University of Arkansas at Monticello
Academic Unit Annual Report

Unit: Mathematics and Natural Sciences

Academic Year: 2019-2020

What is the Unit Vision, Mission and Strategic Plan including goals, actions and key performance indicators (KPI)?

The School of Mathematical and Natural Sciences comprises the disciplines of biology, chemistry, computer science, earth science, mathematics, mathematics education, physical science, physics, and science education. The School has majors in Biology, Chemistry, Mathematics, and Natural Sciences.

Mission

The mission of the School of Mathematical and Natural Sciences is to offer specialization in biology, chemistry, mathematics, and natural science and to provide opportunities for all students to enhance their understanding of science and mathematics. Curricula offered in the School prepare graduates for careers in industry and teaching, for graduate studies, and for admission to professional programs including allied health, dentistry, medicine, optometry, pharmacy, and veterinary medicine. This mission is fulfilled through the following goals:

1. To provide academic programs which promote the development of professional scientists and mathematicians and provide opportunities for all students to enhance their understanding of the natural sciences and mathematics.

2. To prepare individuals for successful careers in industry and teaching and for graduate studies in science and mathematics.

3. To provide curricula for pre-professional studies in dentistry, medicine, optometry, pharmacy, and allied health (physical therapy, radiological technology, respiratory therapy, medical technology, occupational therapy, and dental hygiene).

4. To provide technical and analytical courses to support studies in agriculture, forestry, nursing, physical education, psychology, and wildlife management.

5. To serve the general education program through courses in biology, chemistry, earth science, mathematics, physics, and physical science that provide a basic background for a baccalaureate degree.

In Table 1, provide assessment of progress toward meeting KPIs during the past academic year and what changes, if any, might be considered to better meet goals.

Table 1: Assessment of Key Performance Indicators –From 2019-2020 Academic Year

KPI	Assessment of Progress	Implications for Future Planning/Change
Listed under the goal: Maintaining Quality Academic Programs		
1A. Review the Chemistry curriculum and update as needed. Review individual courses to see if improvements are needed to stay current. (Carried over from last year)	Discussions were held at Chemistry faculty meetings on two occasions. 1. Some felt that the Advanced Lab Techniques was not meeting the needs of the students. 2. Discussion of which topics needed to be covered in General Chem I and II took place. 3. The usage of the American Chemical Society Standardized Final Exams were discussed. 4. There was also discussion of class sizes, especially in General Chemistry and Organic Chemistry. 5. Pre-requisites and supportive requirements for specific courses and the major were discussed.	1. In the Chemistry major, students can choose between Adv. Lab Techniques, Chemistry Seminar or Senior Research. A decision was made to offer Chemistry Seminar instead of Adv. Lab Techniques in the Spring 2020 term. Possibly due to the interruption of the spring term by COVID, some felt the seminar course didn't work very well. One faculty member strongly wants to go back to Adv. Lab Techniques in 2021. He has volunteered to teach the bulk of the course himself rather than having the course team taught as in the past. 2. It was agreed that covering chapters 1-10 in General Chemistry was very difficult in a normal semester. It was decided that Chapters 1-9 will be the normal chapters covered in Chem I and some shorter topics, such as nuclear chemistry or even some basic organic chemistry will be brought forward into Chem I. 3. Everyone likes the use of the ACS final examinations as an external assessment of our courses as well as our program. We will continue to use those exams in General Chem II, Organic Chemistry II, and Biochemistry. 4. It is not uncommon for General Chemistry classes to reach 50+ enrollment when only two sections are offered in the fall term. A decision was made to offer three sections of Chem I each fall as long as we have the staff to do so. Organic Chemistry I enrollment has been greater than 40 students recently; however, the recently drop in numbers has lowered that number into the low 30's which is fairly manageable with one lecture and two labs. When enrollment improves, a second section will be considered. 5. There was discussion about setting an ACT pre-requisite for General Chemistry, or completion of Introduction to Chemistry. Many other

KPI	Assessment of Progress	Implications for Future Planning/Change
		schools do this; however, those schools are somewhat larger and offer several specialized General Chemistry courses. For instance, some schools offer one for science majors, another for agriculture, one for nursing, and sometimes even another specifically for education majors. UAM's size doesn't make that practical. Some felt that adding the minimum ACT requirement would put a strain on the non-science programs that require general chemistry. No action was taken in this area at this time. Discussions will continue in this area. It was recommended that majors that require only one semester of chemistry take Introduction to Chemistry rather than General Chemistry I because Introduction to Chemistry touches on all topics in less depth, while someone taking Chemistry I would miss several topics discussed in Chem II.
1B. Review the Natural Science curriculum and update as needed. (Carried over from last year)	Discussions were held at Chemistry and Biology faculty meetings on 3 occasions. 1. Core course requirements were discussed 2. Both the specific upper level courses and the number of electives were discussed.	The Natural Science major mainly serves students interested in allied health fields and those interested in science education. 1. In the past several years, very few pursuing this degree have been planning on a career in education. Some faculty think it would be beneficial to those in the allied health area to make the major more health science related. Some have encouraged making courses like Medical Terminology, Medical Ethics, and Biological Statistics requirements for this degree. Others felt that the beauty of this major is the flexibility it offers which allows students to create their own curriculum to fit their needs. At this time, the core requirements are not being changed, but advisors will encourage students to take the courses most appropriate for their career choice. We are considering the addition of a statistics class to this major. 2. Since the Natural Science major doesn't require a minor, there are many hours that can serve as electives. Approximately 20 hours of upper level courses outside the degree requirements are needed to reach the 40 upper level hours needed for graduation. We are still considering adding more elective hours within the major.

KPI	Assessment of Progress	Implications for Future Planning/Change
1C. Review retention and success rates of our majors compared to ACT scores and if needed, set standards for admission into specific majors and programs.	Discussions were held at faculty meetings on 3 occasions. The topics discussed were: 1. Review the minimum ACT for Principles of Biology I and Anatomy and Physiology I 2. Putting a minimum ACT requirement to enter any of the pre-medicine related majors 3. Putting a minimum ACT requirement to enter General Chemistry I.	The review will continue into the following year; however, some initial decisions were made on moving forward. 1. The minimum ACT of 22 needed for placement into both Principles of Biology I and Anatomy and Physiology I appear to be serving their intended purpose. No changes in the ACT were recommended at this time. 2. Putting an ACT minimum to enter a pre-medicine related field has been discussed numerous times; however, faculty cannot agree on the minimum score needed for entrance to that program. It is very likely that a minimum score will be established in the future with the alternative route to the program being successful completion of a chemistry course and a biology course. 3. This was discussed in 1A part 5 above.
1D. Review remedial mathematics courses and make appropriate changes to allow students the best chance of being successful at completing their gateway mathematics course in a timely fashion.	1. Cut-off scores for entering Quantitative Literacy (QL) and Quantitative Literacy with Review (QLwR) were examined. 2. Pre-requisite pathways to QL and QLwR were reviewed.	1. Some consideration was given to lowering the MATH ACT cut-off score to 15 instead of 16 to enter QLwR. The course coordinator for that course felt that since QLwR already has a lower success rate than QL, it was clear the added course time wasn't enough to offset the poor background of the very low scoring students. One faculty even proposed raising the minimum score needed to enter that course. Student performance will continue to be evaluated, and changes may be made in the future. 2. The current ACT cut-off scores to enter QL and QLwR didn't change. Other pathways to enter those courses were considered. Currently, a student with MATH ACT 16-18 can enter QL after completion of Advanced Industrial Math or Intermediate Algebra. The intermediate algebra course is certainly adequate in preparation for this course. The limited amount of data from students taking that course after completing Advanced Industrial Math doesn't provide a definitive answer on whether the students are prepared for QL. Students with MATH ACT 1-15 are allowed to enter QLwR after completion of Advanced Industrial Math. Studies in mathematics remediation are always ongoing.

KPI	Assessment of Progress	Implications for Future Planning/Change
1E. Review the pre-engineering curriculum and make changes as needed.	Discussions were held with pre-engineering advisors on numerous occasions. Some things discussed were: 1. Setting up a good curriculum that would effectively serve students that want to transfer to ANY engineering program after completion of 2 or 3 years 2. Developing an Introduction to Engineering course for first year pre-engineering students 3. Look at possibilities of engineering related programs at the technical campuses.	It is strongly felt that our pre-engineering program is not adequate. The bulk of the students that choose this program are weak in mathematics and don't have a real understanding of what is needed to be successful in engineering. 1. Setting up a curriculum that would allow students to transfer to any engineering program is very difficult because of the variety of different engineering fields. The curriculum at several universities' engineering programs were reviewed. The common theme for those programs' non-majors courses, in addition to gen ed courses, is applied mathematics, computer programming, and physics. Since many of our pre-engineering majors remain at UAM as mathematics majors, we began looking at an applied mathematics degree with emphasis in computation. This began the discussion of the Mathematics-Data Science Option which was developed and approved for the upcoming academic year. Students taking this degree plan can easily transfer after 2-3 years to an engineering program and be very well prepared. They can also stay and complete their degree at UAM and enter a graduate program in engineering. 2. An Introduction to Robotics and Basic Engineering course was recently developed; however, we have not had success in getting students to take that course, which indicates that students listed as pre-engineering aren't really devoted to that major. We are upgrading our advising efforts to get more students into that course. We will likely offer that class as a spring offering instead of a fall offering in hopes that course has a better draw at that time. 3. Recently we talked with staff at the Crossett campus about their Electromechanical program as a pathway to engineering. This year, each student that listed pre-engineering was given this option as a pre-engineering pathway. They can complete the technical program, then complete the Bachelor of Applied Science degree at UAM, or transfer to another university with an engineering program. If this program were on the main campus, it would be hugely popular.

KPI	Assessment of Progress	Implications for Future Planning/Change
2A. Upgrade the computer facilities in teaching spaces	1. A list of computers in all the classrooms, and their purchase date, was developed. 2. Requests were made to IT and the University administration to repair or upgrade the computers 3. An inventory of lab computers was done	1. Several classroom computers were more than 10 years old. Some would not run the software needed in some courses. 2. The University administration provided funding for new computers for the ten Science Center classrooms. All ten have been installed and are greatly appreciated by all. 3. The physics lab computer network had computers that were approximately 15 years old. The classroom computers that were operational were moved to the physics lab and upgraded by adding memory. They have been put into the Physics network which mainly functions to operate data collection equipment used in physics experiments. Memory was used from the computers that had outlived their useful lifetime to upgrade the computers in physics. Other laboratory computers still need updating and will be done in the future.
2B. Undergo a major Science Center cleanup	1. M&R equipment that is no longer used or cannot be repaired. 2. Deep cleaning classrooms, labs, and offices 3. Clean the external surfaces of the Science Center	1. A huge amount of old computers, printers, and other equipment was stored in the Science Center lounge that had been submitted to M&R. Some equipment had been stored there for years awaiting pickup. Calls were made and after several requests, the equipment was removed and the lounge was thoroughly cleaned and decluttered. Old audiovisual equipment from classrooms, and some old lab equipment was also picked up. Numerous other items still need to be removed in the future. 2. Several classrooms were cleaned to address mold issues. Dr. Taylor did major cleaning in the Organic/Biochemistry lab to remove mold. Maintenance thoroughly cleaned many of the heat/air units in the building and replaced filters. Some units were replaced or shut off completely because of leakage. Door molding was repaired or replaced on offices and labs as needed. 3. The outer surface of the Science Center was pressure washed in a limited fashion due to leakage. In places that couldn't be pressure washed, mold was removed using bleach solutions and low pressure spray.

Strategic Plan 2020-21
Unit: School of Mathematics and Natural Sciences

Goal	Strategies/Action Steps	Desired Outcomes	Measures/Assessments of Success/Progress	Projected Timeline
1. Develop, deliver, and maintain quality academic programs	1A Get the Math and Science faculty up to speed with the new assessment process	1A. Each faculty member understands the assessment process and is able to provide information for the assessment report at the end of the year	By the end of the academic year, have the data collected and rough draft of the assessment report written, and the final draft completed in the summer.	1 year
	1B. Review the Natural Science curriculum and update as needed. (Carried over from last year)	1B. Develop curricular options that are more appropriate for allied health majors since that group is the largest segment of those choosing this major.	By the end of the academic year, have submitted proposals to C&S for any changes needed.	1 year
	1C. Review scheduling for the Quantitative Literacy with Review (QLwR) and College Algebra with Review (CAwR) courses and improve offering times.	1C Make the courses accessible for all students.	Offer the appropriate number of sections, and offer labs in a variety of different formats that fit students that are only on campus MWF or TTH.	1 Year
	1D. Make sure our courses match up to the Arkansas Course Transfer System (ACTS) syllabi in terms of content	ID Have all Math and Science courses listed in ACTS cover all topics listed in the ADHE course syllabus	Have all changes made to our course offerings by the beginning of Fall 2021. Have all C&S proposals needed completed and any book changes done.	1 Year
	1E. Have faculty review open source and electronic book options for courses	IE. Provide quality instructional materials at the lowest cost possible.	Reduce the cost to the students for textbooks in each course without sacrificing quality.	2 Years

Goal	Strategies/Action Steps	Desired Outcomes	Measures/Assessments of Success/Progress	Projected Timeline
2. Provide an excellent environment for learning	2A. Upgrade Lab equipment	2A. Make purchases that modernize the labs in terms of equipment	New or upgraded equipment in Chemistry. Additional equipment and supplies in Earth Science labs. New or upgraded equipment and additional supplies for Biology Additional equipment and improving the computer network in physics	1-3 Years
	2B. Undergo a major Science Center cleanup	Assess the status of all equipment in the Science Center labs. Make a repair plan for equipment that is repairable. M&R equipment that is no longer used or cannot be repaired.	Have a plan for all equipment in the Science Center to be usable on a regular basis. Equipment that is not will be submitted to M&R and removed	1-2 Years
3. Retain and recruit high achieving faculty and staff	3A. Replace vacancies with properly trained and experienced faculty.	3A. Have faculty with appropriate credentials to teach the courses needed. When possible improve diversity among the faculty.	Have all major courses taught by excellent teachers that are also involved in scholarly activities with students, are good advisors, and fulfill the other roles of the faculty in the academic community.	1 Year
	3B Provide appropriate faculty development opportunities to faculty	3B Provide opportunities for faculty to improve in some aspect of their job either through on-campus or off-campus professional development.	Have at least 50% of the faculty take part in professional development during the next fiscal year.	1 Year
4. Enrollment and retention gains	4A. Recruit local schools	4A Increase faculty interaction with students and teachers in the local school districts.	Have one or more faculty from the unit build a relationship with each local school district	1-2 Years
	4B Recruit schools outside our local area	4B Find opportunities to put UAM faculty in contact with teachers and students outside our normal recruiting areas.	Have a minimum of ten events such as Science Fair, workshops, robotics competitions, math contests, or other events to build relationship with teachers and students from schools outside our normal service area.	1-2 Years

List, in Table 2B, the Academic Unit Student Learning Outcomes (SLO) and the alignment with UAM Student Learning Outcomes, and Unit Vision, Mission, and Strategic Plans

Table 2A: University Student Learning Outcomes

Communication: Students will communicate effectively in social, academic, and professional contexts using a variety of means, including written, oral, quantitative, and/or visual modes as appropriate to topic, audience, and discipline.
Critical Thinking: Students will demonstrate critical thinking in evaluating all forms of persuasion and/or ideas, in formulating innovative strategies, and in solving problems.
Global Learning: Students will demonstrate sensitivity to and understanding of diversity issues pertaining to race, ethnicity, and gender and will be capable of anticipating how their actions affect campus, local, and global communities.
Teamwork: Students will work collaboratively to reach a common goal and will demonstrate the characteristics of productive citizens.

Table 2B: Unit Student Learning Outcomes

Unit Student Learning Outcomes	University Student Learning Outcome	Alignment with UAM/University Vision, Mission and Strategic Plan	Alignment with Unit Vision, Mission, and Strategic Plan
Be able to clearly express mathematical and/or scientific ideas in oral and written communication	Communication Critical Thinking Global Learning Teamwork	These skills are necessary for our graduates to contribute to the economic and quality of life indicators in the community, state, and region.	The curricula in Math and Sciences are the foundations for the content knowledge needed for this SLO. The upgrading of the major program requirements is important in keeping the programs up to date and relevant.
Be able to demonstrate the ability to apply scientific and/or mathematical concepts to real world situations	Critical Thinking Global Learning Teamwork	This is the basis for our graduates to succeed in a global environment, be successful in entrepreneurial endeavors, and be a productive member of the community	Our mission states that we wish to provide opportunities for our students to improve their understanding of math and science concepts and provide proper training in these concepts in our support courses to other academic units.

Unit Student Learning Outcomes	University Student Learning Outcome	Alignment with UAM/University Vision, Mission and Strategic Plan	Alignment with Unit Vision, Mission, and Strategic Plan
Have a core knowledge of the major discipline	Communication Critical Thinking	These are skills required to be a productive member of any educational, healthcare, industrial or business in our community.	Core knowledge for all students is part of our mission statement, and is related to the curricula upgrades in the strategic plan. Improvements to provide an excellent learning environment are crucial for developing the core knowledge of the discipline
Be prepared for immediate employment in a scientific, technical, medical, or educational environment	Communication Critical Thinking Global Learning Teamwork	The world is becoming more technical in nature and our graduates must be prepared to fill the technology related roles in the community.	It is a major component found in our mission statement. It is strongly related to the updating of curricula as part of our strategic plan to make sure our programs are current and relevant.
Be prepared to enter graduate or professional school in the appropriate area	Communication Critical Thinking Global Learning Teamwork	A major factor in quality of life in any community is the quality of the health care system. Our programs are very successful at preparing students for all health care professional programs.	One of the major components of the mission statement for Math and Sciences is to prepare our students for graduate and pre-professional programs.

Describe how Student Learning Outcomes are assessed in the unit and how the results/data are used for course/program/unit improvements?

The Student Learning Outcomes (SLOs) are measured in our courses through student performance on exams, quizzes, laboratory exercises, field course journals, homework assignments, research projects, reports, and presentations. Further assessment is done using performance on nationally normed examinations such as the American Chemical Society (ACS) standardized final examinations and pre-professional placement exams such as GRE, PCAT, MCAT, OAT, and DAT and post graduate placement into graduate programs, professional programs, and employment.

Public/Stakeholder/Student Notification of SLOs

List all locations/methods used to meet the HLC requirement to notify the public, students and other stakeholders of the unit SLO an. (Examples: unit website, course syllabi, unit publications, unit/accreditation reports, etc.)

- Posted in the glass case at the main entrance to the Science Center
- Posted on the School of Math and Sciences website at: http://uam-web2.uamont.edu/pdfs/mnsciences/mns%20student%20learning%20outcomes.pdf
- Course syllabi

Enrollment

Table 3: Number of Undergraduate and Graduate Program Majors (Data Source: Institutional Research)

UNDERGRADUATE PROGRAM MAJOR: BIOLOGY					
Classification	**Fall 2017**	**Fall 2018**	**Fall 2019**	**3-Year Total & Average**	
Freshman	36	20	43	99 / 33.0	
Sophomore	18	20	19	57 / 19.0	
Junior	9	23	20	52 / 17.3	
Senior	21	32	20	73 / 24.3	
Post Bach	0	0	0	0 / 0.0	
Total	85	95	102	282 / 94.0	
UNDERGRADUATE PROGRAM MAJOR: CHEMISTRY					
Classification	**Fall 2017**	**Fall 2018**	**Fall 2019**	**3-Year Total & Average**	
Freshman	10	8	16	34 / 11.3	
Sophomore	6	10	12	28 / 9.3	
Junior	8	16	12	36 / 12.0	
Senior	7	14	13	34 / 11.3	
Post Bach	0	0	0	0 / 0	
Total	31	48	53	132 / 44.0	

UNDERGRADUATE PROGRAM MAJOR: MATHEMATICS					
Classification	**Fall 2017**	**Fall 2018**	**Fall 2019**	**3-Year Total & Average**	
Freshman	9	3	10	22 / 7.3	
Sophomore	4	5	2	11 / 3.7	
Junior	3	0	3	6 / 2.0	
Senior	4	4	0	8 / 2.7	
Post Bach	0	0	0	0 / 0	
Total	20	12	15	47 / 15.7	

UNDERGRADUATE PROGRAM MAJOR: NATURAL SCIENCE					
Classification	**Fall 2017**	**Fall 2018**	**Fall 2019**	**3-Year Total & Average**	
Freshman	13	18	8	39 / 13.0	
Sophomore	5	9	8	23 / 7.7	
Junior	5	6	4	15 / 5.0	
Senior	5	2	5	12 / 4.0	
Post Bach	0	0	0	0 / 0	
Total	28	35	25	88 / 29.3	
UNDERGRADUATE PROGRAM MAJOR: PRE-ENGINEERING					
Classification	**Fall 2017**	**Fall 2018**	**Fall 2019**	**3-Year Total & Average**	
Freshman	5	6	10	21 / 7.0	
Sophomore	1	4	1	6 / 2	
Junior	0	0	1	1 / 0.3	
Senior	0	0	0	0 / 0	
Post Bach	0	0	0	0 / 0	
Total	6	10	12	28 / 9.1	

UNDERGRADUATE PROGRAM MAJOR: PRE-MEDICINE					
Classification	**Fall 2017**	**Fall 2018**	**Fall 3019**	**3-Year Total & Average**	
Freshman	13	15	17	45 / 15.0	
Sophomore	5	14	8	27 / 9.0	
Junior	5	13	12	30 / 10.0	
Senior	5	9	10	24 / 6.0	
Post Bach	0	0	0	0 / 0	
Total	28	51	47	126 / 42	
UNDERGRADUATE PROGRAM MAJOR: PRE-PHARMACY					
Classification	**Fall 2017**	**Fall 2018**	**Fall 2019**	**3-Year Total & Average**	
Freshman	4	7	9	20 / 6.7	
Sophomore	5	3	4	12 / 4.0	
Junior	3	7	4	14 / 4.7	
Senior	2	3	3	8 / 2.7	
Post Bach	0	0	0	0 / 0	
Total	14	20	20	54 / 18.0	
UNDERGRADUATE PROGRAM MAJOR: ALLIED HEALTH					
Classification	**Fall 2017**	**Fall 2018**	**Fall 2019**	**3-Year Total & Average**	
Freshman	14	18	10	42 / 14.0	
Sophomore	0	10	8	18 / 6.0	
Junior	2	3	3	8 / 2.7	
Senior	0	3	2	5 / 1.7	
Post Bach	0	0	0	0 / 0	
Total	16	34	23	73 / 24.3	

The above tables reflect the number of students within each major, so a student can be shown multiple times in this table. In Math and Sciences very few students are listed as a single major. Many that are listed as a single major are likely not listed correctly in WeevilNet. Typically students in the pre-medicine and pre-pharmacy plans are also biology and chemistry double majors. Pre-engineering plan students are listed as mathematics majors, and Allied Health plan students are listed as Natural Science majors. This is necessary due to financial aid laws prevent students from getting federal aid unless they are enrolled in a major that leads to a specific degree. A lot of effort goes into making sure the students are properly listed; however, it is impossible to get 100% accuracy since students are often indecisive about their major.

The School of Mathematical and Natural Sciences does not have any graduate programs; however a few graduate courses are offered from time to time largely as support courses for the graduate program in the School of Forestry, Agriculture and Natural Resources.

What do the data indicate in regard to strengths, weaknesses, opportunities for growth and threats to effectiveness?

Strengths

- Biology, Chemistry, Pre-Medicine, and Pre-Pharmacy have healthy numbers
- While some growth is attributed in part to better record keeping in WeevilNet, there is growth is indicated in Biology and Chemistry over the past several years.
- Allied Health shows good numbers of freshmen and sophomores; however, most of these students are not planning on a four year degree, and if they are successful they will likely be accepted into their professional program prior to earning an associates degree. This is one reason for the severe drop in numbers after the sophomore year. Several students each year are accepted into professional programs such as Dental Hygiene, Radiology Technology, Physical Therapy Assistant, etc... Many of these students apply to programs and never tell their advisor that they have even applied.

Weaknesses

- Mathematics remains near the program viability line of 4 graduates per year over the previous three years. We are losing mathematically talented recruits to universities that have engineering programs. Lack of Physics or Engineering majors greatly limits the number of students coming to UAM that might potentially end up as a math major.
- Pre-Engineering program doesn't have the equipment, facilities, or faculty to offer even a basic program to recruit future engineers. In the past year, we began recommending that many of the pre-engineering students consider a technical program in an engineering related field at one of the Colleges of Technology. Every entering freshman listed as pre-engineering was forwarded to Dr. David Streeter at the Crossett campus for more information about the Electromechanical program. Several were very interested in that program. Two were planning on entering that program until they learned that it would greatly conflict with athletics. If that program were offered on the main campus, it would be huge.

Opportunities for Growth

- Degree pathways may have had a small impact on the number of majors in our unit; however, the decline isn't noticeable in the first year.
- Development of admissions standards for specific degree plans that go above and beyond Degree Pathways would likely help students get into a major more appropriate for their skill level and improve retention. Several discussions on this topic have taken place, but we have not reached a consensus on what the cut off scores should be, and what performance levels in coursework would justify allowing that student to enter that major. With UAM's size, it is difficult to offer other options the way many larger universities do.

- Development of a true pre-engineering program, and possibly even an associates degree in that area, could increase the number of freshmen coming into UAM. With the high schools in the region greatly increasing the focus on STEM, and specifically engineering, more and more students are seeking majors in this area. For UAM to become a viable option for these students, it would require an initial investment to upgrade some facilities, and possibly even hire a faculty to teach the engineering specific courses. The possibility of offering some pre-engineering technical courses for the Crossett programs on the main campus could lead more students into their programs.

Threats to Effectiveness

- UAM was the exclusive Rural Health Early Acceptance Program for the UAMS College of Pharmacy. Last year, they have expanded that program to include University of Arkansas, Arkansas Tech, and Arkansas State University. Over the past two years we have been able to recruit students from other parts of the state because of our exclusive agreement. This year, we had no applicants from the other part of the state inquire about this program at UAM. This is partly due to the fact they can get the same program from the other universities; however, another likely cause is that the main recruiter at UAMS responsible for this program left. He was instrumental in getting several students from around the state to come to UAM.
- Reduced activity of the STEM Center on campus has made it more difficult for our faculty to interact with public school teachers and administrators in the area. This will hinder our ability to provide focused recruiting to the more academically prepared students that might be interested in our programs. Attempts have been made to offset this by becoming involved with the Southeast Arkansas Educational Cooperative. Two workshops in the sciences were hosted on that site. A third was planned, but cancelled due to COVID.
- Budgetary limitations are making it difficult to provide learning experiences for STEM majors. Increasing costs of supplies and travel are overtaking our budget. We are unable to make equipment repairs and purchases simply because the funds aren't available. In some instances, faculty are buying materials out-of-pocket in order to have appropriate supplies for instructional purposes.
- Loss of faculty. It is difficult to retain excellent faculty when they can start over at another university at the Assistant Professor level at a higher salary than they are currently earning at UAM. Several faculty applied for jobs at other universities in the past year. I'm certain that Math and Sciences will have some retire at the end of the upcoming academic year, leave for other universities, or leave academia all together.
- Declining population of students in southeast Arkansas school districts is making it difficult to recruit the higher ACT students needed for our programs. This makes it even more important that we recruit every high achieving student from this region. Fall enrollment for 2020 looks promising at this point. This class has a larger number of high ACT scores than in the previous 2-3 years.
- The pandemic has caused for instruction to moved to online during the spring and summer. This fall, some courses will be hybrid because of class size. At any time, we could be moved back to online instruction. Even though faculty are putting a large amount of effort into making these courses as high quality as possible, the courses are still not as good as our face to face versions.
- The cost of college appeared to be a common problem among the students in the past year. Students often changed majors because they felt it took too long to reach employment in some majors. Others avoided classes simply because of the cost of the books.

Progression/Retention Data

Table 4: Retention/Progression and Completion Rates by Major (Data Source: Institutional Research)

First of all, there are questions concerning the accuracy of this data. It is common to have Biology majors switch to a Natural Science major as a junior or even a senior because they cannot pass the rigorous upper level biology and chemistry courses needed for their degree. The data we received indicates that zero majors switched from their initial major as a sophomore to another major in Math and Sciences. The data also showed that zero majors switched from a Math and Science major to a major in another academic unit. While this is not a common occurrence, it does happen. It appears that once a change is made, it does away with the previous academic history Another issue with the data is that the number of majors in an academic year (Table 3) differs from the data provided for Retention and Progression (Table 4). While I wouldn't expect a perfect match due to students not completing 30 hours in an academic year, the discrepancy is quite large in some cases. The addition of a second major, or the removal of a second major, or changing your plans without officially having your major changed has created a nightmare for accurate record keeping. It gives the appearance of trends that aren't really there, or hides trends that would be more evident with more accurate records and data collection. We work closely with every advisee. We help those students make the best choices possible. It's impossible to see meaningful trends simply by looking at the numbers below without knowing the cause for a student leaving the major or not returning to UAM.

Name of Major: **Biology**

Academic Year:	2016 – 2017		2017-2018		2018 – 2019		2019-2020	
Number and percentage of majors who:	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Entered as a Sophomore	18		28		22		19	
Graduated in major	10	56	5	18	0	0	0	0
Graduated in a second UAM major within the unit	3	17	1	4	0	0	0	0
Remain enrolled as an undergraduate at UAM	5	28	17	61	22	100	13	68
Accepted into a pre-professional program prior to earning BS degree	0	0	1	4	0	0	2	11
Left Major	3	11	5	18	0	0	4	21
Students that have not earned a BS degree that earned an AA degree	3	17	6	21	2	9	4	21

Name of Major: **Biology**

Academic Year:	2016 – 2017		2017-2018		2018 – 2019		2019-2020	
Number and percentage of majors who:	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Entered as a Junior	22		16		24		20	
Graduated in major	19	86	10	63	2	8	7	35
Graduated in a second UAM major within the unit	12	55	3	19	1	4	3	15
Remain enrolled as an undergraduate at UAM	0	0	4	25	19	79	11	55
Accepted into a pre-professional program prior to earning BS degree	2	9	0	0	1	4	0	0
Left Major	1	5	2	13	2	8	2	10
Students that have not earned a BS degree that earned an AA degree	1	5	2	13	7	29	8	40

1. What does the data indicate about student progression from sophomore standing to junior standing and junior standing to senior standing?
In Biology over the past two years, there appears to be about a consistent 10-15% loss of majors between sophomore and junior years and junior and senior years. Based on the skill levels of some of the students that were lost, it is likely those students had chosen a major that wasn't realistic for their skill level; however, there were a few similar students that had the grit to complete the degree.

2. What does the data indicate about retention from sophomore standing and junior standing to graduation?
Typically, once a student makes it into their junior year there is a high chance of graduating in that major. Last minute corrections, such as adding the second major, etc... gives the appearance of more majors graduating than were initially in the program one or two years before. There are a few that reach sophomore or junior status and get tripped up on a particular course, most often organic chemistry. Some of these students change to Natural Science, Life Science Option. Others change to the BIS degree so they can go ahead and finish. This year, at least one student switched to the BIS degree in the last few weeks of the semester so she could complete her degree and enter the MAT program.

Name of Major: **Chemistry**

Academic Year:	2016 – 2017		2017-2018		2018 – 2019		2019-2020	
Number and percentage of majors who:	#	%	#	%	#	%	#	%
Entered as a sophomore	10		13		13		12	
Graduated in major	5	50	1	8	0	0	1	8
Graduated in a second UAM major within the unit	2	20	1	8	0	0	0	0
Remain enrolled as an undergraduate at UAM	2	20	9	69	12	92	9	75
Accepted into a pre-professional program prior to earning BS degree	1	10	2	15	0	0	1	8
Left Major	3	20	1	8	1	8	1	8
Students that have not earned a BS degree that earned an AA degree	1	10	3	23	3	23	1	8

Name of Major: **Chemistry**

Academic Year:	2016 – 2017		2017-2018		2018 – 2019		2019-2020	
Number and percentage of majors who:	#	%	#	%	#	%	#	%
Entered as a Junior	6		11		13		12	
Graduated in major	4	67	7	64	1	8	3	25
Graduated in a second UAM major within the unit	3	50	4	36	1	8	3	25
Remain enrolled as an undergraduate at UAM	0	0	2	18	10	77	8	67
Accepted into a pre-professional program prior to earning BS degree	0	0	4	36	2	15	0	0
Left Major	2	33	1	9	0	0	1	8
Students that have not earned a BS degree that earned an AA degree	0	0	1	9	3	23	4	33

1. What does the data indicate about student progression from sophomore standing to junior standing and junior standing to senior standing?
Although it isn't shown in this data, several chemistry majors are lost during the freshmen year. The ones that remain in the major as a sophomore still face the huge hurdle of the sophomore year courses, such as Organic Chemistry and Quantitative Analysis. Students that struggle at this level often switch from the double major back to a single major, or possibly to a Natural Science major; however, most do graduate with a degree in Math and Sciences. Chemistry is a very difficult

major. It contains difficult concepts, it has a language of its own that give many students difficulties, and parts of it are extremely heavy in mathematics. It is one of the few majors on college campuses that more effort doesn't ensure passing. We try to be as honest as possible with advisees early in their career; however, some hold on until they hit a wall at organic chemistry, physical chemistry, or biochemistry.

2. What does the data indicate about retention from sophomore standing and junior standing to graduation?
Many biology majors are working toward a second major in chemistry throughout their career but don't have it listed on WeevilNet. A few students officially added the chemistry degree as a second major immediately prior to graduation. While this gives the appearance of excellent retention in this degree, the sophomore year tends to be where many realize the rigors of this major, largely due to Organic Chemistry and Quantitative Analysis. Students that complete those courses typically remain on track to complete their degree. Almost every chemistry major that enters during their junior year will stay until they graduate. One group that is an exception to this rule are the pre-pharmacy majors that get early admission into pharmacy school. If they have completed their general education courses, 93 hours, and 12 hours upper level courses, they can transfer hours back and get their degree. Most do this; however, there are a handful that are lacking a general education requirement or simply don't have 93 hours that cannot receive their degree.

Name of Major: **Mathematics**

Academic Year:	2016 – 2017		2017-2018		2018 – 2019		2019-2020	
Number and percentage of majors who:	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Entered as a sophomore	7		4		5		2	
Graduated in major	4	57	0	0	0	0	0	0
Graduated in a second UAM major within the unit	1	14	0	0	0	0	0	0
Remain enrolled as an undergraduate at UAM	2	29	1	25	3	60	2	100
Accepted into a pre-professional program prior to earning BS degree	0	0	0	0	0	0	0	0
Left Major	1	14	3	75	2	40	0	0
Students that have not earned a BS degree that earned an AA degree	1	14	0	0	0	0	0	0

Name of Major: **Mathematics**

Academic Year:	2016 – 2017		2017-2018		2018 – 2019		2019-2020	
Number and percentage of majors who:	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Entered as a Junior	2		3		1		3	
Graduated in major	1	50	1	33	0	0	0	0
Graduated in a second UAM major within the unit	0	0	1	33	0	0	0	0
Remain enrolled as an undergraduate at UAM	0	0	1	33	1	100	3	100
Accepted into a pre-professional program prior to earning BS degree	0	0	0	0	0	0	0	0
Left Major	1	50	1	33	0	0	0	0
Students that have not earned a BS degree that earned an AA degree	0	0	0	0	0	0	0	0

1. What does the data indicate about student progression from sophomore standing to junior standing and junior standing to senior standing?
Mathematics numbers are somewhat inflated during the freshmen and sophomore years due to the fact that pre-engineering majors are double listed as a mathematics major so they can receive financial aid as a degree seeking student. This gives the appearance of a very low retention rate; however, in reality, we are retaining a good portion of the students that began as a mathematics major. The bulk of those that are not being retained in the major are the pre-engineering majors that are often poorly prepared in mathematics. It would probably be better if some of these students were routed to a technical degree in engineering. They could then work toward the Bachelors of Applied Science or transfer to a B.S. Engineering program at an accredited university.

2. What does the data indicate about retention from sophomore standing and junior standing to graduation?
The number of true math majors is low, and a lot of effort goes into getting those students through the program. Special topics courses are offered occasionally, substitutions are made, and courses are sometimes even taught out of sequence to help the students graduate on schedule. Even then, we are always very near the viability line of an average of four graduates per year over a three year period. We do retain a good portion of our true math majors; however, we need to increase the numbers dramatically. Listing pre-engineering majors as math majors gives the appearance of terrible retention in this degree. The biggest threat to the math major is the Bachelor of Teaching and Learning degree. In the past students would major in math, do the MAT, and become a mathematics teacher at the middle or secondary level. There have been several students that plan to teach math that have chosen the Teaching and Learning major because the math courses are less rigorous.

Name of Major: Natural Science

Academic Year:	2016 – 2017		2017-2018		2018 – 2019		2019-2020	
Number and percentage of majors who:	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Entered as a sophomore	7		5		7		9	
Graduated in major	0	0	0	0	0	0	0	0
Graduated in a second UAM major within the unit	0	0	0	0	0	0	0	0
Remain enrolled as an undergraduate at UAM	2	29	5	100	7	100	8	89
Accepted into a pre-professional program prior to earning BS degree	1	14	0	0	0	0	1	11
Left Major	4	57	0	0	0	0	0	0
Students that have not earned a BS degree that earned an AA degree	3	43	3	60	3	43	5	55

Name of Major: **Natural Science**

Academic Year:	2016 – 2017		2017-2018		2018 - 2019			
Number and percentage of majors who:	**#**	**%**	**#**	**%**	**#**	**%**	**#**	**%**
Entered as a Junior	7		4		3		4	
Graduated in major	2	29	2	50	0	0	0	0
Graduated in a second UAM major within the unit	0	0	0	0	0	0	0	0
Remain enrolled as an undergraduate at UAM	0	0	2	50	2	67	4	100
Accepted into a pre-professional program prior to earning BS degree	1	14	0	0	0	0	0	0
Left Major	4	57	2	50	1	33	0	0
Students that have not earned a BS degree that earned an AA degree	1	14	1	25	1	33	3	75

1. What does the data indicate about student progression from sophomore standing to junior standing and junior standing to senior standing?
Very few students enroll initially into the Natural Science major with the intention of earning a degree in that area. Originally, the major was designed for those planning to teach science. The major was designed to provide the broad background needed to pass either the Life Science or Physical Science Praxis exam needed for licensure. About 10-12 years ago, Arkansas did away with this subject area of the Praxis exam and students

now must pass a specific subject area, such as Chemistry, Physics, or Biology. Since then, the Natural Science major has served primarily as a safety net for those that tend to struggle in the biology or chemistry degrees. It has more recently become the chosen path for many of the Allied Health students. Those students are often double listed as a Natural Science major so they can receive financial aid. Only the Physical Therapy majors are required to stay until they complete the degree. Most leave as soon as the pre-requisite courses for the professional program are met. A few students may complete an associates prior to leaving, but most do not. It is extremely difficult to keep track of the students applying to programs since many do not require letters of reference. We encourage students to keep us informed, but many just disappear without giving us any information because they often find out they have been accepted during the summer months prior to starting the program in the fall. So, retention in this degree is very low, but it is almost impossible to retain a student who has no plans of being retained. Successful Allied Health students are the ones that aren't here long enough to get a degree. Only the ones not accepted are here long enough to get an AA degree.

2. What does the data indicate about retention from sophomore standing and junior standing to graduation? Other than those planning on Physical Therapy, the main group graduating in this major are those who switch from either Biology or Chemistry at the last minute because of difficulties in their initial major. Retention to the BS degree is extremely low; however, this major doesn't require additional courses to be taught that aren't already part of general education, earth science, biology, chemistry, or physics offerings. Natural Sciences does serve as a great back up plan for those that struggle late in their science major.

What do the data indicate in regard to strengths, weaknesses, opportunities for growth and threats to effectiveness?

Strengths

- Excellent retention in biology and chemistry majors once they reach their junior year coursework.
- Natural Science degree provides a good alternative for students that get into trouble in their initial major late in their career.
- Allowing students with completed general education requirements, 93 hours, and 12 hours upper level credit to transfer hours back from professional programs to earn a bachelors degree.
- The ability to complete the Biology/Biochem double major in roughly 120 hours.
- The flexibility of the Natural Science major to create your own curriculum to meet your career goals.

Weaknesses

- Listing pre-allied health students as Natural Sciences and pre-engineering students as Mathematics majors creates the appearance of very low retention in those majors.
- Ability to recruit students with a strong math background into the math major.
- Keeping allied health students in the system long enough to obtain a bachelors or associate degree.

Opportunities for Growth

- In the past year, we started the Data Science Option of the Mathematics degree. This major has lots of CIS courses, so there are opportunities to seek a double major. Hopefully this will help in recruiting math majors.
- Develop an engineering related degree as a bachelors or technical program that would attract students.
- Improved recruiting is bringing in more highly qualified majors.

Threats to Effectiveness

- Recruiting
    - Inability to bring in mathematically prepared students because of lack of physics and engineering degrees.
    - Loss of exclusive status in the RHEAP early admissions program with the UAMS College of Pharmacy
    - Declining number of graduates in the southeastern Arkansas primary service area.
    - Increased recruiting efforts by other universities for the better students in this region.
    - Decline of math and technology related jobs in the region.

- Increasing costs and declining budgets
    - Lab equipment initial cost and repairs limits hands on opportunities.
    - Travel to professional meetings for students is quite expensive

Gateway Course Success (Applies only to units teaching Gateway Courses: Arts/Humanities, Math/Sciences, Social Behavioral) (Data Source: Institutional Research)

Table 5: Gateway Course Success*

Course/Remediation		2017-2018 *Passed		2017-2018 Failed		2018-2019 Passed		2018-2019 Failed		2019-20 Passed	2019-20 Failed	3-Year Trend *Passed		3-Year Trend Failed	
		#	%	#	%	#	%	#	%			#	%	#	%
MATH 1003	Survey of Math	195 / 66%		85 / 34%		140 / 65%		77 / 35%		130 /67%	64 / 33%	465 / 67.3%		226 / 32.7%	
MATH 1103	Survey of Math with Review (co-req remediation)	38 / 38.4%		60 / 61.6%		99 / 51%		97 / 49%		81 / 54%	69 / 46%	218 / 49.1%		226 / 50.9%	
MATH1033	Trigonometry	84 / 61%		54 / 39%		63 / 60%		42 / 40%		59 / 62%	38 / 38%	206 / 60.6%		134 / 39.4%	
MATH 1043	College Algebra	396 / 64%		221 / 36%		192 / 64%		107 / 36%		109 / 67%	53 / 33%	697 / 64.7%		381 / 35.3%	
MATH 1143	College Algebra with Review (co-req remediation)	52 / 53%		46 / 47%		26 / 59%		18 / 41%		57 / 83%	12 /17%	135 / 64.0%		76 / 36.0%	
MATH 2255	Calculus I	34 / 50%		34 / 50%		33 / 54%		28 / 46%		26 / 59%	18 / 41%	93 / 53.8%		80 / 46.2%	

*Passed = A, B, or C; Failed = D, F, or W

What do the data indicate in regard to strengths, weaknesses, opportunities for growth and threats to effectiveness?

Strengths

- The pass rate for College Algebra with Review is comparable to College Algebra despite having less prepared students
- Even though the Survey of Math with Review pass rate is significantly lower than that of Survey of Math, the students in Survey of Math with Review are completing both their remediation and college-level math requirement in one term.
- Increased number of contact hours for the students in the "with Review" courses
- Scheduling format allows "with Review" courses to be taught at a slower pace
- "With Review" courses get more time for hands-on practice.

Weaknesses

- Students in allied health fields are still required to take College Algebra, and most have low MATH ACT scores so must take Intro and/or Intermediate Algebra
- Increasing number of students taking concurrent credit math still in high school will never take a math class in college and ultimately will not be recruited into a math major.
- "With Review" courses have little flexibility in scheduling.
- "With Review" course teaching loads reduce the number of courses a faculty can teach; therefore, creates more difficulty in scheduling.
- Quantitative Literacy with Review doesn't have a remedial course designed specifically for that course. Currently students that aren't prepared for QL with Review take Intro Algebra or Advanced Industrial Math.

Opportunities for Growth

- Development of co-requisite college algebra pathway for students with less than 19 ACT.
- Development of appropriate placement exams for QL and QL with Review may more accurately place students into those courses.
- Since most students taking College Algebra also take Trigonometry, we are considering the resurrection of the one semester pre-calculus course which will have content common to both College Algebra and Trigonometry.

Threats to Effectiveness

- Desire to improve flexibility in "with Review" courses could eliminate some of the positives accomplished by the 5 day per week schedule.
- Breaking the College Algebra and Survey of Math students into smaller groups based on ACT makes schedule planning very difficult.
- Declining numbers College Algebra and Trigonometry limits recruiting for the math major

Completion (Graduation/Program Viability)

Table 6: Number of Degrees/Credentials Awarded by Program/Major (Data Source: Institutional Research)

Undergraduate Program/Major	Number of Degrees Awarded				
	2017-2018	2018-2019	2019-2020	Three-Year Total	Three-Year Average
Biology	21	22	21	64	21.3
Chemistry	14	12	20	46	15.3
Mathematics	5	4	3	12	4.0
Natural Science	2	5	2	9	3.0

Provide an analysis and summary of the data related to Progression/Retention/Program Viability including future plans to promote/maintain program viability.

Biology maintains a healthy number of majors each year, graduating approximately 20 per year. A large portion of those are the traditional option, and typically there are 1 or 2 organismal option majors graduating each year. Luckily the Organismal option doesn't require many courses that only they would take. The only course that fits that description at this time is Intro to Organic and Biochemistry Lab. As of now, the course is offered "as needed" with an enrollment of 3-4 students once every 2-3 years. We are reviewing this requirement at this time and may remove that course from the major requirements for that major. No other changes are planned for the Biology major at this time.

Chemistry graduates an average of 15 per year which appears to well above the viability line of an average of four per year; however, most of the chemistry majors are the biochemistry option, and a large percentage of those are double majors with biology. The traditional chemistry degree graduated only 1 student this year. The remainder were biochemistry option. Having this low number in the traditional chemistry degree makes it very difficult to offer the courses specific to that degree in a timely fashion for students to graduate on time. Trying to recruit traditional chemistry majors is difficult because of the heavy mathematics component in that major. This major is designed mainly for those wanting to enter a chemical industry at the bachelors level or, more commonly, enter a Ph.D. program in chemistry.

Mathematics tends to be the major that flirts with the viability line. Because of having zero graduates in 2016-2017 in that major, last year's three year average dropped below the minimum of four graduates per year. This we were able to get three students to complete their degree. Two should have graduated in 2019, but stumbled in their last year. The other was a student that left several years ago. Changes in the curriculum allowed for some substitutions to be done that would allow her to finish. Dropping the zero graduates from 2016-17 and graduating three this year raises our three-year average to 4.0. The following year appears to have a few more majors in place and should help the three year average considerably. Mathematics faculty are making efforts to recruit more majors. We added the Data Science Option in Mathematics as an applied mathematics option to appeal to pre-engineering majors and those interested in computational science. Ultimately, this program needs to grow if it is going to remain viable.

The viability numbers for the Natural Science major are slightly below the needed three year average of four graduates per year; however, for all practical purposes, this degree is a cognate of biology and chemistry. Every course found in this major is either a general education course, a required course, or an elective found in one of the other majors. Even if it falls below the viability line, it would not benefit UAM in any way to drop the major. With that being said, the number of graduates has been fairly consistent for several years. In reality, a drop in this number is a good thing because it shows that fewer students have had to fall back to this major from biology or chemistry.

Faculty

Table 7: Faculty Profile, Teaching Load, and Other Assignments (Data Source: Institutional Research)

Teaching Load shown in table below is by credit hours. * Indicates that contact hours are scheduled that are not included in the credit hour load. **Indicates that the faculty member teaches technical courses for one of the branch campuses.

Faculty Name	Status/Rank	Highest Degree	Area(s) of Responsibility	Teaching Load				Other Assignments
				Summer II	Fall	Spring	Summer I	
Abedi, Farrokh	Assoc. Prof	Ph.D.	Mathematics		9	9*		Asst Dean of Mathematics
Barton, Laura	Instructor	M.S.	Mathematics		15	15	5*	
Fox, Victoria Lynn	Assoc. Prof	Ph.D.	Mathematics	6	11	11	6	
Gavin, Jared	Assoc. Prof	Ph.D.	Mathematics	6	10*	10*		Also teaches Physics
Goodding, Alan	Instructor	MAT	Mathematics		18	9		Mathematics Tutoring
Martin, Carole	Assoc. Prof	Ed.D.	Mathematics		12*	9*		
Cooper, Lura Sandlin	Instructor	M.Ed	Mathematics	6	17	15		
Sayyar, Hassan	Assoc. Prof	Ph.D.	Mathematics		12	9	6	Mathematics Tutoring
Fairris, Jerry Jeff** (Crossett)	Instructor		Mathematics		3**	5**		Instructor at Crossett Campus
Hood, Jill** (McGehee)	Instructor	MAT	Mathematics		12**	**		Instructor at McGehee Campus
Burrows, Ross	Asst Prof	Ph.D.	Physics		12*	15*		
Abbott, Richard	Asst Professor	Ph.D.	Biology		9*	10*		Director of Sundell Herbarium
Bacon, Ed	Instructor/Prof Emeritus	Ph.D.	Biology		16*	16*	4*	Director of Turner Neal Museum / Fundraiser
Blount, Keith	Asst Prof	Ph.D.	Biology		10*	12*		
Chappell, Jessie	Lab Instructor	M.S.	Biology		12*	11*		Bio Sci Stockroom manager
Hunt, John	Professor	Ph.D.	Biology	6	14*	12*		Director of Pre-Medical Studies
Manning, Glenn	Assoc. Prof	Ph.D.	Biology		14*	14*	4*	
Morgan, Lauren	Lab Instructor	B.S.	Biology	2*	11*	5*	2*	Microbiology lab manager

Faculty Name	Status/Rank	Highest Degree	Area(s) of Responsibility	Teaching Load				Other Assignments
Sims, Christopher	Professor	Ph.D.	Biology		14*	12*	6	
Stewart, Mary	Professor	Ph.D.	Biology		14*	11*		
Grilliot, Matthew	Instructor (Adjunct)	Ph.D.	Biology		4*	4*		
Stephens, Faye (McGehee)	Instructor	B.S has finished MS coursework	Biology	4*				Instructor at McGehee Campus
Walker, Randall (McGehee)	Instructor	M.S.	Biology		11*	11*	4*	
Bramlett, J. Morris	Professor	Ph.D.	Chemistry		3		3*	Dean, Math and Natural Sciences Director of Pomeroy Planetarium
Hatfield, Susan	Lab Instructor	M.S.	Chemistry	2*	15*	7*	4*	Gen Chem stockroom manager
Huang, Jinming	Assoc. Prof	Ph.D.	Chemistry		11*	12	4*	
Taylor, M. Jeffrey	Assoc. Prof	Ph.D.	Chemistry		9*	11*		
Williams, Andrew	Assoc. Prof	Ph.D.	Chemistry	6	13*	15*	4*	Asst Director of Research Program for Minority Students (RPMs)
Sayyar, Kelley	Instructor	M.S.	Earth Science	4*	20*	13*		
Early College High School Faculty								
Cupples, James	ADJ Instructor	M.S.	Math – Parkers Chapel H.S		3			Employed at Parkers Chapel High School
Bridgforth, Cherie	ADJ Instructor	M.A.T.	Math-White Hall H.S.		3	3		Employed at White Hall High School
Shelvia Ross	ADJ Instructor	M.A.T.	Math-Hamburg H.S.		14	9		Employed at Hamburg High School

What significant change, if any, has occurred in faculty during the past academic year?

Ms. Lura Sandlin Cooper was an instructor in Mathematics. In December, Jill Hood, of the McGehee campus resigned. Rather than filling that position, we willingly shared Ms. Cooper for the spring term. She taught some courses on the main campus, and some on the McGehee campus. This spring, Susan Hatfield planned to leave for a position at Texas A&M University. In order to re-hire that critical position, we were told that another faculty member would have to leave. Ms. Cooper was the last hired. The McGehee campus wanted her full time. She moved to the McGehee campus full time beginning with the Summer I 2020 term.

Jerry Fairris left the mathematics instructor position at the Crossett campus in December 2019. I left in order to gain benefits in his retirement from the Arkansas Public School retirement. The position was left unfilled in the spring. He has been rehired for the fall term.

Table 8: Total Unit SSCH Production by Academic Year (ten year) (Data Source: Institutional Research)

Academic Year	Total SSCH Production	Percentage Change	Comment
2008-09	15792		not including 998 concurrent enrollment
2009-10	14852	-6.05%	not including 717 concurrent enrollment
2010-11	13842	-6.80%	not including 1314 concurrent enrollment
2011-12	14909	+7.71%	not including 1137 concurrent enrollment
2012-13	14391	-3.60%	not including 1161 concurrent enrollment
2013-14	13546	-5.88%	not including 1070 concurrent enrollment
2014-15	15550	+14.8%	not including 1403 concurrent enrollment
2015-16	14696	-5.42%	not including 1430 concurrent enrollment
2016-17	13841	-5.82%	not including 1729 concurrent enrollment
2017-18	14421	+4.19%	not including 1296 concurrent enrollment
2018-19	11915	-17.4%	not including 554 concurrent enrollment
2019-20	10402	-13.7%	not including 381 concurrent enrollment

What significant change, if any, has occurred in unit SSCH during the past academic year and what might have impacted any change?
If the data provided is accurate, the School of Math and Sciences experienced a 13.7% drop in SSCH from the previous year, not including a 31.2% drop in concurrent enrollment. The enrollment in many of the upper level courses was similar to previous years. Some of the lower level courses had lower enrollment, but to have such a large drop in SSCH for the second consecutive year was very surprising. Fewer college level courses are being taught on the technical campuses, which accounts for some loss of SSCH. Many students are no longer taking remedial courses in mathematics, which would account for a fairly large portion of the decline. Incoming freshman numbers in the science majors have declined the past three years. A few years ago, it was common to have 60+ students in Principles of Biology I. Last fall we were near 30. The upcoming year is near 40, so there appears to be improvement in that area.

Unit Agreements, MOUs, MOAs, Partnerships

Table 9: Unit Agreements-MOUs, MOAs, Partnerships, Etc.

Unit	Partner/Type	Purpose	Date	Length of Agreement	Date Renewed
UAM Pre-Pharmacy Program	UAMS College of Pharmacy	To provide early admissions opportunities for outstanding high school students and allow UAMS to recommend UAM as an institution to complete pre-pharmacy requirements	Feb 2017	Indefinite	annually at summer meeting by verbal agreement of both parties

List/briefly describe notable faculty recognition, achievements/awards, service activities and/or scholarly activity during the past academic year.

Faculty Scholarly Activity, Calendar Year 2019, Spring 2020

- **Farrokh Abedi** –Worked on research project with a student. The student planned to present her work at the Arkansas Oklahoma Regional Mathematical Association of America meeting, but was canceled due to COVID.
  - McClain, M; Abedi, F; Taylor Series Solution to the Second Order Differential Equation. Arkansas Oklahoma section of the Mathematical Association of America meeting, 2020
- **Ed Bacon** – Consultant to the Arkansas Game and Fish Commission, and Consultant to the U.S. National Park Service. Led four students on aquatic biology research. There were two student presentations completed and two others planned that were canceled due to COVID.
  - Pike, K; Nguyen, M; Bacon E; Effects of Recreational Activities on Messels and the Asiatic Clam in the Saline River. Arkansas Academy of Science, 2019.
  - Booth, D; Pearson, L; Bacon, E; Biodiversity and Habitat Preferences of Aquatic Insects in the Lower Little Missouri River. Arkansas Academy of Science, 2019
  - Ludwig, T. and E. J. Bacon. Macroinvertebrate Diversity and Abundance in the Headwaters of the Little Missouri River, Arkansas Academy of Science, 2020 – canceled
  - Bolick, C. N., C. A. Knighten, and E. J. Bacon. Habitat Selection of Macroinvertebrates in the Lower Saline River, Arkansas Academy of Science, 2020.-canceled
- **Keith Blount** – Consultant for the Arkansas Department of Health/CDC. Several research projects related to tick and mosquito borne diseases. Has led to substantial funding (see below)
- **Lynn Fox** – Research Project: Statistical Analysis of Fatty Acids found in Algae.. Presented with Hayden Jumper at the Mathematical Association of America, 2019 Tahlequah, OK.
- **Jinming Huang**- Research project:Inhibition of Nitrite formation. Led to one presentation: Claycomb, S; Haney, J; Huang J; Mechanism of Cabbage Inhibiting the Formation of Nitrite in Celery Catalyzed by Human Saliva. Posters at the Captiol, 2020, Little Rock, AR. Schedule for presentation at Arkansas Academy of Science in April, 2020, but cancelled due to COVID.
- **John Hunt** – Several research projects with 5 students. 1 completed presentation, one was cancelled due to COVID.
  - Lozano-Lopez, Dixie; Neilson, E; Castillo, I; Hunt, J; Grilliot, M; Best, T; Energy Content of Seeds of Common Sunflowers (Helianthus annuus) in the Diet of Scaled Quail (Calliepepla squamato) in Southeastern New Mexico. Posters at the Capitol, 2019.
  - Hunt JL, Grilliot, M, Best T, Lozano-Lopez D, Neilson E, Castillo I; Energy Content of Seeds of Common Sunflowers (Helianthus annuus) in the Diet of Scaled Quail (Calliepepla squamato) in Southeastern New Mexico, Journal of the Arkansas Academy of Science. 2020.

- Hunt JL, Grilliot, M, Best T, Lozano-Lopez D, Neilson E, Schlegel-Ridgway, T; Energy Content of Seeds of Texas Doveweed (Croton texensis) from the diet of Mourning Doves (Zenaida macroura) from southeastern New Mexico. Journal of the Arkansas Academy of Science, 2019,
- Hunt, J. L., and C. G. Sims. 2019. Photographic record of a greater roadrunner (Geococcyx californianus) from Drew County, Arkansas. Journal of the Arkansas Academy of Science, 73:139-140.

Dr. Hunt, with Matt Grilliot and Troy Best, . authored a textbook Southeastern Arkansas Mammalogy Lab Manual. He also

- **Chris Sims** - Research Project: Physiological stress in waterfowl. Led to one poster presentation:
  - (2019) "Mallards (Anas platyrhynchos) regulate stress responsiveness according to energetic demands during the fall and winter." Henson, J.r., Sims, C.G., and Schoech, S. North American Duck Symposium 8.

  Dr. Sims also authored a popular publication:
  - (2020) "A lifetime of hunting buddies: reflections on friendships from the woods, lost and found." C. G. Sims. Arkansas Wildlife.
- **Mary Ste**wart – Several projects in genetics research: Led to planned poster presentation:
  - Tate, M, Stewart, M; Analysis of cell size and number in snoRNA deficient Drosophila melanogaster. Arkansas Space Grant Consortium Annual Symposium, 2020. Cancelled due to COVID.
- **Andrew Williams** – Numerous research projects in chemistry and biochemistry with six students. He also conducted research in Mass Spectroscopy with FAMES at the High Performance Mass Spectroscopy Facility at the University of Arkansas. His work led to five professional presentations:
  - Extraction and Analysis of Medicinal Biomolecules in Witch Hazel. Wells, K, Glover, A. Poster presented at the 27th INBRE meeting on October 26th, 2019.
  - Determination of Fatty Acid Content in Algae. Mencer, R, Berry, M. Poster presented at the 27th INBRE meeting on October 26th, 2019.
  - Determination of Fatty Acid Content in Algae. Mencer, R, Berry, M. Poster presented at the 27th INBRE meeting on October 26th, 2019.
  - Extraction and Analysis of Medicinal Biomolecules in Witch Hazel. Glover, A, Taylor, L, Poster presented for the Arkansas Space Grant Consortium online.
  - Determination of Fatty Acid Content in Algae. Ashcraft, T, Rodriquez, J. Poster presented at the 27th INBRE meeting on October 26th, 2019.
- **Richard Abbott –** has several collaborative projects with other universities and agencies. He is involved in plant surveys, workshops, and plant identification projects. He also had several publications:
  - Pastore, J.F.B., J.R. Abbott, K.M. Neubig, C. van den Berg, M.C. de A. Mota, & M. Whitten. Submitted. Towards a new generic delimitation in Polygalaceae, II: Phylogeny of Polygala. Taxon.
  - Neubig, K.M. & J.R. Abbott. 2019. Interspecific hybridization in North American Polygala (Polygalaceae). JBRIT in press.

- Abbott, J.R. & R.L. Thompson. 2019. Aira elegans (Poaceae) and Medicago orbicularis (Fabaceae): new to the Kentucky flora. Phytoneuron 2019-42: 1–6.
- Mota, M., J.R. Abbott, J.F.B. Pastore, R.M. Salas, & K.M. Neubig. 2019. Three lonely Argentines: toward a new generic delimitation in Polygalaceae. Taxon https://doi.org/10.1002/tax.12090
- Abbott, J.R. Submitted. Polygalaceae. For: Flora of North America Editorial Committee, eds. 1993+. Flora of North America North of Mexico. 16+ vols. New York and Oxford. Vol. 11. [Accepted].
- Abbott, J.R. Iridaceae, the Iris Family. In: New Manual of Vascular Plants of Northeastern United States and Adjacent Canada, online edition. NYBG Press, NY. [Accepted].

- **Ross Burrows** – has published a research paper involving plasma research that he had started prior to coming to UAM:
  - Burrows, R. Ion Acceleration in Multi-Fluid Plasma: Including Charge Separation induced Electric Field Effects in Supersonic Wave Layers. **2020**, MDPI Plasma.

  Dr. Burrows also completed a research project with 4 students which led to a presentation:
  - Bowman, J; Smith, N; Holloway, M; Chacon, O; Burrows, R; Budget Freefall. Posters at the Capitol, 2020.

Notable Faculty Recognition or Faculty/Service Projects

- Laura Barton, Director of ACTM Southeast Arkansas Regional Mathematics Contest
- Keith Blount, Director of the Research Program for Minority Students (RPMs)
- Ross Burrows, Member of the Center for Space Plasma and Aeronomic Research (CSPAR) at UA-Huntsville.
- Hassan Sayyar, Director of the Southeast Arkansas Regional Science Fair
- Morris Bramlett, Arkansas Dean's Association Board of Directors
- Glenn Manning, Board of Advisors for the Ouachita Mountain Biological Station
- John Hunt, Board of Governors for the Ouachita Mountain Biological Station
- Andrew Williams, Assistant Director of the Research Program for Minority Students (RPMs) and Campus Representative for the NASA, Arkansas Space Grant Consortium.
- Ed Bacon, Director of the Turner Neal Museum of Natural History; UAM Coordinator for the Gulf Coast Research Laboratory; Coordinator for the Arkansas Game and Fish Stream Team; Member of the Invasive Species Committee for the Arkansas Game and Fish. Director of the Ouachita River Basin Research Laboratory

Faculty Grant Awards

- Andrew Williams, NASA Arkansas Space Grant Consortium, $8500 for the project "Determining Fatty Acid Content of Algae for Nutrient Value."
- Keith Blount and John Hunt, UAM Centennial Opportunity Award, $16,000 for purchase of new dissecting microscopes
- John Hunt, University of Arkansas at Monticello Faculty Research Award. Survey of bat diversity in southeastern Arkansas. $1,500.

- Jinmng Huang, NASA Arkansas Space Grant Consortium $4200 for Cabbage Inhibits Nitrite Formation in other Vegetables.

Describe any significant changes in the unit, in programs/degrees, during the past academic year.

List program/curricular changes made in the past academic year and briefly describe the reasons for the change.

The Biology major underwent a major review and several course changes were made:

- BIOL 3xx4 General Entomology, was added
  - Justification: **:** Currently a faculty member in BIOL (Keith Blount) is teaching the ENTO 2283 Applied Entomology course in the College of Forestry, Agriculture and Natural Resources. This course covers topics that would make it a useful elective for Biology majors; however, as a lower level course outside the major it serves little value toward a biology major's degree requirements. The course will still cover the agriculture specific material, but some material will be added to make it more of a general entomology course. The lecture will change from a three credit course to a four credit course with the included lab. Entomology is an advanced course where lab attendance is essential for student success in meeting the basic requirements in the course.
- BIOL 1102, Medical Terminology was converted to a 3 hour course, BIOL 1103
  - Justification: This course is designed primarily for those in Allied Health fields, and is often a required prerequisite for those programs. UAM's course sometimes is not accepted by those institutions because it is only two hours instead of three. The additional time will allow more in depth study of some topics, and will allow some of the outside assignments to have more in class focus.
- MATH 1103, Survey of Math with Review (and MATH 102 lab) and MATH 1003 Survey of Math were renamed to MATH 1103 Quantitative Literacy with Review and MATH 1003 Quantitative Literacy
  - Justification: To align our course name with other equivalent courses in ACTS. There will be no change in course content. This was done at the request of the Arkansas Department of Higher Education because they refused to accept our course as equivalent despite the fact that our syllabus and course content were identical to their syllabus.
- Bachelor of Science in Mathematics-Data Science Option was added
  - Justification: Currently there is only one option in the Mathematics degree. It is a broad math degree primarily designed for those that want to attend graduate school in Mathematics. The proposed option is more of an applied mathematics degree with fewer proof based courses. This option includes several CIS courses as supportive options because many students with applied mathematics background seek careers that use computational methods to solve complex mathematical problems. With the emphasis on applied mathematics, we feel that many of the students that attend UAM initially as a pre-engineering major may opt for this degree rather than transferring to an engineering program at another university. It may become a popular option for those interested in pursuing a career as a teacher because it gives them a strong background that will allow them to teach both mathematics and computer courses at the secondary level.

Describe unit initiatives/action steps taken in the past academic year to enhance teaching/learning and student engagement.

There are numerous ways that the faculty in Math and Sciences have tried to improve student performance. Here is a list of some of those items:

1) Faculty have been encouraged to follow the plan described in the "First Four Weeks" program that was developed about 6 years ago by a committee and Academic Affairs on this campus. There are several things that are done during the first four weeks of the term to help the students be more successful. Some of these are: taking time out of class to teach the students to take notes in a course, giving lots of tips on how to study for exams, and even tips on how to take exams. Many of the items described in this plan are designed to build relationships between the students and the faculty. This was asked of all faculty by the dean.

2) The number of tutoring hours in the Science Center were reduced this past year; however, to offset that some of the math faculty held a portion of their office hours in the campus tutoring center in the Student Success Center.

3) We are bringing in more external speakers, especially for those that are planning to go to a professional program. We are actively recruiting the pre-professional students to come to these events. The topic of discussion is largely, "What do you have to do at UAM to be successfully accepted into ___."

4) We are asking recent alumni what we could have done to better prepare them for their professional program, their job, or other endeavors.

5) The faculty take attendance daily, and turn in students with poor attendance or performance to academic alert as early as possible.

6) We are making efforts to get more students involved with undergraduate research. The RPMS (Research Program for Minority Students) has been very successful at getting the students involved as a freshman and helping them stay active throughout their career. Several of the minority students have attended graduate or professional programs in the last few years.

7) A variety of distance learning techniques were used after the University made the decision to go totally online in March. Several faculty did some very creative things to mimic laboratory exercises in their courses.

<u>Other Unit Student Success Data</u>

- **Table 10: Acceptances into Professional Programs in the Past Year**
- **Table 11: Graduates and placement from the School of Math and Sciences July 2018-June 2019**

Table 10 Acceptances into Professional / Grad Programs in the Past Year ***Indicates graduation prior to this year**
%Indicates admission prior to earning degree

Student identifier		Major	Major	Placement
A	5/20	Biology	Biochemistry	UAMS Grad Program
B	5/20	Biology	Biochemistry	UAMS College of Pharmacy
C	5/20	Biology		UAM Nursing Program
D	5/20	Biology	Biochemistry	UMKC College of Dentistry
E	5/20	Biology	Biochemistry	UT-Memphis College of Dentistry
F	5/20	Biology	Biochemistry	LSU College of Veterinary Medicine
G	5/20	Biology	Biochemistry	UAMS College of Pharmacy
H	5/20	Chemistry		Grad Program at Tuskegee University
I	5/20	Biology	Biochemistry	Parker College of Chiropractic Medicine
J	5/20	Biology	Biochemistry	UAMS College of Medicine
K	12/19	Biology		Cytotechnology UAMS or MS Mississippi College Masters program
*L	8/19	Biochemistry	Biology 5/19	Logan College of Chiropractic Medicine
%M		Natural Science		Charleston School of Pharmacy
*N	5/19	Biology	Biochemistry	Parker College of Chiropractic Medicine
%O		Biology	Biochemistry	ULM College of Pharmacy
%P		Biology	Biochemistry	UAMS College of Pharmacy
Q	5/20	Biology	Biochemistry	UAM Master of Arts in Teaching –placed at Warren High School
R	5/20	BIS		UAM Master of Arts in Teaching – placed at Dumas High School
S	5/19	Natural Science		UAMS Physician Assistant Program
*T	5/19	Biology	Biochemistry	Harding University Physician Assistant Program
%U		Natural Science		UAMS College of Nursing
%V		Natural Science		Jefferson School of Nursing
*W	5/19	Biology -Org		Arkansas Tech University Masters in Biology program
X		Natural Science		South Ark College –Physical Therapy Assistant program
*Y	5/19	Biology	Biochem	Tulane College of Medicine

Table 11 Graduates from the School of Math and Sciences July 2019 – June 2020

Name	Date	Major	Major	Placement
1	5/20	Biology		Working as dental assistant / applying to dental school
2	5/20	Biology	Biochemistry	UAMS Grad Program
3	5/20	Biology		
4	5/20	Biology	Biochemistry	Teaching/Coaching Warren High School
5	5/20	Mathematics		
6	5/20	Biology		Applying to dental school
7	5/20	Biology	Biochemistry	UAMS College of Pharmacy
8	5/20	Biology		UAM Nursing Program
9	5/20	Biology	Biochemistry	UMKC College of Dentistry
10	5/20	Biochemistry		UAMS College of Pharmacy (transfer hours back)
11	5/20	Biology	Biochemistry	UT-Memphis College of Dentistry
12	5/20	Biology	Biochemistry	LSU College of Veterinary Medicine
13	5/20	Biology	Biochemistry	
14	5/20	Biology		
15	5/20	Biology	Biochemistry	UAMS College of Pharmacy
16	5/20	Natural Sci –L.S.		
17	5/20	Chemistry		Grad Program at Tuskegee University
18	5/20	Biology	Biochemistry	
19	5/20	Biology		
20	5/20	Biology	Biochemistry	Parker College of Chiropractic Medicine
21	5/20	Biology	Biochemistry	UAMS College of Medicine
22	5/20	Biochemistry		UAMS College of Pharmacy (transfer hours back)
23	5/20	Biology	Chemistry	Applying to dental schools
24	12/19	Biochemistry		UAMS College of Pharmacy (transfer hours back)
25	12/19	Biology		Cytotechnology UAMS or MS Mississippi College
26	12/19	Biology		
27	12/19	Biochemistry		UAMS College of Pharmacy (transfer hours back)
28	12/19	Biology		
29	12/19	Mathematics		
30	8/19	Biochemistry		Logan College of Chiropractic Medicine
31	12/19	Biochemistry		UAMS College of Pharmacy (transfer hours back)

Name	Date	Major	Major	Placement
Name	**Date**	**Major**	**Major**	**Placement**
32	8/19	Biochemistry		UAMS College of Pharmacy (transfer hours back)
33	12/19	Mathematics	CIS	
34	1/20	Natural Science		Starting MBA program at SAU

Addendums

Addendum 1: UAM Vision, Mission, and Strategic Plan

VISION

The University of Arkansas at Monticello will be recognized as a model, open access regional institution with retention and graduation rates that meet or exceed its peer institutions.
Through these efforts, UAM will develop key relationships and partnerships that contribute to the economic and quality of life indicators in the community, region, state, and beyond.

MISSION

The University of Arkansas at Monticello is a society of learners committed to individual achievement by:
- Fostering a quality, comprehensive, and seamless education for diverse learners to succeed in a global environment;
- Serving the communities of Arkansas and beyond to improve the quality of life as well as generate, enrich, and sustain economic development;
- Promoting innovative leadership, scholarship, and research which will provide for entrepreneurial endeavors and service learning opportunities;
- Creating a synergistic culture of safety, collegiality, and productivity which engages a diverse community of learners.

CORE VALUES:

- *Ethic of Care*: We care for those in our UAM community from a holistic perspective by supporting them in times of need and engaging them in ways that inspire and mentor.
- *Professionalism*: We promote personal integrity, a culture of servant leadership responsive to individuals' needs as well as responsible stewardship of resources.
- *Collaboration*: We foster a collegial culture that encourages open communication, cooperation, leadership, and teamwork, as well as shared responsibility.
- *Evidence-based Decision Making*: We improve practices and foster innovation through assessment, research, and evaluation for continuous improvement.
- *Diversity*: We embrace difference by cultivating inclusiveness and respect of both people and points of view and by promoting not only tolerance and acceptance, but also support and advocacy.

UAM STUDENT LEARNING OUTCOMES:

- *Communication:* Students will communicate effectively in social, academic, and professional contexts using a variety of means, including written, oral, quantitative, and/or visual modes as appropriate to topic, audience, and discipline.
- *Critical Thinking:* Students will demonstrate critical thinking in evaluating all forms of persuasion and/or ideas, in formulating innovative strategies, and in solving problems.
- *Global Learning:* Students will demonstrate sensitivity to and understanding of diversity issues pertaining to race, ethnicity, and gender and will be capable of anticipating how their actions affect campus, local, and global communities.
- *Teamwork:* Students will work collaboratively to reach a common goal and will demonstrate the characteristics of productive citizens.

STRATEGIC PLAN

1. STUDENT SUCCESS—fulfilling academic and co-curricular needs

 Develop, deliver, and maintain quality academic programs.

o Enhance and increase scholarly activity for undergraduate and graduate faculty/student research opportunities as well as creative endeavors.
o Revitalize general education curriculum.
o Expand academic and degree offerings (technical, associate, bachelor, graduate) to meet regional, state, and national demands.

 Encourage and support engagement in academics, student life, and athletics for well-rounded experience.

o Develop an emerging student leadership program under direction of Chancellor's Office.
o Enhance and increase real world engagement opportunities in coordination with ACT Work Ready Community initiatives.
o Prepare a Student Affairs Master Plan that will create an active and vibrant student culture and include the Colleges of Technology at both Crossett and McGehee.

 Retain and recruit high achieving faculty and staff.

o Invest in quality technology and library resources and services.
o Provide opportunities for faculty and staff professional development.
o Invest in quality classroom and research space.
o Develop a model Leadership Program (using such programs as American Council on Education, ACE and/or Association of American Schools, Colleges, and Universities, AASCU) under the direction of the Chancellor's Office to grow our own higher education leaders for successive leadership planning.
o Create an Institute for Teaching and Learning Effectiveness.

 Expand accessibility to academic programs.
o Engage in institutional partnerships, satellite programs, alternative course delivery, and online partnerships with eVersity.
o Create a summer academic enrichment plan to ensure growth and sustainability.
o Develop a model program for college readiness.
o Revitalize general education.
o Coordinate with community leaders in southeast Arkansas to provide student internships, service learning, and multi-cultural opportunities.

2. ENROLLMENT and RETENTION GAINS
 Engage in concurrent enrollment partnerships with public schools, especially in the areas of math transition courses.
 Provide assistance and appropriate outreach initiatives with students (working adults, international, transfers, and diversity) for successful transition.
 Coordinate and promote marketing efforts that will highlight alumni, recognize outstanding faculty and staff, and spotlight student success.
 Develop systematic structures for first year and at-risk students.
 Identify and enhance pipeline for recruiting

3. INFRASTRUCTURE REVITALIZATION and COLLABORATIONS
 Improve Institutional Effectiveness and Resources through participation in a strategic budget process aligned with unit plans and goals for resource allocations.

 Conduct and prepare Economic Impact Studies to support UAM efforts and align program and partnerships accordingly.

 Prepare and update University Master Plan.

 Partner with system and state legislators to maximize funding.

 Increase external funding opportunities that will create a philanthropic culture among incoming students, graduates, and community.
o Increased efforts to earn research and grant funds.
o Creation of philanthropic culture among incoming students, graduates and community.
Collaborating with Athletics Fundraising to maximize synergies.
Create a Growing our Alumni Base Campaign.
o Encourage entrepreneurial opportunities where appropriate.
o Participation in articulation agreements to capitalize on academic and economic resources.
o Partner with communities to address the socio economic, educational, and health and wellness (safety needs) of all citizens.

Addendum 2: Higher Learning Commission Sample Assessment Questions

1. How are your stated student learning outcomes appropriate to your mission, programs, degrees, students, and other stakeholders? How explicitly do major institutional statements (mission, vision, goals) address student learning?

- How well do the student learning outcomes of programs and majors align with the institutional mission?
- How well do the student learning outcomes of general education and co-curricular activities align with the institutional mission?
- How well do course-based student learning outcomes align with institutional mission and program outcomes?
- How well integrated are assessment practices in courses, services, and co-curricular activities?
- How are the measures of the achievement of student learning outcomes established? How well are they understood?

2. What evidence do you have that students achieve your stated learning outcomes?

- Who actually measures the achievement of student learning outcomes?
- At what points in the curriculum or co-curricular activities are essential institutional (including general education), major, or program outcomes assessed?
- How is evidence of student learning collected?
- How extensive is the collection of evidence?

3. In what ways do you analyze and use evidence of student learning?

- Who analyzes the evidence?
- What is your evidence telling you about student learning?
- What systems are in place to ensure that conclusions are drawn and actions taken on the basis of the analysis of evidence?
- How is evidence of the achievement of student learning outcomes incorporated into institutional planning and budgeting?

4. How do you ensure shared responsibility for student learning and assessment of student learning?

- How well integrated are assessment practices in courses, services, and co-curricular activities?
- Who is responsible for the collection of evidence?
- How cross-functional (i.e., involving instructional faculty, Student Affairs, Institutional
- Research, and/or relevant administrators) are the processes for gathering, analyzing, and using evidence of student learning?
- How are the results of the assessment process communicated to stakeholders inside and outside the institution?

5. How do you evaluate and improve the effectiveness of your efforts to assess and improve student learning?

- What is the quality of the information you have collected telling you about your assessment processes as well as the quality of the evidence?
- How do you know how well your assessment plan is working?

6. In what ways do you inform the public about what students learn—and how well they learn it?

- To what internal stakeholders do you provide information about student learning?
- What is the nature of that information?
- To what external stakeholders do you provide information about student learning?

- What is the nature of that information?

Addendum 3: Arkansas Productivity Funding Metrics

- The productivity funding formula consists of four categories: Effectiveness (80% of formula), Affordability (20% of formula), Adjustments, and Efficiency (+/-2% of formula).

Effectiveness	Affordability	Adjustment	Efficiency
• Credentials • Progression • Transfer Success • Gateway Course Success	• Time to Degree • Credits at Completion	• Research (4-year only)	• Core Expense Ratio • Faculty to Administrator Salary

Addendum 4: Turner Neal Museum and Pomeroy Planetarium Report

This year the number of visitors dropped considerably due to COVID. Normally March through May are the busiest time of the year because school groups often schedule their visits after the state testing is completed in March. Because the University pretty much shut down to all outside visitors to campus, we saw no visitors after March 11.

While we see near a 1000 visitors on a normal year, this year we saw only 120. There were a couple of early school groups scheduled, two girl scout events, a boy scout event, and a couple special requested private shows. The Astronomy class visited the planetarium on more than one occasion.

Some of the improvements made over the last year include: removing old equipment from the planetarium shelving, building new displays, adding lighting to the displays, and continued work on the air conditioning system. Several fish tanks were added with both fresh and saltwater species. The large alligator was swapped for a much smaller alligator (10 inches long) with the alligator farm in Hot Springs, AR. A new telescope was purchased for night viewing. It is interfaced to a computer and allows viewing on a monitor rather than looking through an eyepiece. Some displays were fitted with plexiglass covers to prevent visitors from handling the delicate preserved animals on display.

Addendum 5: Faculty Development Funds Report

In September 2019, $7,096.32 was provided to the School of Mathematical and Natural Sciences for Faculty Development. With the additional $3,861.23 in carry-over from the 2018-19 academic year the total starting budget for the 2019-2020 academic year was $10,957.55.

During the year, 3 faculty development proposals were approved and paid. The following is a list of those activities:

Date	Faculty Member	Description	Location	Amount
July 17, 2019	Kelley Sayyar	Earth Educators Rendezvous	Nashville, TN	$1,583.16
July 26, 2019	Chris Sims	8th North American Duck Symposium	Winnipeg, Canada	$992.13
September 27, 2019	Glenn Manning	2019 Missouri Herpetological Association	Steelville, MO	$232.56

	Inflow	Outflow
2019-2020 Budget	$7,096.32	
Carry-over from 2018-19	$3,861.63	
2019-2020 Expenditures		$2,807.85
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Available Balance Remaining	$8,150.10	

Several other faculty development travel activities were planned for spring 2020; however, were cancelled due to COVID.