another research outlet for students concentrating in statistics. This should draw additional students to the program.

We will continue our efforts to maintain and strengthen the Math concentration by reaching out to graduates from similar disciplines such as Engineering and Math Education. We have had good success recruiting students from these areas.

Recruitment and retention in the CS concentration is hindered by the lack of availability of 600 level CS electives.

2020-2021:

Overall the enrollment in our MS program decreased this year. The statistics concentration again saw an increase. Dr. Berken and Dr. Lee continue to work with these students through advising and mentoring of special projects. A number of our promising math undergraduates opted to enroll in PhD programs at other institutions immediately after completing their BS degrees. This has affected our MS program enrollment. We will renew efforts to make undergraduates aware of senior privilege opportunities as this has been an effective way to recruit graduate students in the past.

2021-2022:

We did not meet the Benchmark. Enrollment has appeared to hold steady with increases in Summer and Spring enrollment and only a slight decrease in Fall enrollment. Graduate information is also included in the new brochure.

### 3 Assessment and Benchmark

Benchmarks:

- A persistence rate (retained students from fall Y1 to spring Y1) of 85%.
- A retention rate of 70% from Y1 to Y2.
- A retention rate of 55% from Y1 to Y3.
- A retention rate of 45% from Y1 to Y4.
- A 4-year graduation rate of 35%.
- A 5-year graduation rate of 40%.
- A 6-year graduation rate of 45%.

Major:

- MSCI - Bachelor of Science in Mathematical Sciences
- MSCP - Bachelor of Science in Mathematical Sciences

#### 3.1 Data

2012:

					Retention Rate	Graduation Rate
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Major	Cohort Size	Same Major?	Persistence Rate		Y1 to Y2		Y1 to Y3		Y1 to Y4		4-Year		5-Year		6-Year	
			#	%	#	%	#	%	#	%	#	%	#	%	#	%
			MSCI	11*	Same	7	63.6	3	27.3	3	27.3	3	27.3	1	9.1	1
Changed	4	36.4			7	63.6	5	45.5	3	27.3	4	36.4	5	45.5	5	45.5
<b>Total</b>	<b>11</b>	<b>100</b>			<b>10</b>	<b>90.9</b>	<b>8</b>	<b>72.7</b>	<b>6</b>	<b>54.5</b>	<b>5</b>	<b>45.5</b>	<b>6</b>	<b>54.5</b>	<b>6</b>	<b>54.5</b>
MSCP	1	Same	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		Changed	1	100	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
		<b>Total</b>	<b>1</b>	<b>100</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>	<b>0</b>	<b>0.0</b>
<b>Total</b>	12	Same	7	58.3	3	25.0	3	25.0	3	25.0	1	8.3	1	8.3	1	8.3
		Changed	5	41.7	7	58.3	5	41.7	3	25.0	4	33.3	5	41.7	5	41.7
		<b>Total</b>	<b>12</b>	<b>100</b>	<b>10</b>	<b>83.3</b>	<b>8</b>	<b>66.7</b>	<b>6</b>	<b>50.0</b>	<b>5</b>	<b>41.7</b>	<b>6</b>	<b>50.0</b>	<b>6</b>	<b>50.0</b>

\*2 students were previously undeclared before declaring MSCI.

2013:

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	
					#	%	#	%	#	%	#	%	#	%	#	%
MSCI	6*	Same	6	100	3	50.0	2	33.3	1	16.7	1	16.7	0	0.0	0	0.0
		Changed	0	0.0	0	0.0	1	16.7	1	16.7	0	0.0	0	0.0	1	16.7
		<b>Total</b>	<b>6</b>	<b>100</b>	<b>3</b>	<b>50.0</b>	<b>3</b>	<b>50.0</b>	<b>2</b>	<b>33.3</b>	<b>1</b>	<b>16.7</b>	<b>0</b>	<b>0.0</b>	<b>1</b>	<b>16.7</b>

\*2 students were previously undeclared before declaring MSCI.

2014:

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	
					#	%	#	%	#	%	#	%	#	%	#	%
MSCI	5	Same	1	20.0	1	20.0	0	0.0	0	0.0	0	0	0	0	0	0
		Changed	2	40.0	0	0.0	2	40.0	1	20.0	0	0	1	20	1	20
		<b>Total</b>	<b>3</b>	<b>60.0</b>	<b>1</b>	<b>20.0</b>	<b>2</b>	<b>40.0</b>	<b>1</b>	<b>20.0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>20</b>	<b>1</b>	<b>20</b>

2015:

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	
					#	%	#	%	#	%	#	%	#	%	#	%
MSCI	10	Same	8	80.0	7	70.0	6	60.0	3	30.0	3	30.0	3	30.0	3	30.0
		Changed	0	0.0	1	10.0	2	20.0	3	30.0	2	20.0	2	20.0	2	20.0
		<b>Total</b>	<b>8</b>	<b>80.0</b>	<b>8</b>	<b>80.0</b>	<b>8</b>	<b>80.0</b>	<b>6</b>	<b>60.0</b>	<b>5</b>	<b>50.0</b>	<b>5</b>	<b>50.0</b>	<b>5</b>	<b>50.0</b>

2016:

Major	Cohort	Same	Persistence Rate		Retention Rate						Graduation Rate					
			#	%	Y1 to Y2		Y1 to Y3		Y1 to Y4		4-Year		5-Year		6-Year	



MSCI	7	Same	4	57.1															
		Changed	3	42.9															
		<b>Total</b>	<b>7</b>	<b>100</b>															

### 3.1.1 Analysis of Data and Plan for Continuous Improvement

2018-2019:

We have not met the stated benchmarks.

We have already taken a step toward improving retention in our program by revising the prerequisites for MATH 190. The prerequisites for MATH 190, beginning calculus, have been changed to ensure a stronger background in precalculus topics, specifically to ensure a stronger background in trigonometry. In this way we expect better pass rates in MATH 190. We consider MATH 190 to be a gateway course for our majors. We will continue to look for ways to help students succeed in their early coursework. We will also make a greater effort to determine the reasons (other than course performance) that lead to students leaving our program.

2019-2020:

Of the 7 students in the 2019 cohort, 6 persisted from fall to spring, meeting the 85% persistence rate benchmark. Just over 70% were retained from Y1 to Y2 as McNeese students, but one of these students changed majors.

2020-2021:

Of the 9 students in the 2020 cohort, 8 persisted from fall to spring, meeting the 85% persistence rate benchmark, however, 3 of these students changed majors (ie. they did not persist in the MSCI program).

We are pleased to see that they enrolled in the spring, even if they moved to a different major, because of the many hardships which could have prevented them from reenrolling in this unprecedented year.

2021-2022:

- Benchmarks have been met every year except the 2019 cohort.
- The Fall 2015 cohort graduate rate benchmark was met.
- Fall 2016, 2017, 2018, and 2020 cohorts have been well retained, even though they may not have stayed as a math major.
- Fall 2019 rates suffered due to COVID and hurricanes, but the Fall 2022 rates have recovered.

## Performance Objective 2 **Provide a comprehensive curriculum that reflects disciplinary foundations and remains responsive to contemporary developments, student and workforce demand, and university needs and aspirations.**

### 1 Assessment and Benchmark

Benchmark: The BS in Mathematical Sciences program faculty meet once per academic year to review student progress, curricular offerings, and appropriate professional contacts and opportunities.

#### 1.1 Data

2017-2018:

One full faculty meeting was held, along with numerous meetings of smaller subgroups of faculty.

2018-2019:

Two full faculty meetings and several meetings of subgroups of faculty were held.

2019-2020:

Two full faculty meetings and several meetings of subgroups of faculty were held. In the later half of Spring 20, all communication took place remotely using email, moodle, and zoom in response to Covid 19.

2020-2021:

Two full faculty meetings were held virtually by zoom. Individual and small group meetings were also held virtually. Communication by email was key to completion of departmental business and decision making.

2021-2022:

Our Fall 2021 meeting resumed in person. Individual and small group meetings also continued in person.

### **1.1.1 Analysis of Data and Plan for Continuous Improvement**

2017-2018:

Faculty discussed curriculum changes. We are considering adding a minor in applied statistics and adding a concentration in computer science. Faculty also discussed changes to the Mathematics Education concentration in response to the new state requirements.

2018-2019:

In the fall of 2018, the department added a minor in applied statistics and a concentration in computational science. We have coordinated with the education department to revise the math education concentration in accordance with new state requirements.

2019-2020:

Course designed for Elementary math teachers were redesigned this year. A great deal of discussion took place to determine whether these courses would be placed on the Statewide Articulation Matrix. At the request of Dr. Ogea, they were not added to the matrix. Plans are underway to eliminate Math 231 and retain Stat 231 in its place eliminating the need to crosslist these courses.

2020-2021:

As of this year's curriculum changes, Math 231 is no longer available in the catalog and Stat231 is now in use by all programs previously requiring Math 231. Discussion has taken place regarding modifying some concentrations due to loss of faculty and limited ability to offer certain courses. Student progress and strategies to address their current needs were reviewed through communication with individual advisors.

2021-2022:

In-person meetings helped promote communication and collaboration. Changes were made to Math 105, 113, 170, and 190 to include using ALEKS as a placement tool.

## **2 Assessment and Benchmark**

Benchmark: The MS in Mathematical Sciences program faculty will meet once per academic year to review student progress, curricular offerings, and appropriate professional contacts and opportunities.

### **2.1 Data**

2017-2018:

One full faculty meeting was held, along with numerous meetings of smaller subgroups of faculty.

2018-2019:

Two full faculty meetings were held, along with numerous meetings of smaller subgroups of faculty.

2019-2020:

Two full faculty meetings and several meetings of subgroups of faculty were held. In the later half of Spring 20, all communication took place remotely using email, moodle, and zoom in response to Covid 19.

2020-2021:

Two full faculty meetings were held virtually by zoom. Individual and small group meetings were also held virtually. Communication by email was key to completion of departmental business and decision making.

2021-2022:

Our Fall 2021 meeting resumed in person. Individual and small group meetings also continued in person.

### **2.1.1 Analysis of Data and Plan for Continuous Improvement**

2017-2018:

Faculty discussed curriculum changes. The department is considering adding a graduate-level biostatistics course.

Update: In subsequent informal meetings, a firm decision was made to add the course mentioned above. This decision was made in response to a request from the biology department. They wish to use this course in their new graduate program. Other discussion in small group meetings has centered on finding ways to meet the needs of students in the statistics concentration. It is often difficult to populate the upper level/graduate applied statistics courses. To address this, faculty are proposing an applied statistics minor which will include cross-listed courses that serve both undergraduates and graduate students. The addition of students seeking the applied statistics minor should help to populate courses needed by our graduate students. Small group meetings were also held to track MSCI majors' progress and anticipate the need for course offerings.

2018-2019:

The department has added a biostatistics course offering, which is now available to all concerned majors. To attract students, and for the sake of greater clarity, course titles and course descriptions have been improved.

2019-2020:

A greater number of graduate level courses will be offered in hybrid or online format. This trend started before Covid 19 hit, but is now greatly spurred on by the need to move classes online. Faculty are redesigning courses to facilitate this change.

2020-2021:

Work continues on development of hybrid courses at the graduate level. Communication with advisors is key to addressing the challenges presented by lower enrollment in the graduate program. Class offerings are reviewed to ensure viability.

2021-2022:

In-person meetings helped promote communication and collaboration. We discussed which courses would meet the needs of our current graduate students and reviewed courses that had not been taught recently.

### **Performance Objective 3 Graduates will find employment in mathematical science careers or further their education in the mathematical sciences.**

#### **1 Assessment and Benchmark**

Benchmark: 80% of graduates of the BS in Mathematical Sciences will find employment in mathematical science careers or further their education in the mathematical sciences within two years of graduation.

##### **1.1 Data**

2017-2018:

Of the 78 graduates from spring 2011 through spring 2018, there are 65 whose employment status is known. Of these 65 graduates, 58 have found employment in mathematical sciences careers or have furthered their education in the mathematical sciences within two years of graduation. This is approximately 89% of graduates for whom employment status is known.

2018-2019:

We consider only the Fall 2017-Spring 2018 cohort for this year's data. Going back to 17-18 fits within the two year window described in the benchmark. There are six people in this cohort. All are either pursuing further studies or are employed. One is teaching at the high school level. Three are in graduate school in math or math-related areas. Two are employed in math/computer science-related jobs.

2019-2020:

We consider only the Fall 2018-Spring 2019 cohort for this year's data. 9 of the 11 graduates in this cohort are either pursuing further studies or are employed in a math-related area.

2020-2021:

We consider only the Fall 2019-Summer 2020 cohort for this year's data. 6 of the 9 graduates in this cohort are known to be either pursuing further studies or are employed in a math-related area. We do not have information on 3 of the graduates in this cohort.

2021-2022:

We consider only the Fall 2020-Spring 2021 cohort for this year's data. 5 of the 6 graduates in this cohort are known to be either pursuing further studies or are employed in a math-related area. We do not have information on 1 of the graduates in this cohort.

### 1.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

The department's efforts to update our records of the status of graduates (their employment or further studies) in a more timely manner have been mostly successful.

We will break down our data by cohort beginning next year. We have consistently exceeded our benchmark. In particular, our students have great success finding teaching positions regardless of their concentration.

2018-2019:

This is the first year that we have reported cohort data instead of cumulative data. The benchmark has been met. We have had 100% success with this cohort. Everyone is involved in math or math-related jobs or studies.

2019-2020:

Benchmark is met with a success rate of 82%.

2020-2021:

Since we do not have employment information on 3 of the 9 graduates in this cohort, we do not know if the benchmark is met. However, the remaining 6 are involved in math-related jobs or studies.

2021-2022:

Benchmark is met with a success rate of 83%.

## 2 Assessment and Benchmark

Benchmark: 80% of graduates of the MS in Mathematical Sciences program will find employment in mathematical science careers or further their education in the mathematical sciences within two years of graduation.

### 2.1 Data

2017-2018:

From spring 2011 to present, the program has graduated 82 students. 39/41 (95%) of students whose status after graduation is known are working in a field related to the mathematical sciences or went on to continue their studies with further graduate coursework.

This year the department has information for all of our graduates. Seven of the eight have found teaching positions, two at the college level and five at the secondary level.

2018-2019:

We again consider only the Fall 2017-Spring 2018 cohort. There were seven graduates in this cohort. All of these graduates are involved in teaching.

There are five teaching at the high school level, one at the community college level, and one at the university level.

2019-2020:

We consider only the Fall 2018-Spring 2019 cohort for this year's data. All 3 of the MS graduates in this cohort are either pursuing further studies or are employed in a math-related area.

2020-2021:

We consider only the Fall 2019-Summer 2020 cohort for this year's data. 3 of the 5 MS graduates in this cohort are known to be either pursuing further studies or are employed in a math-related area. We do not have information on 2 of the graduates in this cohort.

2021-2022:

We consider only the Fall 2020-Spring 2021 cohort for this year's data. 2 of the 3 MS graduates in this cohort are known to be either pursuing further studies or are employed in a math-related area. We do not have information on 1 of the graduates in this cohort.

### 2.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

We will break down our data by cohort beginning next year. We have consistently exceeded our benchmark.

2018-2019:

We are happy to have our students filling teaching positions in mathematics. With one exception, these are local positions. There is a critical need for mathematics educators in our area.

2019-2020:

Benchmark is met with a success rate of 100%.

2020-2021:

Since we do not have employment information on 2 of the 5 graduates in this cohort, we do not know if the benchmark is met. However, the remaining 3 are involved in math-related jobs or studies.

2021-2022:

Since we do not have employment information on 1 of the 3 graduates in this cohort, we do not know if the benchmark is met.

## Performance Objective 4 Engage in collaborative ventures and campus and community activities that enhance economic development, cultural and artistic growth, and or educational experiences for the SWLA region and beyond.

### 1 Assessment and Benchmark

Benchmark: 50% of faculty will serve as academic advisors.

#### 1.1 Data

Academic Year	Faculty members that served as faculty advisors	
	#	%
2013-2014	—	60%
2014-2015	—	56%
2015-2016	—	50%
2016-2017	—	53%
2017-2018	8/14	57%
2018-2019	9/16	56%
2019-2020	11/16	69%
2020-2021	9/15	60%
2021-2022	9/15	60%

#### 1.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

The department will appoint additional faculty members as advisors, specifically to advise students in the statistics concentration in order to help recruit and retain students in this concentration.

2018-2019:

The benchmark is met. With the added statistics advisor, we increased the number of advisors from eight to nine. Note that we also filled two vacant faculty positions prior to this academic year; hence, the total number of faculty changed from 14 to 16.

2019-2020:

The benchmark is met. Two new advisors were added, Dr. Christine Eastman and Dr. Meesook Lee, in order to better serve students in the MATH Education and Statistics concentrations.

2020-2021:

The benchmark is met. Two faculty members discontinued their service as advisors this year. Roles of advisors will be reviewed and adjusted as needed.

2021-2022:

The benchmark is met. One faculty member discontinued advising due to resignation; however, one of our senior instructors assumed those advisor duties. Roles of advisors will be reviewed and adjusted as needed.

## 2 Assessment and Benchmark

Benchmark: 50% of faculty will serve on college or University committees.

Prior to 2018-2019, the benchmark was 40% of faculty members.

### 2.1 Data

Academic Year	Faculty members that served on college or University committees	
	#	%
2013-2014	—	50%
2014-2015	—	50%
2015-2016	—	50%
2016-2017	—	53%
2017-2018	8/14	57%
2018-2019	8/16	50%
2019-2020	8/16	50%
2020-2021	8/15	53%
2021-2022	10/15	67%

#### 2.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

There are more opportunities for instructors to serve on college and University committees now that we have fewer PhD faculty. We will raise our benchmark to 50% for 2018-2019.

2018-2019:

The benchmark was met. We will consider raising the benchmark to 60%.

University committees on which our faculty are serving include RNL, Graduate Council, Retroactive Withdrawals, GEAC, Athletic Advisory Committee, Faculty Senate, Academic Integrity, and Undergraduate Curriculum Committee.

2019-2020:

The benchmark was met.

In addition to the committees listed above, Dr. Christine Gorton now serves on the University Advising Committee.

2020-2021:

The benchmark was met. University committee membership remained roughly the same as last year for our department. Committee activities moved to a virtual environment.



2021-2022:

The benchmark was met. Our department continues to serve on many University committees. A number of these relate to advising and the growing challenges associated with freshman mathematics and incoming freshmen.

### 3 Assessment and Benchmark

Benchmark: At least two meetings per semester of the local student chapter of the Mathematical Association of America (MAA) will be held.

Prior to 2016-2017, the benchmark was for monthly meetings, however, this was revised to two per semester.

#### 3.1 Data

2017-2018:

At least two meetings per semester of the local student chapter of the MAA were held.

2018-2019:

At least two meetings per semester of the local student chapter of the MAA were held.

2019-2020:

At least two meetings per semester of the local student chapter of the MAA were held.

2020-2021:

While students did participate virtually in MAA competitions, local meetings of the MAA were not held this year due to hurricanes, Covid, etc.

2021-2022:

At least two meetings per semester of the local student chapter of the MAA were held.

#### 3.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

Information on student attendees at the local MAA meetings was recorded. This information was used to recruit students for volunteering at MathCounts, AMC, etc., as well as the student team competition and integration bee at the MAA section meeting.

2018-2019:

Our student leaders did an excellent job recruiting their fellow students for competitions and volunteering by using data collected at our meetings.

2019-2020:

These meetings resulted in collaboration among students to not only participate in the annual regional MAA meeting and competitions, but also to carry out an impressive upgrade to the appearance of our tutoring center. Students involved in MAA gathered during fall break to paint formulas and helpful information on the walls of the tutoring center in a very aesthetically pleasing fashion.

2020-2021:

Benchmark was not met. Faculty and students look forward to returning to regular MAA meetings in the upcoming year.

2021-2022:

The benchmark was met. We plan to continue holding at least two meetings per semester to engage our undergraduate and graduate students.

### 4 Assessment and Benchmark

Benchmark: Student teams will participate in an MAA mathematics team competition in the spring in conjunction with the annual section meeting of the MAA. Individual students will compete in the annual integration bee held at the same meeting.

#### 4.1 Data

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Academic Year	# of math students that attended the MAA meeting	# of students that competed in the integration bee	# of students that competed in the team competition	# of students giving talks
2013-2014	8	4	—	—
2014-2015	8	5	5	3
2015-2016	8	3	4	3
2016-2017	9	5	5	3
2017-2018	10	7	8	0
2018-2019	13	6	8	2
2019-2020	15	7	8	1
2020-2021	8	2	8	0
2021-2022	6	4	6	0

#### 4.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

Faculty are once again pleased with the results of both the integration bee (a top 10 of 45) and the student team competition (one team in the top three).

2018-2019:

Tracking student attendance (see above) and good student leadership resulted in more interest on the part of the students in attending and participating in our sectional mathematics meeting. We will continue to recruit our best students to leadership positions.

Britt Qualls took first place in the graduate student paper competition. Jason Jones took second place in the same competition. Undergraduate Tabitha Buford made the final round (top 10%) in the student integration bee. Two other students made the semi-final round (top 30%) in the same competition. One of our four-member undergraduate teams ranked 7/19 in the student team competition for undergraduates.

2019-2020:

Haile Gilroy took first place in the graduate student paper competition.

2020-2021:

8 students attended the virtual conference this year to participate in the competitions. We were pleased that we had enough students interested in the team competition to form 2 teams. Disaster fatigue did not dampen their enthusiasm for carrying on this tradition.

2021-2022:

6 students attended the conference this year which resumed in person. One of the undergraduate teams placed 4th in the MAA Undergraduate Team Competition at the MAA Section meeting in Natchitoches in March.

## 5 Assessment and Benchmark

Benchmark: The Department will organize volunteers to help at the McNeese annual Literary Rally; MathCounts, a national middle school mathematics competition; and the American Mathematics Competition, a high school mathematics competition. These events provide recruiting opportunities.

### 5.1 Data

2017-2018:

For MathCounts the department provided eight faculty and one student volunteer. There were nine faculty volunteers for the Literary Rally and 10 faculty volunteers for the AMC.

2018-2019:

For MathCounts and the Literary Rally the numbers were similar to last year. Due to time conflicts and faculty out on sick leave we were unable to support the AMC competition for high school students.

2019-2020 :

For MathCounts the department provided seven faculty and three students volunteers. There were nine faculty volunteers for the Literary Rally and eight faculty and 5 student volunteers for the AMC.

2020-2021:

Literary Rally, MathCounts, and the American Mathematics Competition were not held on campus this year due to hurricane damage, COVID, etc.

2021-2022:

Faculty members volunteered to proctor exams for Literary Rally. MathCounts and the American Mathematics Competition were not held on campus this year due to hurricane damage and COVID.

### 5.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

The department is pleased with the strong turnout of faculty volunteers in all of the events mentioned for this benchmark.

2018-2019:

We will try to resume support for the AMC next year.

2019-2020:

Volunteer participation for MathCounts was exceptionally good this year. The Engineering Society which sponsors the event expressed gratitude for our help. We are also pleased that we were able to resume our AMC competition this spring before Covid 19 became an issue.

2020-2021:

Benchmark was not met as competitions were not held. We look forward to resuming these activities next year.

2021-2022:

Benchmark was not met as some competitions were not held. New faculty members were assigned the responsibility of holding the American Mathematics Competition on campus for next year.

## 6 Assessment and Benchmark

Benchmark: 40% of faculty will be involved in recruiting students.

Prior to 2016-2017, the benchmark was 25% of faculty members.

### 6.1 Data

Academic Year	Faculty members involved in recruiting students	
	#	%
2013-2014	—	50%
2014-2015	—	62%
2015-2016	—	50%
2016-2017	—	40%
2017-2018	—	29%
2018-2019	7/16	44%
2019-2020	5/16	31%
2020-2021	4/15	27%
2021-2022	5/15	33%

### 6.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

The benchmark was not met. Efforts will be made to increase faculty involvement in recruiting. We will coordinate with Dwight Bertrand to implement the College of Science and Agriculture recruiting project as well as the DEP Geaux Teach project.

2018-2019:

The benchmark was met. The new event for us this past year was the Geaux Teach recruitment fair held by the education department. We will continue to look for new avenues for recruitment.

2019-2020:

The benchmark of 40% was not met. Recruitment coordinators for our department tend to try to cover all recruiting duties themselves rather than creating new obligations for other faculty members. Efforts will be made to change this practice in the coming year.

2020-2021:

The benchmark of 40% was not met. Involvement in recruitment activities was inhibited by the extreme hardships of this year. Faculty will be encouraged to participate in the ALL CALL effort in addition to preview days.

2021-2022:

The benchmark was not met; however, we had more faculty involvement in several recruiting events.

## **Performance Objective 5 Demonstrate excellence in teaching in order to enhance student recruitment, retention, and graduation.**

### **1 Assessment and Benchmark**

Benchmark: The department will achieve an average score of at least 85% on the student evaluations of instruction (SEIs).

Prior to 2020-2021, the benchmark was 80%.

Prior to 2016-2017, the benchmark was 70%.

#### **1.1 Data**

Academic Year	Average score
2013-2014	90.84%
2014-2015	91.00%
2015-2016	90.02%
2016-2017	90.00%
2017-2018	91.00%
2018-2019	91.00%
2019-2020	89.20%
2020-2021	85%
2021-2022	88%

#### **1.1.1 Analysis of Data and Plan for Continuous Improvement**

2017-2018:

The SEI benchmark will be raised to 90% starting next year.

2018-2019:

This year's number included Spring 18, Fall 18, and Spring 19. We remain committed to raising the benchmark to 90%.

2019-2020:

Since the benchmark is still listed as 80% (rather than the proposed 90%), we have met the benchmark. We saw a small decrease in our SEI average. We feel that this is due to SEIs moving online. We are actually pleasantly surprised that the SEI average did not dip lower than 89%. We now propose

that a new benchmark of 85% be set given that we will continue to administer SEIs online.

2020-2021:

The benchmark is met. DMS scored 85% which was significantly lower than our usual SEI result which hovers around 90%. Contributing factors include that this reflects only Spring 21 results and response rate was low. Spring 21 had the unique disadvantage of being the semester directly following our hurricane semester. Students were still experiencing hardship and having great difficulty in classes due to lack of adequate preparation in the prerequisite class taught in the fall. This affected SEI scores. We expect that we will continue to face challenges of this nature, but are determined help students bridge the gap as they continue in their programs.

2021-2022:

The benchmark was met. Due to the voluntary nature of SEIs and the low response rates, we are satisfied that the benchmark has been met.

## 2 Assessment and Benchmark

Benchmark: Graduating seniors in the Mathematical Sciences will rate the quality of their academic experience in the DMS at 3.00 or greater on a 4-point scale on the departmental exit survey.

### 2.1 Data

Academic Year	Graduating seniors' quality of academic experience rating
2013-2014	3.80/4
2014-2015	3.80/4
2015-2016	3.40/4
2016-2017	3.30/4
2017-2018	4.00/4
2018-2019	3.78/4
2019-2020	—
2020-2021	4/4
2021-2022	3.5/4

#### 2.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

Although numerical data is not available for this item this year, we had the opportunity to speak with several of our graduates about their academic experience. As a result, the department is exploring ways to better prepare students who are going on to work on PhDs in mathematics.

Update: Since our last submission, we were able to locate the data needed for this item. Our results showed improvement.

2018-2019:

There were 9 responses for this report. The comments included with these ratings indicated that the students were pleased with their experience. One comment suggested that a greater emphasis be placed on solving real world problems within the program.

2019-2020:

Data not available.

2020-2021:

There were 4 responses for the exit survey this year and each of these students rated their academic experience as a 4.

2021-2022:

The benchmark has been met. We are pleased that, considering the difficult circumstances of the past two years, our students still had a positive academic experience.

### 3 Assessment and Benchmark

Benchmark: Prior to 2019-2020, the benchmark was ... At least 60% of College Algebra students participating in the Developmental Education/Co-requisite Delivery Pilot will achieve a passing grade in both MATH 110 and MATH 113.

#### 3.1 Data

Academic Year	Students who passed 110 and 113	
	#	%
2013-2014	—	44%
2014-2015	89/182	49%
2015-2016	102/187	55%
2016-2017	76/123	62%
2018-2019	117/183	64%
2019-2020	113/192	59%
2020-2021	104/186	56%
2021-2022	113/183	62%

#### 3.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

Based on the greater level of success achieved last year, the benchmark will be raised to 60% for next year.

2018-2019:

The benchmark is met. Based on all years of data and factors related to the students populating these courses, we would like to raise the benchmark to 60% at this time.

2019-2020; 2020-2021:

We met the original benchmark of 50%, but did not meet the proposed benchmark of 60% in 19-20 and 20-21. Students in these courses were taught online for half of Spring 20 and the full Fall 20/Spring 21 year in the midst of tremendous hardship. Faculty look forward to working with students face to face in Fall 2022, particularly for Math110/113.

2021-2022:

The benchmark has been met. Most classes were around a size of 30. In order to keep meeting the benchmark, we will try to keep the size of these classes smaller.

### Performance Objective 6 Demonstrate commitment to research and creative and scholarly activity.

#### 1 Assessment and Benchmark

Benchmark: At least 25% of faculty members who hold doctorate degrees will be involved in publication or presentations.

#### 1.1 Data

Academic Year	Faculty members that are involved in publication or presentations	
	#	%
2013-2014	—	30%
2014-2015	—	57%

2015-2016	—	43%
2016-2017	—	33%
2017-2018	—	43%
2018-2019	4/7	57%
2019-2020	3/7	43%
2020-2021	4/7	57%
2021-2022	3/7	43%

### 1.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

For next year, the DMS is considering including all faculty in the above data instead of just doctorates since over half of our faculty are at the rank of instructor.

2018-2019:

For this year we consider only doctorate degrees. Of the four listed, two made submissions; one was a publication and one was a presentation.

2019-2020:

Benchmark is met. Of the three listed, one made submissions; one was a publication and one was a presentation.

2020-2021:

Benchmark is met. There was a 5th publication by an instructor not holding a doctorate this year. We are pleased with these results, especially considering the circumstances of this year.

2021-2022:

Benchmark is met. Even with events of the past 2 years, we are pleased with the number of faculty still publishing and presenting.

## 2 Assessment and Benchmark

Benchmark: At least 40% of faculty members will be involved in individual or directed research.

### 2.1 Data

Academic Year	Faculty members that are involved in individual or directed research	
	#	%
2013-2014	—	38%
2014-2015	—	44%
2015-2016	—	44%
2016-2017	—	40%
2017-2018	—	50%
2018-2019	6/16	38%
2019-2020	7/16	44%
2020-2021	5/15	33%
2021-2022	7/15	47%

### 2.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

A greater number of faculty at the rank of instructor were involved in directed and individual research this year. The benchmark will be raised to 50% for 2018-2019.

2018-2019:

The benchmark was not quite met. We will make an effort to involve more faculty in undergraduate directed research for capstone projects.

2019-2020:

The benchmark of 40% was met. We were successful in involving more faculty in undergraduate directed research for capstone projects. A new effort is underway to have students participate in interdisciplinary projects. Dr. Merchant (Chemistry) will jointly work with Dr. Ornas to mentor a student project this fall.

2020-2021:

Benchmark of 40% was not met. Fewer students completed capstone projects this year; therefore, there were fewer mentors. Barring unforeseen events, there should be greater freedom next year for students to interact with faculty and generate ideas for research projects.

2021-2022:

Benchmark was met. Several faculty members mentored students on undergraduate and graduate projects. The independent study course has become popular among our students.

### 3 Assessment and Benchmark

Benchmark: At least 40% of faculty will attend at least one professional meeting.

Prior to 2016-2017, the benchmark was 30% of faculty.

#### 3.1 Data

Academic Year	Faculty members that attended at least one professional meeting	
	#	%
2013-2014	—	63%
2014-2015	—	56%
2015-2016	—	56%
2016-2017	—	53%
2017-2018	—	86%
2018-2019	9/16	56%
2019-2020	14/16	88%
2020-2021	6/15	40%
2021-2022	8/15	53%

#### 3.1.1 Analysis of Data and Plan for Continuous Improvement

2017-2018:

This year the MAA section meeting was held in nearby Lafayette, Louisiana. This explains the relatively high number of 86%. The benchmark will be raised to 50% for 2018-2019.

2018-2019:

In the interest of continuous improvement, we request to raise our benchmark to 60%.

2019-2020:

We reached an all time high of 88% this year. This year the MAA section meeting was held in New Orleans, Louisiana and most of the faculty attended. This was just prior to the Covid outbreak in that area and we are happy to report that NONE of the faculty or students who attended contracted Covid as a result. Praise God!!

2020-2021:

Benchmark met. Although in-person meetings were not an option this year, some faculty did take



advantage of the opportunity to attend virtual professional meetings.

2021-2022:

Benchmark was met. Most faculty included in the total attended and in person conference while a few still attended virtually.